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10 Ιουνίου 2021

κα. Αλεξία Πηλακούρη
για Πρόεδρο Συμβουλίου Φορέα ΔΙ.Π.Α.Ε.
Λεωφόρος Λεμεσού 5,
2112 Λευκωσία

ΘΕΜΑ: <u>Αναβολή λήψης απόφασης για πιστοποίηση για το πρόγραμμα σπουδών με την επωνυμία</u>
<u>"Medical Education (18 months/90ECTS, M.Sc., E-Learning)</u>
<u>του Ιδρύματος Ανώτερης Εκπαίδευσης</u>
<u>Ευρωπαϊκό Πανεπιστήμιο Κύπρου</u>

Αξιότιμη κα Πηλακούρη,

Αναφέρομαι στην επιστολή σας με ημερομηνία 31 Μαΐου 2021 (Αρ. Φακ.: 07.14.327.099), σε σχέση με το πιο πάνω θέμα. Πιο κάτω σας υποβάλλουμε τις απαντήσεις του Τμήματος Ιατρικής σε σχέση με τα επιπρόσθετα στοιχεία τα οποία έχουν κριθεί ως απαραίτητα για την τελική πιστοποίηση του συγκεκριμένου Προγράμματος:

> ***1. Ενίσχυση και ανάπτυξη του υφιστάμενου προσωπικού με επισκέπτες ακαδημαϊκούς, οι οποίοι να έχουν εμπειρία και δημοσιεύσεις στην Ιατρική Εκπαίδευση. Παρακαλώ όπως αποσταλούν συγκεκριμένα ονόματα και συμφωνίες/ συμβόλαια.***

Ευχαριστούμε ιδιαίτερα το Συμβούλιο του Φορέα ΔΙ.Π.Α.Ε. για την πιο πάνω υπόδειξη. Το Τμήμα Ιατρικής επιθυμεί να επιβεβαιώσει ότι έχει ήδη προβεί σε σχετικές διεργασίες για τη διασφάλιση της άμεσης συνεργασίας με επισκέπτες ακαδημαϊκούς με την τελική έγκριση του Προγράμματος, όπως προτείνεται από το Φορέα ΔΙ.Π.Α.Ε. Πιο συγκεκριμένα, έχουν διασφαλιστεί ήδη δύο τέτοιες συνεργασίες, οι οποίες αναφέρονται πιο κάτω:

- Ruolan Wang, Lecturer, University of Liverpool Life Long Center.
- Cesar Orsini, Associate Professor, Norwich Medical School, University of East Anglia.

Συνημμένα στο Παράρτημα Ι και ΙΙ εμφανίζονται οι προσκλήσεις στους δύο ακαδημαϊκούς (αντίστοιχα), όπου επισημαίνονται και οι αντίστοιχες ενότητες του Προγράμματος στις οποίες θα διδάξουν.

2. Διασύνδεση της παιδαγωγικής του προγράμματος σπουδών με την πρακτική άσκηση, δηλαδή να δίνεται η ευκαιρία στους φοιτητές/ριες να διασυνδέουν τη διδασκαλία με διαδραστικές ασκήσεις λύσης προβλήματος και πρακτικής εξάσκησης. Παρακαλώ όπως αποσταλούν αναθεωρημένοι οδηγοί μελέτης με αυτή την πρακτική και σύμφωνοι με τις σχετικές ανακοινώσεις του Φορέα ΔΙΠΑΕ.

Ευχαριστούμε το Συμβούλιο του Φορέα ΔΙ.Π.Α.Ε. για την επισήμανση. Το Τμήμα Ιατρικής επιθυμεί να επεκτείνει τη σχετική του αναφορά στην απαντητική επιστολή του Τμήματος στην Έκθεση Αξιολόγησης της Ε.Ε.Α. για τη διασύνδεση της διδασκαλίας με διαδραστικές ασκήσεις λύσης προβλήματος και πρακτικής εξάσκησης και πώς αυτές έχουν αναθεωρηθεί στους Οδηγούς Μελέτης του Προγράμματος. Πιο συγκεκριμένα, έχουν δημιουργηθεί ασκήσεις που ζητούν από τους/τις φοιτητές/τριες να παρακολουθήσουν διδακτικές δραστηριότητες της Ιατρικής και να αναγνωρίσουν διάφορες πρακτικές, που χρησιμοποιούνται στην Ιατρική Εκπαίδευση· να δημιουργήσουν και να διδάξουν με επίβλεψη προπτυχιακούς/ές φοιτητές/τριες, αλλά και πτυχιούχους· να δημιουργήσουν προγράμματα σπουδών· να αναγνωρίσουν τα στοιχεία του υφιστάμενου προγράμματος σπουδών της Ιατρικής και τον τρόπο που αυτά συμμορφώνονται με τις οδηγίες του WFME· να δημιουργήσουν εξετάσεις για φοιτητές/τριες Ιατρικής· και τέλος να αναστοχαστούν σε διάφορες διδακτικές πρακτικές που εφαρμόζουν στα περιβάλλοντα εργασίας τους. Με αυτό τον τρόπο επιτυγχάνεται διασύνδεση με πρακτική στο Πρόγραμμα.

Όλοι οι αναθεωρημένοι Οδηγοί Μελέτης υποβάλλονται στο Παράρτημα ΙΙΙ. Για διευκόλυνσή σας επισημαίνουμε τις σελίδες στις οποίες έγιναν οι αλλαγές που αναφέρονται πιο πάνω (οι αλλαγές εμφανίζονται με κόκκινο):

1. MDE600 Medical Education Theories to practice: σσ. 12, 18, 21, 24, 29, 36, 45
2. MDE620 Learning in Medicine: Infrastructure and Technologies: σσ. 11, 14, 17, 23, 26, 29, 44
3. MDE630 Principles of Assessment and assessment in the healthcare practice: σσ. 8, 15, 19, 25, 28, 31, 38, 41
4. MDE640 Advanced Clinical Education: σσ. 14, 17, 29, 32, 46
5. MDE650 Curriculum Design and Evaluation in Medicine: σσ. 8, 13, 15, 23, 29, 34, 37
6. MDE662 Cultural Competence in Medical Education: σσ. 11, 14, 23, 29

Τέλος, το Τμήμα επιθυμεί όπως επιβεβαιώσει ότι το Πρόγραμμα ως Μάστερ στην Ιατρική, και όλες οι αλλαγές που περιγράφονται πιο πάνω για την τελική πιστοποίησή του συμμορφώνονται στα νέα αναθεωρημένα κριτήρια του WFME τα οποία βρίσκονται αναρτημένα στην ιστοσελίδα του και τα οποία υπέδειξε το ίδιο το WFME.

Ευχαριστούμε πολύ τον Φορέα ΔΙ.Π.Α.Ε. για τα εποικοδομητικά σχόλια και εισηγήσεις στο πλαίσιο της πιστοποίησης του προγράμματος και δηλώνουμε στη διάθεσή σας για οποιεσδήποτε διευκρινίσεις.

Με τις ειλικρινείς μας ευχαριστίες,

Καθ. Λοΐζος Συμεού
Αντιπρύτανης Ακαδημαϊκών Υποθέσεων

Συν.: (3)

European University Cyprus

SCHOOL OF MEDICINE
EUROPEAN UNIVERSITY CYPRUS

May 31st, 2021

Dr Ruolan Wang

RE: Letter of Invitation as Visiting Faculty at European University Cyprus, School of Medicine, Distance Learning Program Medical Education

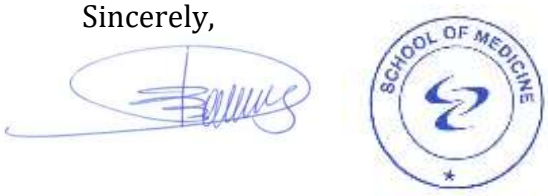
Dear Dr Wang,

We are pleased to offer you a Visiting faculty appointment in the MSc Program Medical Education. Following our initial discussions, we would be honored to include you in our dynamic team of this new and exciting MSc Program. You will be asked to deliver all the content of the Course MDE600 "Medical Education Theories to practice" as you have reviewed the content of the course and the study guide at the School of Medicine, European University Cyprus for the academic year 2021-2022 (Fall 2021). The Program is a distance-learning program and you will be coordinating the delivery of all the content of the Course MDE600.

We are thrilled to see that our initial discussion now come to fruition. When the MSc Program is officially launched, the invitation will be formalized with approval of the Department Council, School Council and Senate.

We are looking forward to a fruitful collaboration

Sincerely,



Theodoros Xanthos MD, MSc, PhD, FAcadMed, FHEA, FCP, FESC, FERC, ERT, FAcadTM
Professor Physiology & Pathophysiology
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https://scholar.google.com/citations?user=Hr6SIXgAAAAJ&hl=en

European University Cyprus

SCHOOL OF MEDICINE
EUROPEAN UNIVERSITY CYPRUS

May 31st, 2021

Associate Professor Cesar Orsini

RE: Letter of Invitation as Visiting Faculty at European University Cyprus, School of Medicine, Distance Learning Program Medical Education

Dear Professor Orsini,

We are pleased to offer you a Visiting faculty appointment in the MSc Program Medical Education. Following our initial discussions, we would be honored to include you in our dynamic team of this new and exciting MSc Program. You will be asked to deliver 4 lectures for the Courses MDE630 "Principles of Assessment and assessment in the healthcare practice" and MDE640 "Advanced Clinical Education" for Spring 2022 at the School of Medicine, European University Cyprus for the academic year 2021-2022. The Program is a distance-learning program and your lectures will be delivered on line.

We are thrilled to see that our initial discussion now come to fruition. When the MSc Program is officially launched, the invitation will be formalized with approval of the Department Council, School Council and Senate.

We are looking forward to a fruitful collaboration

Sincerely,

SCHOOL OF MEDICINE

Theodoros Xanthos MD, MSc, PhD, FAcadMed, FHEA, FCP, FESC, FERC, ERT, FAcadTM
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European University Cyprus

(**FORM: 200.1.3**)

STUDY GUIDES

«Medical Education
(18 months /90 ECTS, MSc)»
Distance Learning

June 10th, 2021

A/A	COURSE
1.	MDE600 Medical Education Theories to practice
2.	MDE610 Research Methodology in Medical Education
3.	MDE620 Learning in Medicine: Infrastructure and technologies
4	MDE630 Principles of Assessment and Assessment in the healthcare setting
5	MDE640 Advanced Clinical Education
6	MDE650 Curriculum Design and Evaluation in Medicine
7	MDE660 Leadership in Healthcare & Medical Education
8	MDE662 Cultural Competence in Medical Education
9	MDE664 Management in Medical Education & Higher Education Settings
10	MDE670 Master Thesis

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE600 - Medical Education Theories to practice

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE600 - Medical Education Theories to practice**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☒	Elective ☐	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (15%), 1 (20%)		
Assessment	Assignments	Final Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Theodoros Xanthos
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING:

INTRODUCTION

Programme Presentation

Program's purpose and objectives:

Healthcare professionals are increasingly required to have formally recognized teaching qualifications. This program is suitable for doctors and other healthcare professionals who are responsible for teaching, assessing and supporting undergraduate students and trainees, either in institutions or in the workplace. The program is designed for busy healthcare professionals, such as GPs, doctors, nurses, healthcare professionals and those with related undergraduate degrees, including pharmacy, and physical therapy.

The MSc Program aims to help students to develop their scholarship and research skills in order to effectively train healthcare professionals of the future. The program offers students an introduction to teaching, learning and assessment for effective teaching both in undergraduate and post-graduate students with the ultimate aim to improve patient safety. The MSc in Medical Education is designed for individuals who are interested in developing a critical knowledge for the effective application of medical education in local and international contexts.

The program fosters advanced skills of comprehension, interpretation, and analysis through courses that include examination of Medical Education Theories and their application into practice. It sensitizes students to the dynamic of infrastructures and learning environments (whether physical or virtual) and concentrates on how new technologies can be used to enhance effective medical education. The program can be offered completely as a taught course, where students successfully succeed in 9 courses (6 compulsory and 3 electives) or 6 compulsory courses and a Thesis

GENERAL OBJECTIVES: The program seeks to:

- broaden opportunities for qualified students for entry into higher level education studies
- to promote professional development and enhance research activity, both for those involved and for the general public
- to cultivate ethically and professionally sound research and practice in Medical education and to contribute to the development of a reflective and analytical attitude towards delivery of medical knowledge with an ultimate goal to improve patient safety
- to cultivate / develop an advanced postgraduate activity that is characterized by intellectual stimulation, is professionally compatible and useful and leads to research activity for the production of new and / or remodeling of existing knowledge, as a basis for decision making and problem solving in issues of medical education

- to broaden research and academic cooperation of all kinds with participants, scholars, educational institutions and academic staff**.**

SPECIFIC OBJECTIVES: More specifically, the program seeks to:

- provide opportunities for MSc students to study in detail topics related to advanced academic studies and the systematic research in the field of Medical Education
- advance MSc students' familiarity with the theories of the area of their research within Education Sciences, epistemological theories in the field of Medical Education, as well as research methods, aiming to further delve into their area of interest viewing it in a broader perspective
- to facilitate MSc those students, who choose the Thesis option, in conducting individual and independent research and producing an academic dissertation at a highly specialized level within the boundaries of their field
- help MSc students develop skills in understanding and using qualitative and quantitative methods and measurements, and using multivariate statistics to draw conclusions and make decisions based on relevant research data
- help MSc students develop the knowledge and skills necessary to use methods and theories of their area in an independent and critical manner, producing new knowledge in Medical Education
- prepare MSc students for new knowledge production or remodeling of existing knowledge, creating the basis for the development of pedagogical / educational theories through applied research
- enable graduates to get a deeper insight into today's complex medical educational environment and apply the knowledge gained to emerge as career leaders of their choice
- Develop the ability to critique and analyze a broad range of materials and communicate ideas and theories effectively.
- Develop advanced written and verbal skills through the composition of thoroughly researched term papers, surveys based on an analysis of previously collected data
- Acquire the ability to work within a team and develop presentation skills.

Presentation of the Course through the Study Guide

Short description & objectives: The course purpose is to familiarize the students with medical education theories. The course will also help in the differentiation between concepts, principles, and theories. The word “theory” is quite commonly used to represent the knowledge or cognitive component in our day-to-day work. The various learning theories in the educational field indicate that it is more like a set of principles/ideas that provide an explanation of working of a concept or basis of practical happenings or connections between various principles in a model or working together. Several theories have been proposed for learning. There are number of concepts in learning which are essential components for an understanding of these theories. Upon successful completion of this course students should be able:

- To describe the differences between concepts, principles and theories
- To identify and explain Behaviourism
- To elucidate Cognitivism
- To identify and explain Constructivism
- To distinguish the characteristics of Sociocultural theory
- To identify and explain Critical Theory and how to change society to make it equal for all by encouraging participation of all learners
- To analyze Humanism as a key determinant one's own growth as a doctor and human being.
- To critically analyze the similarities as well as differences between these theories
- To understand how medical education theories represent learning in context with stage of learner and situations

Recommended student work time

Approximately 5 hours (including the study of the Guide)

TITLE:

How people learn

(1st Week)

Summary .
People have been trying to understand learning for over 2000 years. Learning theorists have carried out a debate on how people learn that began at least as far back as the Greek philosophers. To date several learning theories have been developed, some with significant overlapping and conflicting concepts. This introductory week will expose you to how and why people learn. Some of the Major Medical Education Theories will be simply referred to, but not analyzed in detail.

Introductory Remarks
Learning is not a one-dimension process. It takes place in many different ways and there are a wide variety of factors that can influence how and what people learn. While people often focus on the observable and measurable ways that learning takes place, it is also important to remember that we cannot always immediately detect what has been learned. People are capable of learning things that are not immediately observable. On the other hand, a learning theory is in reality a mixture of underlying theories that attempt to explain how learners learn. As there is no clear understanding of how people learn, educational theories, stemming from different philosophical, epistemological, ontological and sociological backgrounds, attempt to cover this knowledge gap. Each educational theory explains in a unique, but not necessarily in a different way, the learning process. The need for the elaboration of educational theories arose from the lack of a clear definition of learning. If learning cannot be universally defined, then clearly there is no way for a teacher to predict if learning can occur for any student. This is the main incentive that gave birth to all of the educational theories. It is wise to understand these theories as different lenses helping us to understand how learning occurs. As a result, each educational theory has its benefits and even if every educational theory has been criticized, in reality these theories help us construct a powerful environment to improve our students' learning potential.

Aims/Objectives

- To obtain a general overview of why and how people learn
- To provide a general overview of the basic learning theories
- Understand the role of the medical instructor

Learning Outcomes by the end of this session students will be able to:

- Discuss the central debates and major concepts in the history of learning theory
- Narrate the main themes of the course and key ideas about the learning process and teacher assisted learning
- Discuss the relationship between theory and practice

Key Words

Motivation	Medical Educator/Medical Teacher	Learning Theories	Motivation	Culture and Society	Individualism

Annotated Bibliography

Basic Sources/Material

1. Linda-Darling Hammond LD, Austin K, Orcutt S, &Rosso J (2001). How people learn: Introduction to learning theories Stanford University School of Education (pdf provided)
2. Svinicki MD (1999). New Directions in Learning and Motivation. New Directions for teaching and learning 80, 5-27 (pdf provided)
3. Dun L. Theories of Learning. www.brookes.ac.uk/services/ocsld/resources/briefing_papers (pdf provided)
4. Torre DM, Daley B, Sebastian JL, Elnicki M (2006). Overview of Current Learning Theories for Medical Educators. American Journal of Medicine 119, 903-7 (pdf provided).

Supplementary Sources/Material

1. Merriam S, Caffarella R (1999). Learning in Adulthood. San Francisco, CA: Jossey-Bass, Inc.
2. Bransford, J.D., Brown, A.L., & Cocking, R.R. (1999). How people learn: Brain, mind, experience, and school. Washington, D.C.: National Academy Press.
3. Knowles, M.S. (1990). The Adult Learner: A Neglected Species 4th edition, Houston: Gulf Publishing Company, Book Division.
4. Wakefield, J.F. (1996). Educational Psychology: Learning to be a Problem-Solver. Boston: Houghton Mifflin.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 1.1 After studying the recommended and possible additional references post in the forum one post of 500 words with references, using the referencing system, provided in the guide for the Thesis submission. The word count does not include referencing. Describe a positive or negative experience either as a teacher or as a learner which had a significant impact on your career as a healthcare professional. Describe the teaching and learning meanings in the concept of your experience and suggest how this could have ended in a different way.

Exercise 1.2 Comment on at least ONE of your classmates' posts. Your comment should be no less than 100 words excluding references.

Recommended number of work hours for the student 15 hours

TITLE:

Behaviourism

(2nd Week)

Summary

The behaviourism theory was imbedded in the educational theories through the translational experiments performed by Pavlov. Classical and operant conditioning are well associated with the theory as well as positive and negative reinforcement. Behaviourism defines learning as a change in the behaviour with the instructor providing the stimulus for the change. Behaviourism has received significant critique, but its roots still exist in the measurable learning outcomes, the favourable learning spaces and the competency based curricula, just to name a few.

Introductory Remarks

Behaviorism dates back to Descartes, who introduced the idea of a stimulus and called the person a machine dependent on external events whose soul was the ghost in the machine. Behaviorism takes this idea to another level. Although most theories operate to some degree on the assumption that humans have some sort of free will and are moral thinking entities, behaviorism refuses to acknowledge the internal workings of persons. In the mind of the behaviorist, persons are nothing more than simple mediators between behavior and the environment. In the field of psychology, there are a good number of personalities who can be perceived as major contributors to the development of the theory of behaviourism. One of them is the Russian psychologist known as Pavlov (1849-1936). Pavlov is best known for his contribution to the theory of behaviourism mostly through his work in classical conditioning or stimulus substitution. Another major contributor to the development of the theory of behaviourism is Thorndike (1874-1949). His major contribution to behaviourism is his theory of 'connectionism', which states that learning involves the formation of a connection between stimulus and response. Thorndike developed three laws based on his stimulus-response hypothesis. The first of these laws is the 'law of effect' which states that the connection between stimulus and response is strengthened when it is positively rewarded and weakened when negatively rewarded. The second law is the 'law of exercise'. Central to this law is the premise that the more the stimulus response (S-R) bond is practiced, the stronger it becomes. The third and last law developed by Thorndike is the ‘law of readiness’ which holds that due to the structure of the nervous system, some conduction units, in given situations are more predisposed to conduct than others. Probably the most influential of all the founding fathers of behaviourism is Watson (1878-1958). Watson studied the adjustment of organisms to

their environments, more specifically the particular stimuli leading organisms to make their responses. Influenced by the ideas of Pavlov, Watson held the view that behaviour is established through stimuli-response associations through conditioning. An account of the development of behaviourism cannot be complete without mentioning the contributions of Skinner, who introduced the idea of operant conditioning (1904-1990). The term ‘operant' means how behaviour operates on the environment. Operant conditioning operates on the principle that behaviour may result either in reinforcement, which increases the likelihood of that behaviour to be repeated or punishment, which decreases the likelihood of the same behaviour to be repeated in future. Skinner was also the father of positive and negative reinforcement. Despite the fact that behaviourism has received severe criticism, there are several echoes still observable in our everyday teaching life: The learning objectives (a behavioural objective states learning objectives in "specified, quantifiable, terminal behaviours"), the favorable teaching environment, positive reinforcement of behaviours and finally competency based curricula in medical schools are a few examples.

Aims/Objectives

- Describe the major contributions of Pavlov, Thorndike, Sknner, and Watson in the development of behaviourism
- Understand the limitations of behaviourism as a learning theory
- Discuss the effects behaviourism still exerts in medical education.

Learning Outcomes by the end of this session students will be able to:

- Discuss how behavioursim pioneered in Education and its limitations
- Identify the elements of behaviourism, still in existence in medical education

Key Words

Classical conditioning	Operant Conditioning	Law of behaviourism	Positive Reinforcement	Stimulus-Response	Competency based medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Boyd VA, Whitehead CR, Thille P, Ginsburg S, Brydges R, Kuper A. (2018).Competency-based medical education: the discourse of infallibility. Medical Education 52,:45-57 (pdf provided).

2. Daker JR (2005). The Hegemonic Behaviorist Cycle. International Journal of Technology and Design,15:111–126 (pdf provided).
3. Gibboney RA (2006). Intelligence by Design: Thorndike Versus Dewey. Phi Delta Kappan, 88: 170-2 (pdf provided).
4. Morcke AM, Dornan T, Eika B (2013). Outcome (competency) based education: an exploration of its origins, theoretical basis, and empirical evidence. Advances in Health Sciences Education Theory and Practice,18:851-63 (pdf provided).
5. Rostami K, Khadjooi K (2010). The implications of Behaviorism and Humanism theories in medical education. Gastroenterology and Hepatology from Bed to Bench, 3:65-70 (pdf provided).
6. Skinner BF (1984). The operational analysis of psychological terms. The behavioural and brain sciences, 7:547-81 (pdf provided).
7. Talbot M (2004). Monkey see, monkey do: a critique of the competency model in graduate medical education. Medical Education, 8:587-92 (pdf provided).

- **Supplementary Sources/Material**

1. Dahlbom, B. (1984). Skinner, selection, and self-control. Behavioral and Brain Sciences, 7: 484-486.
2. Rescorla, RA. (1988). Pavlovlian conditioning: It's not what you think it is. American Psychologist, 43:151-160.
3. Seligman, MEP. (1970). On the generality of the laws of learning.Psychological Review, 77: 406-418.
4. Skinner, BF (1984). Selection by consequences. Behavioral and Brain Sciences, 7: 477-481.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 2.1 Watch the recording delivered by one instructor in an Anatomy lab (link to be provided) and identify all the elements of behaviorism the instructor is using as educational tools. The word limit is 500 words excluding references**.**

Recommended number of work hours for the student 15 hours

TITLE:

Cognitivism-The theorists

(3rd Week)

Summary

Cognitivism is not a unified theory. It is a mixture of theorists who developed their theories in response to the behaviourism, which was the predominant theory of learning but failed to explain the cognitive acquisition of knowledge. The reflection stems from the cognitivists which are presented here along with the shift from the instructor to the student.

Introductory Remarks

Cognitivism is not based on the works of a single theorist or a unified group of theorists. Rather, it is informed by a number of theorists' contributions and is quite multifaceted. The following theorists and accompanying theories have contributed to the continuous growth of cognitive theories: Piaget's theory of individual cognitive development, Vygotsky's theory of social cognitive growth or zone of proximal development, Festinger's cognitive dissonance theory, Spiro's cognitive flexibility theory, Sweller's cognitive load theory, Bruner's cognitive constructivist learning theory, and Tolman's theory of sign learning.

The locus of learning in the cognitivist orientation is the learners' internal environment and cognitive structures. In this framework, the learner uses cognitive tools, such as insight, information processing, perceptions, and memory, to facilitate learning by assigning meaning to events. The cognitivist approach is characterized by the creation of meaningful learning through which learners seek to understand the structure of knowledge. In contrast to behaviorism, the locus of learning in the cognitivist model is on the individual learner and on his or her thought processes rather than on the external environment. The teacher's role in this framework is to facilitate cognitive processing by helping the learner "learn how to learn." As such, the goal of the cognitivist approach is to develop the learner's capacity and skills for more effective self-directed learning. The cognitivist orientation facilitates the acquisition of knowledge and the development of learning skills that are applicable in other learning situations regardless of the topic or context. Within the cognitivist learning orientation, Ausubel believes that individuals think and learn with concepts. He defines concepts as "objects, events, situations, or properties that possess common criteria/attributes and that these are designated by some sign or symbol." In Ausubel's view, meaningful learning results from relating new knowledge to what is already known. This philosophical approach advocates the creation of learning strategies that link concepts together in unique ways so that the learner understands the structure of knowledge.

Aims/Objectives
To describe the main concepts of the theorists and to extrapolate their theories in Medical Education

Learning Outcomes By the end of this session students will be able to

- Describe Piaget's theory of individual cognition
- Describe the principles of the zone of proximal development
- Compare the cognitive dissonance theory to cognitive flexibility theory
- Discuss the principles of cognitive load theory

Key Words

Individual cognition	Zone of proximal development	Cognitive Dissonance	Cognitive flexibility	Cognitive load	Concepts

Annotated Bibliography

- **Basic Sources/Material**

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3. Harmon-Jones, E., & Mills, J. (2019). An introduction to cognitive dissonance theory and an overview of current perspectives on the theory. In E. Harmon-Jones (Ed.), Cognitive dissonance: Reexamining a pivotal theory in psychology (p. 3–24). American Psychological Association. (pdf provided)
4. Lefa B. (2014). The Piaget Theory of Cognitive Development: Educational Implications, Educational Psychology, 1:9 (pdf provided)
5. Mancinetti M, Guttormsenb S, Berendonk C. (2018). Cognitive load in internal medicine: What every clinical teacher should know about cognitive load theory. European Journal of Internal Medicine https://doi.org/10.1016/j.ejim.2018.08.013 (pdf provided)
6. Metin I, Camgoz SM. (2011). The Advances in the History of Cognitive Dissonance Theory. International Journal of Humanities and Social Science, 1:131-6 (pdf provided)
7. Takaya K. (2008). Jerome Bruner's Theory of Education: From Early Bruner to Later Bruner. Interchange, 39: 1-19 (pdf provided)
8. Yilmaz K. (2011) The Cognitive Perspective on Learning: Its Theoretical

Underpinnings and Implications for Classroom Practices, The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 84:5, 204-212 (pdf provided)

- **Supplementary Sources/Material**

1. Fischer KW (1980). A Theory of Cognitive Development: The Control and Construction of Hierarchies of Needs. Psychological Review, 87:477-53 (pdf provided)
2. Toassa G. (2014). Creating a materialistic psychology – sources and influence of Spinoza in Vygotsky's works. International Journal of Liberal Arts and Social Science, 2: 83-94 (pdf provided)

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 3.1 Watch the following videos.
https://www.youtube.com/watch?v=_Sy8n5DRa7A&feature=emb_logo&ab_channel=SlowMedia

https://www.youtube.com/watch?v=IhcgYgx7aAA&ab_channel=Sprouts

https://www.youtube.com/watch?v=8I2hrSRbmHE&ab_channel=Sprouts

Consider how Bruner explains the meaning of discovery learning and how Ausubel discusses the way that new learning is assimilated and incorporated with existing information. Then watch Piaget's theory of developmental cognition and Vygotsky' social development theory. Reflect on how you learn and retain information using this approach. Write a small paragraph of 200 words (excluding references) and post it on the forum. Remember to meaningfully comment on one on your classmates' posts.

Exercise 3.2 Create a concept map of the theories comprising Cognitivism. And post it as a Jpeg on the forum.

Recommended number of work hours for the student 20 hours

TITLE:

Teaching Methods Based on Some Principles of Cognitive Learning Theory

(4th Week)

Summary

Cognitive apprenticeship, reciprocal teaching, anchored instruction, inquiry learning, discovery learning, and problem-based learning are the most well described teaching methods associated with cognitivism. All of them have been used and are still used in some extend in Medical Education. Knowing the theoretical underpinnings and phases of each method makes cognitivism more relevant to the everyday practice of a Medical Educator.

Introductory Remarks

Cognitive apprenticeship, reciprocal teaching, anchored instruction, inquiry learning, discovery learning, and problem-based learning are the most distinctive teaching methods based on cognitivism. Given that cognitivism is not a unified theory, each teaching method has similarities but also significant differences from the other. Cognitive apprenticeship is a method of helping students grasp concepts and procedures under the guidance of an expert such as the teacher. Its basic principles lie in the works of Vygotsky with the following phases of instruction: Modeling, Coaching, Articulation, Reflection & Exploration. Reciprocal teaching is based on information processing theory, a branch of cognitive learning theory. it as an instructional activity in the form of a dialogue happening between teachers and students. The teacher incorporates four strategies into the dialogue by asking students to employ cognitive techniques of summarizing, question generating, clarifying, and predicting. Reciprocal teaching is composed of modeling, coaching, scaffolding, and fading to achieve instructional objectives. This method aims at promoting the effort between the teacher and students or among peers of students to make sense of the instructional materials; peer-teaching stems from the processing theory. Anchored instruction refers to designing and implementing instruction around anchors (i.e., cases, stories, or situations) that involve some kinds of case-study or problem situation. In reality, anchored instruction is associated with technology. The Cognition and Technology Group at Vanderbilt (1993) explains how the anchoring instruction works: "*The design of these anchors was quite different from the design of videos that were typically used in education. . our goal was to create interesting, realistic contexts that encouraged the active construction of knowledge by learners. Our anchors were stories rather than lectures and were designed to be explored by students and teachers*." Inquiry learning is based Piaget's theory of cognitive development and resembles the scientific inquiry method. The primary goal is to help students develop their higher-order thinking skills by engaging them in a process of either investigating an issue or formulating and testing a hypothesis in order to find solutions to a problem. Discovery

learning is defined as “an approach to instruction through which students interact with their environment by exploring and manipulating objects, wrestling with questions and controversies, or performing experiments”. This method encourages students to discover principles and important relationships by engaging them in such activities as asking questions, formulating hypothesis, doing experiments and research, and investigating a phenomenon. Problem-based learning involves presenting students with an ill-structured, open-ended, authentic, or real-life problem with many possible correct solutions and asking them to find answers to that authentic problem. As opposed to traditional instruction that teaches facts and skills first and then introduces the problem, this method introduces the problem at the very beginning of instruction on the basis of what students already know (or students’ existing knowledge) and teaches facts and skills in a relevant context.

Aims/Objectives

The aim of the present module is to provide several teaching techniques based on the philosophical and theoretical notions of cognitivism.

Learning Outcomes By the end of this session students will be able to

- Apply cognitive apprenticeship
- Compare and contrast anchored teaching to Problem based teaching
- Discuss inquiry learning

Key Words

Cognitive apprenticeship	Anchored instruction	Inquiry learning	Problem-based learning	Discovery Learning	Student-centered

Annotated Bibliography

- **Basic Sources/Material**

1. Austin AE (2014). Cognitive apprenticeship theory and its implications for doctoral education: a case example from a doctoral program in higher and adult education. International Journal for Academic Development, 3, 173-183 (pdf provided)
2. Druckman D, Ebner N (2017). Discovery Learning in Management Education: Design and Case Analysis Journal of Management Education 0, 1-28 (pdf provided)
3. Ellaway RH, Kehoe A, Illing J (2020). Critical Realism and Realist Inquiry in Medical Education, 95:984-8 (pdf provided)

4. Feletti G (2006). Inquiry Based And Problem Based Learning: How Similar are these Approaches to Nursing and Medical Education? Higher Education Research & Development, 12:143-56 (pdf provided).
5. LeGrand Buandt B, Famer,JA, Buckmaster A (1993). Cognitive Apprenticeship Approach to Helping Adults Learn. New Directions of Adult and Continuing Education, 59: 69-77 (pdf provided)
6. Neville AJ (2009), Problem-Based Learning and Medical Education Forty Years On. Medical Principles and Practice, 18:1-9 (pdf provided)
7. Stalmeijer RE, Dolmans DHJM, Wolfhagen IHAP, Scherpbier JJA (2009). Cognitive apprenticeship in clinical practice: can it stimulate learning in the opinion of students? Advances in Health Science Education, 14:535–46 (pdf provided)
8. Love MS (2004). Multimodality of learning through anchored instruction. Journal of Adolescent & Adult Literacy, 48:300-10 (pdf provided)

- **Supplementary Sources/Material**

Assessment 1
This is a graded assignment (30% of the total grade of Assignments)

Design any lesson plan on any subject related to your professional experience. Present the lesson plan using 2 of the teaching methodologies of Cognitivism. Provide the rationale of the plan in a scholarly manner (using appropriate references from the international literature).
The word count of the assignment should be between 3.500-4.000 words, excluding references. Use the referencing format as on the Thesis document.
Remember to include the lesson plan in 2 different ways. The lesson plan should be the same for both of the teaching methodologies

Recommended number of work hours for the student 20 hours

TITLE:
The echoes of Cognitivism: Reflection

(5th Week)

Summary

Reflection is a cognitive process in which new information and experiences are integrated into existing knowledge structures and mental models, resulting in meaningful learning. Reflection-on-action promotes professional development and lifelong learning. Reflection-in-action involves being mindful, self-monitoring, dealing with the unexpected, and quickly thinking on one's feet to solve problems. Reflection is a skill that can be taught and developed in medical education.

Introductory Remarks

The use of reflection stems from cognitivism. However, all recent educational theories have embraced reflection as a means of professional improvement. In Healthcare education, reflection at the level of the instructor, the faculty and the students become increasingly adopted. The use of reflection in medical education was first championed by Donald Schon in the 1980s, but only recently has it gained wide support from educators, medical schools, and professional organizations. The Latin origins of the word "reflection" refer to "the act of bending back." Indeed, in one of its contemporary usages, reflection connotes the image we see when looking in a mirror, which is the result of light bending back toward us. In the context of mental cognition, reflection can be considered the process that occurs when our thoughts bend backward. Merriam-Webster defines reflection as "a thought, idea, or opinion formed or a remark made as a result of meditation."

A variety of definitions of reflection, specifically as it applies to education, have been proposed. While similar in many regards, multiple definitions are worth considering to fully appreciate the meaning of reflection in education. Sander's definition articulates the spectrum of reflection that can occur—before, during, and after an experience. For practical reasons, the focus in medical education is most often reflection-on-action. That is to say, reflective exercises often focus on the thoughts the learner has about an experience that has already concluded. However, a desired outcome of teaching reflection is to promote active reflection closer to, if not exactly at, the moment an experience is occurring. The related concept of mindful practice was introduced in 1999 by Epstein. He described the clinician who is self-aware, attuned to the feelings of his patients and coworkers, and appreciative of how his actions affect others. The mindful practitioner is able to reflect-in-action: he has the mental models in place to deal with the unexpected, rapidly integrate new information with old, and make difficult decisions on the spot.

A notable body of literature supporting the value of reflection in medical education is rapidly emerging. These collective works are beginning to provide evidence beyond just

educational theory and expert opinion. Research suggests that education in reflection can improve clinical reasoning and diagnostic accuracy in complex cases. Reflection has been linked to improved student performance, including interactions with standardized patients. It has also been suggested that the use of reflection improves intangible student attributes such as empathy, humanism, and professionalism.

Aims/Objectives

To understand the various different types of reflection, the different tools used and the fact that reflection should occur at the Educator level, at the student level (either undergraduate or post-graduate) and at a practitioner level.

Learning Outcomes

- To discuss the benefits of self-reflection
- To describe the reflective tools
- To analyze the various levels of reflection

Key Words

Gibb's Cycle	Kolb's reflective cycle	de Bono hats	Professionalism	Humanism	Empathy

Annotated Bibliography

- **Basic Sources/Material**

1. Bergsteiner H, Avery GC (2014). The twin-cycle experiential learning model: reconceptualising Kolb's theory. Studies in Continuing Education, 36:257-74 (pdf provided)
2. Hays R, Gay S (2011). Reflection or 'pre-reflection': what are we actually measuring in reflective practice? Medical Education, 45:116–118 (pdf provided)
3. Husebo SE, O'Regan S, Nestel D (2015). Reflective Practice and Its Role in Simulation. Clinical Simulation in Nursing, 11: 368-75 (pdf provided)
4. Kenny LJ (2003). Using Edward de Bono's six hats game to aid critical thinking and reflection in palliative care. International Journal of Palliative Nursing, 9:105-12 (pdf provided)
5. McAlpine L, Weston C, Berthiaume D, Fairbank-Roch G, Owen M (2004). Reflection on Teaching: Types and Goals of Reflection, Educational Research and Evaluation: An International Journal on Theory and Practice, 10: 337-63 (pdf provided)
6. Pammer, V., Krogstie, B. Prilla, M. (2017) 'Let's talk about reflection at work', International Journal of Technology and Enhanced Learning, 9:151–68 (pdf provided)

7. Plack MM, Greenberg L (2005). The Reflective Practitioner: Reaching for Excellence in Practice. Pediatrics;116:1546-52 (pdf provided)
8. Wald HS, Reis SPR (2010). Beyond the Margins: Reflective Writing and Development of Reflective Capacity in Medical Education, Journal of General Internal Medicine, 25:746-9 (pdf provided)

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 5 (Reflective Exercise graded assignment 20% of the total ongoing assessment grade) Using any of the reflective tools (Gibb's cycle, Kolb's reflective cycle, de Bono Hats) describe any event in your professional life as a healthcare professional, which improved your professionalism, empathy or patient safety. Your word count should not exceed 1500 words, excluding references.

Recommended number of work hours for the student 17 hours

TITLE:

The enabler: Humanism

(6th Week)

Summary

Within the humanist framework, learning is viewed as a personal act necessary to achieve the learner's full potential. The goal of this approach is for the learner to become autonomous and self-directed. Humanism is mot a learning theory per se, according to the definition of a way people learn, but more an enabler which makes all learning theories student centered and aims at human emotional and cognitive growth

Introductory Remarks

Human learning theory is concerned with personal growth and the full development of each human's potential not on just an intellectual level, but also on an emotional, psychological, creative, social, physical, and even spiritual level. The goal is to facilitate the development of knowledgeable human beings who know and are able to nurture themselves, other humans, and their environments; to instill a joy of learning; to promote the discovery of each student's passions and special talents; and to teach the knowledge and skills necessary for students to be good decision makers. Human learning theory is also based on the premise that all humans have a natural tendency to grow, to learn, and to develop fully. Human educators strive to facilitate learning by creating a structured environment with differentiated instruction where students have the chance to explore topics of interest to them, learn in ways that are more natural (active learning, social interaction, real life problem solving and activities), and learn at their own pace. Not always an easy task! That is why creative, intelligent, caring teachers are so important. Anybody off the street can open a teacher's manual, assign activities, and grade students.

The locus of learning within a humanist orientation relates to the needs of the person, with the ultimate need being that of self-actualization and self-fulfillment. In essence, the learner's motivation to learn is fueled by a desire to become all that he or she is capable of becoming. Learning that stems from this approach has several characteristic features, including personal involvement of the learner, learning that is self-initiated and that comes from within, and learning that is evaluated by the learner. All of these features culminate in the development of an autonomous learner. The role of the teacher in this framework is to facilitate the growth and development of the overall person. Self-directed learning is one of the most important and well-known educational principles of the humanist orientation. Self-directed learning also can be viewed as a process, in which learners plan, carry out, and evaluate their own learning experiences. By means of this approach, the learner ultimately develops self-direction as a personal attribute.

Given the current climate of technology-based and computer-assisted instruction, self-directed learning is becoming a particularly important and appropriate learning orientation. Well-designed technology-based learning experiences can encourage

learners to assume responsibility for their own education at the same time they are developing and applying the skills necessary for managing and assessing their own learning. In addition to computer-assisted simulations, self-directed learning methodologies may be manifest in problem-based learning scenarios, drill and practice exercises with immediate feedback, and role-playing exercises that emphasize self-directedness and self-evaluation; the latter may be particularly important in helping learners to understand their specific role as part of the health care team.

Aims/Objectives

Humanism is perceived as an enabler for all learning theories which have been analyzed so far and will be analyzed further on. The aim of the module is to introduce the basic concepts of humanism as a catalyst for all theories.

Learning Outcomes

- To discuss how humanism can be associated with any learning theory
- To describe the basic principles of humanism
- Define the basic concepts of humanism
- Discuss how the Maslow pyramid of needs can be applied in their professional lives

Key Words

Empathy	Cognitive Growth	Psychological Growth	Creative Growth	Social Growth	Maslow

Annotated Bibliography

- **Basic Sources/Material**

1. Barnová S, Krásna S (2018). Digital Humanism in Education – Meaningful Use of Digital Technologies. 2nd International EMI Entrepreneurship & Social Sciences Congress, 09-11 November 2018, Cappadocia (pdf provided)
2. Cohen LG, Sherif YA (2015). Twelve tips on teaching and learning humanism in medical education. Medical Teacher, 36:680-4 (pdf provided).
3. Freitas FA, Leonard LJ (2011). Maslow's hierarchy of needs and student academic success. Teaching and Learning in Nursing, 6:9-13 (pdf provided)
4. Goldberg JL (2008). Humanism or Professionalism? The White Coat Ceremony and Medical Education. Academic Medicine, 83:715- 22 (pdf provided).
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6. Lyon L, Itaya LE, Hoover T, Booth MT, Nadershahi N (2017). Humanism in Dental Education: A Comparison of Theory, Intention, and Stakeholder Perceptions at a

North American Dental School Journal of Dental Education, 81:929-936 (pdf provided).
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- **Supplementary Sources/Material**

1. McLeod, S. A. (2018, May 21). Maslow's hierarchy of needs. Retrieved from https://www.simplypsychology.org/maslow.html
2. Zucca-Scott, Laura (2010). Know Thyself: The Importance of Humanism in Education. International Education, Vol. 40 Issue (1). Retrieved from: http://trace.tennessee.edu/internationaleducation/vol40/iss1/4

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 6.1
Watch the following YouTube videos
https://www.youtube.com/watch?v=dmtmxYbDhKA&feature=emb_logo&ab_channel=KellyO%27Dowd

https://www.youtube.com/watch?v=Rl9AHJ1O8b4&ab_channel=PHILO-notes
These videos are for your personal development and no assignment is associated with these

Exercise 6.2
Watch the following YouTube video
https://www.youtube.com/watch?v=cVVJDN9ScT8&ab_channel=TomorrowsMed
Reflect on a recent teaching activity, you delivered in your own setting and define how the humanistic values you have been exposed to this week might have improved your approach to teaching. Word limit 800 words excluding references.

Recommended number of work hours for the student 16 hours

TITLE:

Social Cognitive Learning Theory

(7th Week)

Summary.
Observation and modeling are key characteristics of the social learning orientation. Within the context of the social learning theory, learners assimilate new information and assume new roles that require role modeling, behavioral rehearsal, and attending to observed behaviors.

Introductory Remarks

Within the social learning framework, learning is embedded in the interactions with, and observations of others in a social context. For learners to acquire new knowledge or skills, they must imitate and reinforce the observed behavior by rehearsing it. As opposed to a strict behaviorist approach, social learning theory incorporates a cognitive component that is represented by the idea that learning may occur by observation alone, without the need for rehearsal and imitation of the observed act. The social learning construct hypothesizes that learners acquire a cognitive representation of a modeled or observed experience, form and store an image of that modeled behavior, and retrieve that image when the learner is motivated to act. In this framework, the learning process is viewed as an interaction with, and observation of, others in a social context. The locus of learning in the social model is on the interaction between the person, the learning environment, and the desired behavior. Based on social learning theory, the teacher is responsible for modeling new roles, guiding behaviors, and providing learners with opportunities to practice these new roles and behaviors.

Common applications of social learning theory to medical education include role modeling/mentoring, collaborative/ cooperative learning, and teaching with case studies. The process of role modeling incorporates many of the characteristic features of social learning. For example, learners may observe the key characteristics of a master teacher (how an excellent bedside clinician listens to the heart to identify a particular murmur) and use these observations to create a memorable model of the desired behavior (remember what the teacher did and how he or she did it). The learner must then be able to reproduce the desired behavior (listen to another patient using the same technique as the master teacher) and ultimately receive feedback on his or her performance (requires observation and reinforcement of correct behaviors). In many respects, role modeling has long been the backbone of teaching clinical medicine to students and house officers. Physicians- in-training learn to perform specific tasks in a certain way by emulating their teachers who are supervising hospital ward teams or precepting in the outpatient clinic. Physicians have always learned in the social context by observing each other's techniques and behaviors. The unique aspects of social learning theory combine role modeling behavior with cognitive learning to deepen the learner's understanding of how, why, and for what purpose

Aims/Objectives.

To elucidate the theoretical concepts of the social cognitive theory

Learning Outcomes By the end of this session students will learn how to

- Discuss Collaborative/Collective Teaching
- Describe Role modeling and mentoring
- Analyze how the social context affects learning

Key Words

Role modeling	Role Mentoring	Collaborative Teaching	Collective Teaching	Case Studies	Social Context

Annotated Bibliography

- **Basic Sources/Material**

1. Bandura, A. (1989). Human agency in social cognitive theory. American Psychologist, 44:1175-84 (pdf provided)

2. Bandura, A. (1991).Social cognitive theory of Self regulation. Organizational behaviour and Human Decision Processes, 50:248-87 (pdf provided)

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4. Martin, J. (2004). Self-Regulated Learning, Social Cognitive Theory, and Agency. Educational Psychologist, 39:135-45 (pdf provided).

5. Yardley, S., Teunissen, P. W., Dornan, T. (2012). Experiential learning: Transforming theory into practice. Medical Teacher, 34:161-44.

- **Supplementary Sources/Material**

1. Schunk, D. H. (2012). Social cognitive theory. In K. R. Harris, S. Graham, T. Urdan, C. B. McCormick, G. M. Sinatra, & J. Sweller (Eds.), APA handbooks in psychology®. APA educational psychology handbook, Vol. 1. Theories, constructs, and critical issues (p. 101–123). American Psychological Association

2. Miller NE, Dollard JC (1941). Social Learning and Imitation. New Haven, CT: Yale University Press

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 7.1

Watch the following videos

https://www.youtube.com/watch?v=lqScOIrHx2A&ab_channel=suuzhinglee

https://www.youtube.com/watch?v=_yTxm1KEGeE&ab_channel=ktheuer
Create a power point presentation of no more than 8-10 slides summarizing the basics of the learning theory. In your slide set dedicate one to three slides to a role model who affected your professional life.

Exercise 7.2

Comment on at least one of your classmates' presentations and compare and contrast your own example of a role model to the one of your classmates.

Recommended number of work hours for the student 20 hours

TITLE:

Learning Styles

(8th Week)

Summary

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Rather than an educational theory, some researchers view learning styles as more of a personality test. Others, however, discourage using the learning styles theory in any sense because they view it as detrimental. The human brain is complex, and neuroscientists still have plenty to discover about what an ideal learning environment looks like.

Introductory Remarks

Learning styles is not a learning theory, by definition. Learning theorists believe that everyone has their own learning style – a way of taking on board information that is unique to each individual. Honey and Mumford developed their own 'learning styles': activist, reflector, theorist and pragmatist. They explained how individuals process new information; for example, how the information is learnt and retained. The four styles are summarised below:

Activists learn best by being creatively involved; they like to immerse themselves in new experiences and enjoy being thrown in at the deep end. They learn by doing rather than reading or listening, are said to be open-minded, and are receptive to stimulations, case studies and role modelling.

Theorists like to consider problems. They strive to understand concepts and integrate them into their thinking. They learn through logic and facts via lectures and reading, seeking to understand the theory behind and reason for what they observe.

Reflectors learn best by standing back, observing and reflecting upon what they see and experience. Reflective writing and journals are likely to help them learn. They learn best by watching, thinking and talking things through rather than participating.

Pragmatists like to try out new ideas and engage in problem solving. They learn by applying things to practice, testing and experimenting to see if they work. They are receptive to role modelling and like to 'get things done'.

Critics of learning styles argue that the claims made about learning styles are exaggerated and possibly too simplistic – that individuals draw on more than one learning style when processing information and that no theoretical framework exists beyond these styles. While there's plenty of support for this theory among teachers who find it helpful, research surrounding learning styles is sparse and sometimes critical. It's true that many students have a preference for one of the four learning styles. As of yet, however, no link has been found between a preferred learning style and academic achievement

Aims/Objectives
To present one aspect of learning styles among many, to summarize the findings and present the critique of the concept

Learning Outcomes By the end of this session student will learn how to

- Describe the various learning styles
- Critically understand the limitations of the learning styles

Key Words

Activist	Theorist	Reflector	Pragmatist	Concept	VARK model

Annotated Bibliography

- **Basic Sources/Material**

1. An D, Carr M. (2017). Learning styles theory fails to explain learning and achievement: Recommendations for alternative approaches. Personality and Individual Differences, 116, 410–416 (pdf provided)
2. Curry L (1983). An organization of learning styles, theory and constructs. Presented at American Educational Research Association Annual Meeting Montreal; Canada (pdf provided).
3. Furey W (2020).The stubborn myth "learning styles". Education Next, 20:8-12
4. Scott, C (2010). The enduring appeal of `learning styles' . In: Australian Journal of Education, 54:5-17; Proceeding Australian Council for Educational Research

- **Supplementary Sources/Material**

Weekly Group Assignment This counts for 20% of your total assignment grade
Exercise 8
This will be a graded assignment. You will be divided into groups and you will submit one paper as a group. One person will take the lead and create a teaching experience for the rest of the group. The person taking the lead will organize a teaching session with the other members of the group. The person delivering the material will be responsible for the creation of the teaching material and recording of the activity. The people participating in the group will write a collaborative reflective assignment on whether their different learning styles have been adequately addressed. Word count 4000 words excluding references.

Recommended number of work hours for the student 20 hours

TITLE:

Theoretical approach in constructivism

(9th Week)

Summary

Constructivism is one of the predominant theories in medical education. The Theory is not unified, and it consists of three distinctive categories, (1) sociological, (2) psychological, and (3) radical constructivism. The main assumption of constructivism is that knowledge is individual and can only be constructed socially and cannot be transferred passively.

Introductory Remarks

The philosophy of constructivism evolved from dissatisfaction with traditional Western theories of knowledge. As such, it contrasts sharply with objectivist epistemology and positivism. Constructivism postulates that knowledge cannot exist outside our minds; truth is not absolute; and knowledge is not discovered but constructed by individuals based on experience. Constructivism replaces the traditional conception of truth - as the correct representation of an external world - with the concept of viability, meaning that descriptions of states or events of the world are relative to the observer. The constructivist perspective, therefore, posits that knowledge is not passively received from the world or from authoritative sources but constructed by individuals or groups making sense of their experiential world. t views knowledge as temporary, nonobjective, internally constructed, developmental, and socially and culturally mediated. Individuals are assumed to construct their own meanings and understandings, and this process is believed to involve interplay between existing knowledge and beliefs and new knowledge and experiences.

Constructivism is not a single or unified theory; rather, it is characterized by plurality and multiple perspectives. Varied theoretical orientations explicate such different facets of constructivism as cognitive development, social aspects, and the role of context. According to some scholars, the educational literature identifies eighteen different forms of constructivism in terms of methodological, radical, didactic, and dialectical considerations, yet many theorists and scholars place all forms of constructivism in three radically distinct categories: (1) sociological, (2) psychological, and (3) radical constructivism. All three categories share the epistemological assumption that knowledge or meaning is not discovered but constructed by the human mind. The basic assumptions and principles of the constructivist view of learning can be summarized as follows:

- Learning is an active process.
- Learning is an adaptive activity.
- Learning is situated in the context in which it occurs.
- Knowledge is not innate, passively absorbed, or invented but constructed by the learner.

- All knowledge is personal and idiosyncratic.
- All knowledge is socially constructed.
- Learning is essentially a process of making sense of the world.
- Experience and prior understanding play a role in learning.
- Social interaction plays a role in learning
- Effective learning requires meaningful, open-ended, challenging problems for the learner to solve

Aims/Objectives

To understand the theoretical background of constructivism its divergent underlying principles and its evolution as a theory of the 21st century

Learning Outcomes By the end of this session student will learn how to

- Compare and contrast the various categories of constructivism
- Discuss the principle of personal knowledge construct
- Analyze how knowledge is socially situated

Key Words

Sociological Constructivism	Psychological Constructivism	Radical Constructivism	Individual Knowledge	Situated Learning	Constructed Learning

Annotated Bibliography

- **Basic Sources/Material**

1. Colburn A (2000). Constructivism: Science Education's "Grand Unifying Theory", The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 74:9-12 (pdf provided).
2. Koohang A, Riley L, Smith T, Schreurs J (2009). E-Learning and Constructivism: From Theory to Application. Interdisciplinary Journal of E-Learning and Learning Objects, 5:91-109 (pdf provided).
3. Liu CC, Chen IJ (2010). Evolution Of Constructivism. Contemporary Issues In Education Research, 3:63-6 (pdf provided).
4. Olusegun BS (2015). Constructivism Learning Theory: A Paradigm for Teaching and Learning. IOSR Journal of Research & Method in Education, 5:66-70 (pdf provided).
5. Powell OP, Kalina CJ (2009). Cognitive and Social Constructivism: Developing Tools for an Effective Classroom. Education, 130:241-250 (pdf provided).
6. Schcolnik M, Kol S, Abarbanel J (2006). Constructivism in Theory and in Practice. English Teaching Forum, 4:12-20 (pdf provided).

7. Yoders S (2014). Constructivism Theory and Use from a 21st Century Perspective. Journal of Applied Learning Technology, 4:12-20 (pdf provided).

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 9.1
After having read this week's material post your answer on the forum for this question: "What are the similarities and differences of sociological, psychological, and radical constructivism? Which of the three categories fits best with your teaching practices?"
The word limit is about 500 words excluding references

Exercise 9.2
Create a concept map of your understanding of constructivism and post it as a jpeg on the forum

Recommended number of work hours for the student 20 hours

TITLE:

Constructivism in Medical Education

(10th Week)

Summary

The constructivist learning theory is one of the newest and most unique learning frameworks. Constructivists believe that knowledge is formed within the learner by integrating learning activities and experiences into knowledge and beliefs. Because constructivists believe that individuals learn by creating meaning from experiences, it follows that the locus of learning in this framework is on developing meaning, achieving understanding, and assigning significance to experiences

Introductory Remarks

The constructed knowledge is 'manipulated' through beliefs, mental structure and experiences lending to the uniqueness of learning. This contributes to different learning styles of individuals which teachers and instructors need to be aware of. This philosophy will assist teachers as curriculum delivery is not based only on the contents of materials presented. Knowledge cannot be passively transferred to the learner. The learner needs to understand the lesson in a way unique to him. Within a constructivist framework, the learning process involves construction of meaning from experiences through critical reflection on the learners' assumptions. Educators who use a constructivist approach assist learners in understanding how they developed certain assumptions and question learners as to whether those assumptions remain valid. The locus of learning in a constructivist orientation is internal and involves creating new schemes to change perspectives and deepen understanding. The role of the teacher in this framework is to foster critical reflection and negotiate meaning
with learners.

A number of medical education strategies, such as reflective journaling, writing practice narratives, and developing course portfolios, can be used to foster a constructivist learning orientation. For example, writing practice narratives has the potential to assist learners in understanding their practice as a physician in new ways. Typically, learners are asked to use a 3-column approach to construct a practice narrative. In column 1,the learner describes a particular case, and in column 2 the learners articulate their thoughts and feelings about the case. At a later date, the learner completes the third column of the practice narrative by reflecting on what they have learned. Once this activity is complete, small groups of learners come together to discuss similarities and differences in their cases and to describe what their cases mean to them. The group process helps learners to unearth assumptions and discover meanings that may be framing their clinical practice. An example of the development of curriculum for medical students is used to further explain this point. The first-year medical student goes through two years learning the basic sciences before he is in direct contact with patients. During this period of learning he grasps the fundamentals of disease like learning about the anatomy of the human

body and how it functions. Once there is mastery of these basic sciences of medicine, he is challenged with simulated patients. The latter are healthy people who volunteer to be examined so that the students can develop the skills of eliciting a clinical history and examine a 'patient'. The clinical skills unit is a dedicated centre where a real-life environment is created for the 'patient' to be seen and 'worked on'. The supervisor or preceptor begins as a demonstrator and later takes on the 'scaffold' role till competency is established. In the third year (first clinical year) the process of clinical examination is re-visited and repeated, but the students have access to real patients. It is at this stage that experiential learning is established in a clinical setting complemented by active learning through problem based and task-based learning. Task based learning (TBL) demonstrates the value of the constructivism theory of learning. It incorporates group dynamics and problem-solving approaches using real life clinical problems. Students perform tasks which health care professionals are faced with in real life. To perform the tasks, students employ an active learning process and are responsible for his learning. Learning results from the process of understanding the concepts and mechanisms underlying those tasks.

Aims/Objectives.
To understand the importance of Constructivism in Medical Education. The current trends in many medical schools around the world are associated with the assumptions of constructivism.

Learning Outcomes at the end of this session students will learn how to

- Discuss the importance of constructivism in medical education
- Analyze how constructivism has influenced Medical Education Research
- Create a lesson plan based on the assumptions of Constructivism

Key Words

Construct	Individuality	Scaffold	Creation of Knowledge	Task based learning	Active learning process

Annotated Bibliography

- **Basic Sources/Material**

1. Brandon A, All AC (2010). Constructivism Theory Analysis and Application to Curricula. Nursing Education Perspectives, 31:89-92 (pdf provided).
2. Colliver, J. A. (2002). Constructivism: The View of Knowledge That Ended Philosophy or a Theory of Learning and Instruction? Teaching and Learning in Medicine, 14: 49–51 (pdf provided).
3. Colliver, J. A. (2002). Educational Theory and Medical Education Practice. Academic Medicine, 77:1217-20.

4. Dennick, R. (2016). Constructivism: reflections on twenty five years teaching the constructivist approach in medical education. International Journal of Medical Education, 7: 200-5 (pdf provided)**.**
5. Flynn L, Jalali A , A Moreau KA (2015). Learning theory and its application to the use of social media in medical education. Postgraduate Medical Journal, 91:556-60 (pdf provided).
6. Huang HM, Rauchb U, Liaw SS (2010). Investigating learners' attitudes toward virtual reality learning environments: Based on a constructivist approach. Computers & Education, 55: 1171-82 (pdf provided).

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 10.1
Watch a link from a lab delivered in a simulation room in the course of Pathophysiology (link to be provided). On your post not exceeding 800 words excluding references identify the elements of constructivism the instructor is using to achieve his/her learning outcomes. The lesson plan of the instructor will be available at the files section of the course for the respective week.

Recommended number of work hours for the student 16 hours

TITLE:

Andragogy

(11th Week)

Summary

Knowles distinguishes between andragogy and pedagogy. He claims that andragogy, or adult learning, encourages a proactive approach to learning where inquiry and autonomy are key features. By contrast, pedagogy is teacher-centred and is closely associated with teaching children. However, it should be noted that generalisations are made regarding these two different approaches to learning because both may be appropriate for children and adults depending on their circumstances.

Introductory Remarks

Pedagogy literally means the art and science of educating children and often is used as a synonym for teaching. More accurately, pedagogy embodies teacher-focused education. In the pedagogic model, teachers assume responsibility for making decisions about what will be learned, how it will be learned, and when it will be learned.

Andragogy, initially defined as "the art and science of helping adults learn," has taken on a broader meaning since Knowles' first edition. The term currently defines an alternative to pedagogy and refers to learner-focused education for people of all ages. Knowles was convinced that adults learned differently to children - and that this provided the basis for a distinctive field of enquiry. His earlier work on informal adult education had highlighted some elements of process and setting. Similarly, his charting of the development of the adult education movement in the United States had helped him to come to some conclusions about the shape and direction of adult education. What he now needed to do was to bring together these elements. The mechanism he used was the notion of andragogy. While the concept of andragogy had been in spasmodic usage since the 1830s it was Malcolm Knowles who popularized its usage for English language readers. For Knowles, andragogy was premised on at least four crucial assumptions about the characteristics of adult learners that are different from the assumptions about child learners on which traditional pedagogy is premised. A fifth was added later. 1. Self-concept: As a person matures his self-concept moves from one of being a dependent personality toward one of being a self-directed human being 2. Experience: As a person matures, he accumulates a growing reservoir of experience that becomes an increasing resource for learning. 3. Readiness to learn. As a person matures his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles. 4. Orientation to learning. As a person matures his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centeredness to one of problem centeredness. 5.Motivation to learn: As a person matures the motivation to learn is internal (Knowles1984:12).

Aims/Objectives.

To understand the differences between pedagogy and Andragogy

Learning Outcomes By the end of this session, students will learn how to

- To distinguish between pedagogy and Andragogy
- Critically discuss the assumptions of Knowles
- The applications of Knowles' Theory to Adult Learning

Key Words

Self-concept	Experience	Readiness to learn	Orientation to learning	Motivation to learn	Adult Learning

Annotated Bibliography

- **Basic Sources/Material**

1. Edosomwan SO (2016). Childhood Learning vs. Adulthood Learning: The Theory of Pedagogy and Andragogy. US-China Education Review A, 6:115-23 (pdf provided).
2. Forrest SP, Tim PO (2006). It's Called Andragogy Academy of Management Learning & Education, 5:113-22 (pdf provided).
3. Hägg, G., & Kurczewska, A. (2020). Guiding the student entrepreneur – Considering the emergent adult within the pedagogy–andragogy continuum in entrepreneurship education. Education + Training, ahead-of-print(ahead-of-print). doi:10.1108/et-03-2020-0069 (pdf provided).
4. Merriam SB (2001). Andragogy and Self-Directed Learning: Pillars of Adult Learning Theory. New Directions for Adult and Continuing Education, 89:3-14 (pdf provided).
5. Ozuah PO (2005). First, There Was Pedagogy And Then Came Andragogy. Einstein Journal of Biology and Medicine, 21:83-7 (pdf provided).

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 11.1

Watch the following YouTube video, which compares pedagogy and andragogy in learning. It was produced by the PC3 project, which ran at Leeds Metropolitan University from 2008 to 2012 https://www.youtube.com/watch?v=vLoPiHUZbEw&feature=emb_logo&ab_channel=JanetFinlay

Create a table comparing Pedagogy to Andragogy, use references to support your assertions and post your table in the forum.

Recommended number of work hours for the student 15 hours

TITLE:
Connectivism- The theory

(12th Week)

Summary

Connectivism is a theoretical framework for understanding learning in a digital age. It emphasizes how internet technologies such as web browsers, search engines, wikis, online discussion forums, and social networks contributed to new avenues of learning. Technologies have enabled people to learn and share information across the World Wide Web and among themselves in ways that were not possible before the digital age. Learning does not simply happen within an individual, but within and across the networks. What sets connectivism apart from theories such as constructivism is the view that "learning (defined as actionable knowledge) can reside outside of ourselves (within an organization or a database), is focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing". Connectivism sees knowledge as a network and learning as a process of pattern recognition.

Introductory Remarks

Downes introduces the concept of connective knowledge, which asserts that "knowledge – and therefore the learning of knowledge – is distributive, that is, not located in any given place (and therefore not 'transferred' or 'transacted' per se) but rather consists of the network of connections formed from experience and interactions with a knowing community". Connectivism principles acknowledge that learning is complex, multi-faceted, messy, and chaotic and consist of:

• learning and knowledge require diversity of opinions
• learning is a network formation process of connecting specialised nodes or information sources
• knowledge rests in networks
• knowledge may reside in non-human appliances, and learning is enabled/facilitated by technology
• capacity to know more is more critical than what is currently known
• learning and knowing are constant, ongoing processes (not end states or products)
• ability to see connections and recognise patterns and make sense between fields, ideas, and concepts is the core skill for individuals today
• currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities
• decision-making is learning.

Connectivism is also the assertion that "the pipe is more important than the content within the pipe". That is, the connections that enable us to learn more are more important than our current state of knowing.

Aims/Objectives

To introduce the theory of connectivism as a 21st century theory of digital learning, elucidate its interwoven principles and familiarize the students with the notion that the pipe is more important than the pipe.

Learning Outcomes By the end of this session, students will learn how to

- Discuss that knowledge is and derives from a network
- Discuss learning is a pattern recognition
- Describe the principles of connectivism

Key Words

Network	Technology	Capacity for more learning	Patterns	Decision making is knowledge	Current knowedge

Annotated Bibliography

- **Basic Sources/Material**

1. AlDahdouh AA, Osório AJ, Caires S (2015). Understanding knowledge network, learning and connectivism. International Journal of Instructional Technology and Distance Learning, 2:3-20 (pdf provided).
2. Downes S (2008). Places to Go: Connectivism & Connective Knowledge. " Innovate: Journal of Online Education, 5: Article 6 (pdf provided).
3. Downes S (2019). Recent Work in Connectivism. European Journal of Open, Distance and e-Learning, 22:113-30 (pdf provided)
4. Goldie, JGS. (2016). Connectivism: A knowledge learning theory for the digital age? Medical Teacher, 38:1064–1069 (pdf provided).
5. Kop, R., & Hill, A. (2008). Connectivism: Learning theory of the future or vestige of the past? The International Review of Research in Open and Distributed Learning, 9(3). doi:10.19173/irrodl.v9i3.523 (pdf provided)
6. Transue, B. M. (2013). Connectivism and Information Literacy: Moving From Learning Theory to Pedagogical Practice. Public Services Quarterly, 9:185–95 (pdf provided).

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 12.1

Watch the following Youtube videos
https://www.youtube.com/watch?v=yx5VHpaW8sQ&ab_channel=USC%3ALearningandTeaching

https://www.youtube.com/watch?v=JR_ziHA_8LY&ab_channel=TheAgendawithStevePaikin

In your post of around 500 words excluding references, summarize the main concepts of connectivism. Please make sure that you analyze in one small paragraph all of its underlying principles.

Recommended number of work hours for the student 20 hours

TITLE:

Connectivism-Application

(13th Week)

Summary.

The data of connectivism is Medical Education is scarce. Connectivism has found its application in the learning of the Generation Y and it appears appealing for Medical Education. Since knowledge cannot be controlled as it is expanding every day, it appears to be unpredictable and in continuous growth. The current week guides the student to the current applications of connectivism and requires the student to expand the applications in the context of Medical Education

Introductory Remarks.

If we investigate the contributions made by the main theorists of Connectivism, it is possible to identify a theoretical basis upon which several principles are settled, as well as an approach to understand it. Connectivism is used to interpret and understand the processes related to learning and knowledge in the current world, particularly regarding the technological evolution of social networks and e-learning. One of the main ideas in Connectivism is that knowledge is something unpredictable, unstable, uncontrollable and in continuous growth, which means that it goes beyond the total control of a person and might be in their external networks (communities, digital devices, etc.) constantly changing. Therefore, Connectivism is not only the idea of individual human knowledge and learning, but also an approach to understand the collective mentality of a network of individuals, a community or a society based on the same principle: the generation of network ecologies constantly changing and evolving. Similarly, to the Gestalt Psychology, Connectivism also considers a global view of reality with a purely pragmatic goal. In both theoretical schools, knowledge is dependent on the global view generated by it. Therefore, knowledge is less important than the view upon which it lies, and its meaning can change according to the circumstances. The learner creates their own reality using the elements (knowledge) they have; taking an active role and being creative is, therefore, a key factor to generate learning, which, furthermore, will be completely personal and unique compared to the learning of other learner. This idea of the “Zone of Proximal Development” links directly with the performance of a knowledge network according to Connectivism and coincides with the following connectivist principle: “The ability to increase knowledge is more important than what we already know” Connectivism agrees with Constructivism in a big part of this global view of the learner, as Connectivism also considers that the learner has a main role in the learning process and gives them an active role when choosing contents and organising them according to a unique and own meaning. However, both theories differ in a fundamental aspect, as Connectivism rejects the idea of meanings being constantly constructed. According to Connectivism, the

learner is not constantly constructing because it means an attempt to organise the chaos of the learner's achievable knowledge. Sometimes, the learner just surf through this chaos without the need of organise it, or even disorganising what was previously organised. Therefore, as Siemens claims: "We are not always constructing (which implies a cognitive work), but we are constantly making connections"

Aims/Objectives

Overview the current applications of connectivism in the current world of knowledge

Learning Outcomes By the end of this session students will learn how to

- Discuss the current applications of connectivism
- Extrapolate the current application to the current Medical Education

Key Words

Unpredictability of Knowledge	Instability of Knowledge	Social networks	Communities of practice	Collective Menatlity	Theory of Chaos

Annotated Bibliography

- **Basic Sources/Material**

1. Hung NM (2014). Using Ideas from Connectivism for Designing New Learning Models in Vietnam. International Journal of Information and Education Technology, 4:76-82 (pdf provided).
2. Mackness J, Waite M, George R, Lovegrove E (2013). International Review of Research in Open & Distance Learning, 14:140-59. 20p. 2 Charts. DOI: 10.19173/irrodl.v14i4.1548.
3. Reese, S. A. (2014). Online learning environments in higher education: Connectivism vs. dissociation. Education and Information Technologies, 20:579–588 (pdf provided).
4. Sarıtaş MT (2015). The Emergent Technological and Theoretical Paradigms in Education: The Interrelations of Cloud Computing (CC), Connectivism and Internet of Things (IoT). Acta Polytechnica Hungarica, 12:161-79 (pdf provided).
5. Siemens G, Conole G (2011). Special Issue - Connectivism: Design and Delivery of Social Networked Learning. International Review of Research in Open and Distance Learning, 12:i-iv (pdf provided).
6.

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities
Assignment This is a graded assignment and accounts for 50% of your total assignment grade

You have read the theory of connectivism and you have been exposed to its basic principles and criticism. You have also been exposed to its current applications. The title of the assignment is “Other than Massive open online courses, what other elements of connectivism may be relevant for Medical Education? Reflect on the various principles of connectivism and incorporate them in the field of Medical Education. Also incorporate the idea of social networks and communities of practice in Medical Education. Word limit 400 words, excluding references and tables.

Recommended number of work hours for the student 20 hours

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

The Final Exam represents that the student attained all the necessary knowledge and skills of the profession included in the program.

(14th week)

Recommended number of work hours for the student
Approximately 60 hours.

INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

Title:

How People learn

(1st Week)

Exercise 1.1

- Please consider what is learning. For example, according to Wakefield (1996: 364) learning can be described as a relatively permanent change in the behaviour of an individual based on his/her experiences or discoveries. Thus, the processes of experience and discovery lead to a new understanding of the world and ourselves, and enable us to apply the acquired knowledge in new situations. Knowledge acquisition, then, involves processes that transform data from experience into organised information
- Please consider what is knowledge. Is knowledge something out there that we need to discover, or is it something that we construct? Take into consideration the following distinction: Declarative knowledge, refers to factual knowledge; Procedural knowledge, refers to skills of doing things and how to execute activities; Metacognitive knowledge is about our awareness of how we think
- Define teaching. Teaching is not easy to define and this can be proved by the large amount of literature on the subject. Teaching is more than just the interaction between teacher and learner. Teaching can be thought of as consisting of three distinct aspects, namely, planning, interaction and assessment.
- Please see the following table which makes a summary of the modern learning theories

	Behaviorist	**Cognivist**	**Constructivist**
Knowledge is:	Passive, largely automatic responses to external factors in the environment	Abstract symbolic representations in the mind of individuals	A constructed entity made by each individual through the learning process
Learning is:	A relative permanent change in behaviour	A change in a learner's understanding	Discovery and construction of meaning
Focus of learning is on:	Association, operant behaviour, conditioning	Increased meaning and improved memorisation	Problem-solving and construction of meaning

Key learning concept:	Reinforcement and programmed learning	Elaboration	Intrinsic motivation
Centred on:	Instructor	Student	Student

Exercise 1.2
Using your peers' posts discuss with them, the definitions of teaching and learning, reflect on what theory could explain their experience and suggest alternative ways to end the same experience.

Title:

Behaviourism

(2nd Week)

Exercise 2.1 Consider in your answer the importance of the teacher in ensuring a favourable learning environment is highlighted by Skinner (1968: 64) when he states that

the application of operant conditioning to education is simple and direct. Teaching is the arrangement of contingencies of reinforcement under which students learn. They learn without teaching in their natural environments, but teachers arrange special contingences which expedite learning, hastening the appearance of behaviour which would otherwise be acquired slowly or making sure of appearance of behaviour which otherwise would never occur.

To the behaviourists, objectivity is very important. It is because of this reason that behaviourists place primacy on overt behaviours over inner states such as motives or mental states. They argue that inner states such as motives or mental states cannot be measured objectively. It can be stated here that although other learning theories use introspective methods in their endeavour to explain how learning occurs, the principles upon which they are based are linked to behaviourism in one way or another. This is because, the final end in all of them is an objective observation of behavioural change as a reliable indicator of whether learning has occurred or not.

Exercise 2.2 Using your peers' posts discuss with them, the definitions of teaching and learning, reflect on what theory could explain their experience and suggest alternative ways to end the same experience.

Title:

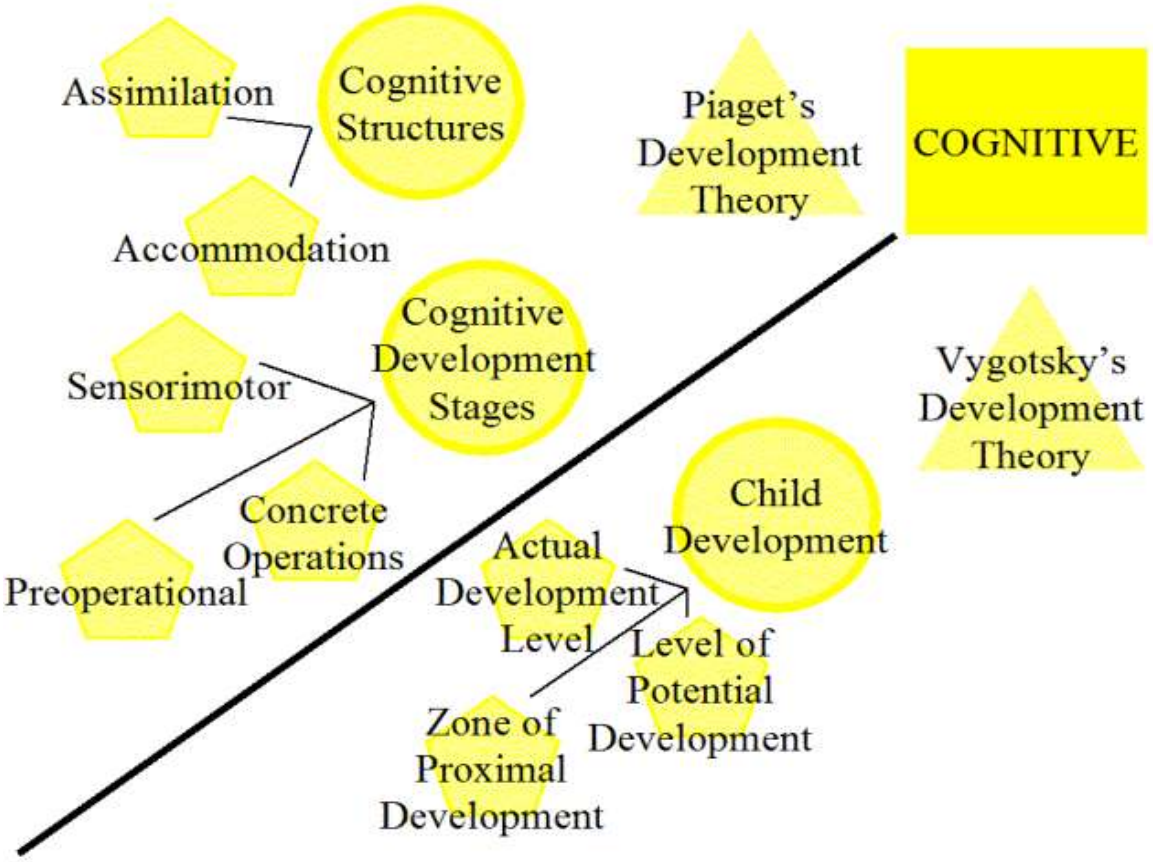
Cognitivism-The theorists

(3rd Week)

Exercise 3.1 Consider the following points:

- Cognitivism focuses on the thought processes, ideas, and concepts associated with learning. The learner employs cognitive tools including insight, information processing, perception, and memory in facilitating learning. Fitts and Posner proposed a motor skills development model comprising cognitive, associative, and autonomous stages. The cognitive stage involves the conscious planning of hand-eye movement and coordination; with continued and consistent practice, the learner progresses into the associative stage with better, faster, and well-grounded movements. After further practice, the autonomous stage is achieved with consistent, efficient, and faster movements and negligible cognitive input.
- Memory and the handling of information are recognized as the pillars of cognitivism. Working memory is useful in effective learning, but it can be overwhelming. It has a limited capacity and can hold only five to nine chunks of information. This is supported by cognitive load theory (CLT), which is a significant aspect of cognitivism and is very relevant in the acquisition of ultrasound skills. CLT is composed of three groups influencing working memory: intrinsic load (associated with performing tasks), extraneous load (associated with non-essential parts of a task), and germane load (associated with benefits to the act of learning).

Exercise 3.2 An example of a concept map can be found here



Title:

Teaching Methods Based on Some Principles of Cognitive Learning Theory

(4th Week)

Assignment 1: This will be a graded assignment.

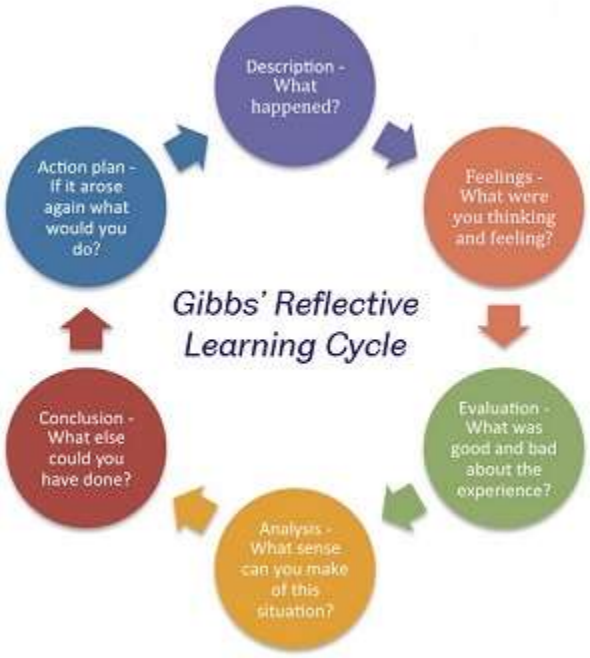
Title:

The echoes of Cognitivism: Reflection

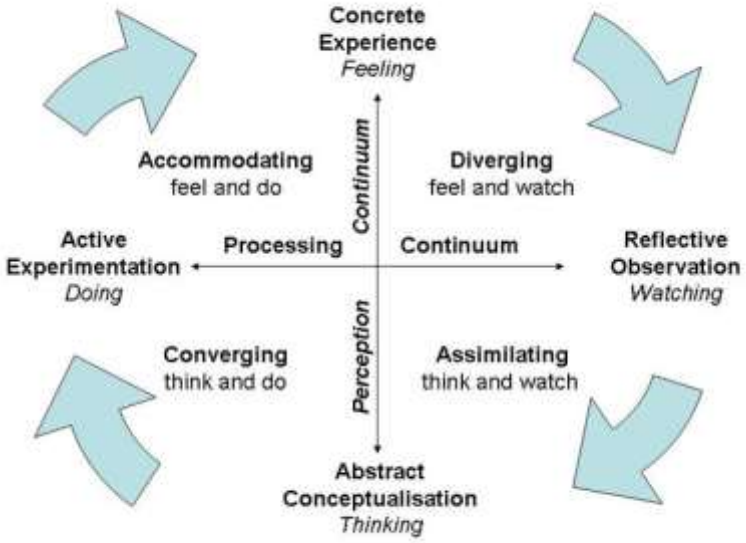
(5th Week)

Exercise 5.1 The figures of the three reflective instruments is given here

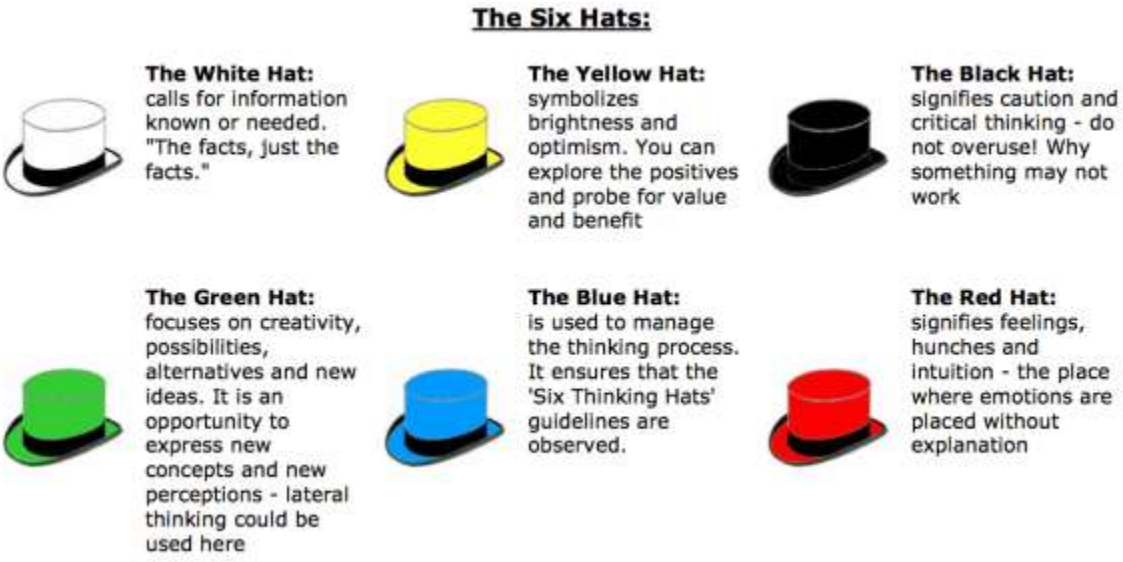
A. Gibb's Cycle



B. Kolb's reflective cycle



C. de Bono's hats



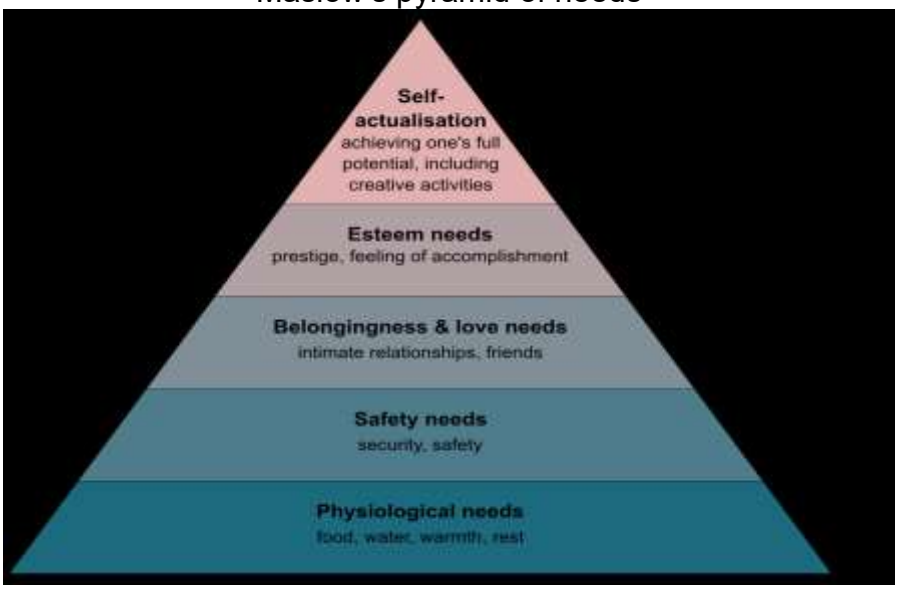
Exercise 5.2 Respond accordingly and meaningfully

Title:

The enabler: Humanism (6th Week)

Exercise 6.1

Maslow's pyramid of needs



Exercise 6.2

Consider the following points:

- A good physician must possess not only accurate medical knowledge and skills but also he/she must have moral judgment and actions, kind attitude, trusting relationship with patients and their families. Physicians must consider that the patient has a body and soul, emotions, feelings, expectations, and fears.
- Humanistic medical care enhances patients to adhere to medical advice and treatment options, resulting in improved health care outcomes.
- Any interpersonal relationship like medicine or education where human is in-between the patient and doctor, or student and teacher respectively, requires time to grow and flourish. However, in the practice of medicine; as anywhere else, the time has become greatly lacking.
- The role model is a term refers to a person or physician who is followed by students or learners to imitate his/her clinical experience, humanistic behavior, and teaching skills. Positive role models had high degrees of skills and knowledge. They emphasize the psychological and social aspects of medical care. They respect

their patients and listen to them with attention and respond to their feelings and emotions.

Title:

Social Cognitive Learning Theory

(7th Week)

Exercise 7.1

Did you consider the following points?

- Started as social learning theory and the cognitive component was added afterwards
- Core claim: Behaviour can be learned by observation
- Observational learning occurs directly and by observing others
- Four processes influence observational learning: Attention, Retention, Motor Reproduction, Reiforcement/motivation
- Characteristics of a role model: Great knowledge, humanist approach, loving, caring, good construction of teaching, etc.

Exercise 7.2:

Respond meaningfully and to your classmates' presentations

Title:

Learning Styles

(8th Week)

Assignment: Graded Group Assignment

Title:

Theoretical approach in constructivism

(9th Week)

Exercise 9.1

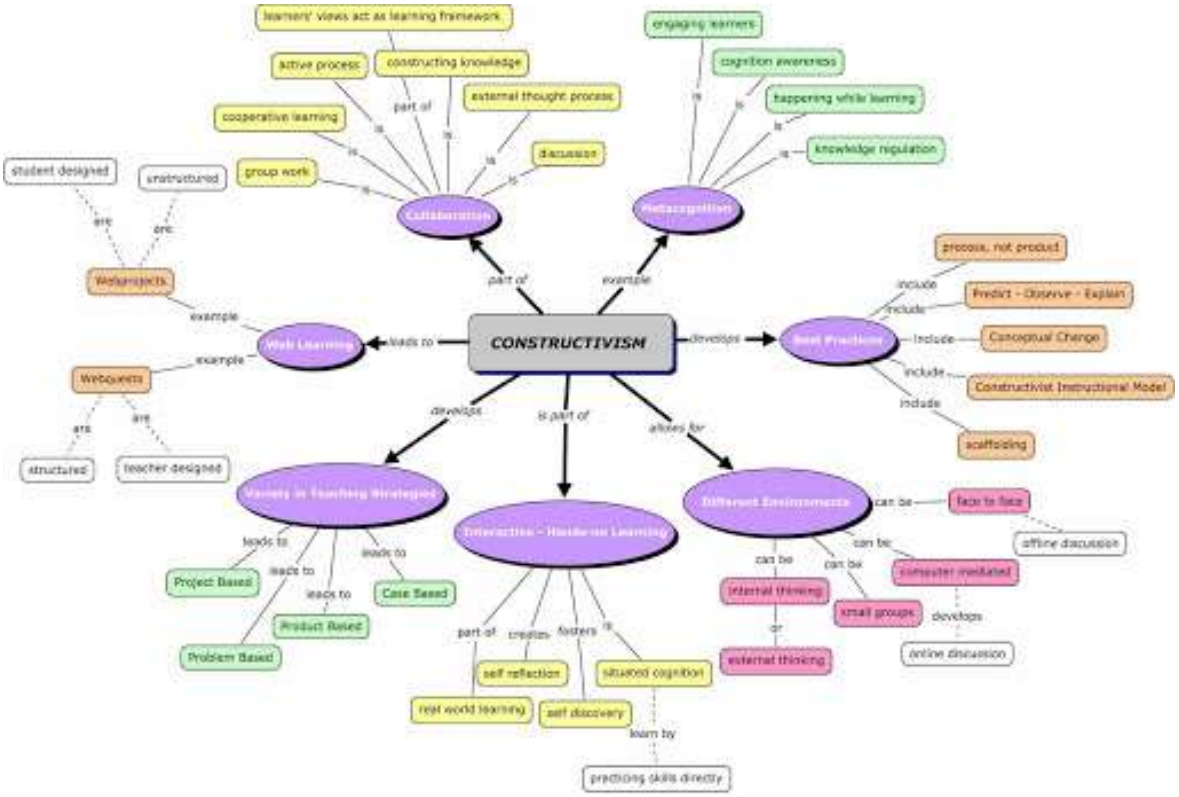
Social constructionism or social constructivism: A theory that bodies of knowledge or disciplines that have been built up are "human constructs, and that the form that knowledge has taken in these fields has been determined by such things as politics, ideologies, values, the exertion of power and the preservation of status, religious beliefs, and economic self-interest." This approach centers on the ways in which power, the economy, [and] political and social factors affect the ways in which groups of people form understandings and formal knowledge about their world. These bodies of knowledge are not considered to be objective representations of the external world.

Psychological constructivism: This approach relates to a developmental or learning theory that suggests that individual earners actively construct the meaning around phenomena, and that these constructions are idiosyncratic, depending in part on the learners' background knowledge. The development of meaning may take place within a social group that affords its individual members the opportunity to share and provide warrant for these meanings. If the individuals within the group come to an agreement about the nature and warrant of a description of a phenomenon or its relationship to others, these meanings become formal knowledge.

Radical constructivism, introduced by Ernst von Glasersfeld, assumes that external reality cannot be known and that the knowing subject constructs all knowledge, ranging from everyday observations to scientific knowledge; knowing thus inevitably reflects the perspective of the observer. According to radical constructivists, it is impossible to judge knowledge as an ontological or metaphysical reality. Knowing without metaphysics is possible; meaning exists in the realm of the experiential world and notontologically, a view called post-epistemology.

Exercise 9.2

An example of a detailed concept map


CONSTRUCTIVISM
learners' views act as learning framework
active process
constructing knowledge
external thought process
cooperative learning
discussion
group work
Collaboration
part of
is
engaging learners
cognition awareness
happening while learning
knowledge regulation
Metacognition
example
student designed
unstructured
are
Webquests
example
Web Learning
leads to
develops
Best Practices
process, not product
include
Predict - Observe - Explain
Conceptual Change
Constructivist Instructional Model
scaffolding
Webquests
structured
teacher designed
develops
is part of
allows for
Variety in Teaching Strategies
leads to
Project Based
Problem Based
Product Based
Case Based
Interactive - Hands-on Learning
part of
creates
fosters
self reflection
real world learning
self discovery
situated cognition
learn by
practicing skills directly
Different Environments
can be
face to face
offline discussion
computer mediated
online discussion
internal thinking
external thinking
small groups
develops

Title:

Constructivism in Medical Education

(10th Week)

Exercise 10.1
A sample of a lesson plan is given below

5 Step Lesson Plan Template

Anticipatory Set	• Engage students. • Connect with prior learning. • Explain what students will learn. • Explain what students will do. • Connect to future learning.
Introduction of New Material	• Provide direct instruction of content. • Model new skills. • Check for understanding.
Guided Practice	• Facilitate student work.
Independent Practice	• Assign independent classwork or homework.
Closure	• Have students briefly summarize their learning.

Exercise 10.2 Meaningfully discuss on of your classmates lesson plans

Title:

Andragogy

(11th Week)

Exercise 11.1

A comparative table is seen below

Pedagogy vs. Andragogy

	Pedagogical	Andragogical
The Learner	• The learner is dependent upon the instructor for all learning • The teacher/instructor assumes full responsibility for what is taught and how it is learned • The teacher/instructor evaluates learning	• The learner is self-directed • The learner is responsible for his/her own learning • Self-evaluation is characteristic of this approach
Role of the Learner's Experience	• The learner comes to the activity with little experience that could be tapped as a resource for learning • The experience of the instructor is most influential	• The learner brings a greater volume and quality of experience • Adults are a rich resource for one another • Different experiences assure diversity in groups of adults • Experience becomes the source of self-identify
Readiness to Learn	• Students are told what they have to learn in order to advance to the next level of mastery	• Any change is likely to trigger a readiness to learn • The need to know in order to perform more effectively in some aspect of one's life is important • Ability to assess gaps between where one is now and where one wants and needs to be
Orientation to Learning	• Learning is a process of acquiring prescribed subject matter • Content units are sequenced according to the logic of the subject matter	• Learners want to perform a task, solve a problem, live in a more satisfying way • Learning must have relevance to real-life tasks • Learning is organized around life/work situations rather than subject matter units
Motivation for Learning	• Primarily motivated by external pressures, competition for grades, and the consequences of failure	• Internal motivators: self-esteem, recognition, better quality of life, self-confidence, self-actualization

Title:

Connectivism-The Theory

(12th Week)

Exercise 12.1

The following image summarizes the concepts of connectivism as opposed to the 3 main learning theories (image from Open University)

behaviourism, cognitivism, constructivism	**connectivism**
knowledge is stable and limited in its accessibility, therefore the processes of acquiring knowledge are important	knowledge is abundant and its half-live is shrinking, therefore the processes of evaluating knowledge are important
knowledge is understood as an objective or state which is to be acquired or achieved	knowledge is understood as a capability to form and maintain connections to relevant sources of knowledge
knowledge is acquired in a linear manner (instructor → learner)	knowledge is developed in an interactive cycle (personal to network to organization)
cognitive processes are happening within the individual	cognitive operations are increasingly supported/supplemented/replaced by technology
Principality of the learning individual: the focus lies on how an individual acquires knowledge (through experiences, interpretation, construction)	Principality of the learning network: the focus lies on collaborative learning processes of interacting members of a network

Title:

Connectivism-Applications

(13th Week)

Assignment. This will be a graded assignment.

Title:

FINAL EXAM

(14th Week)

The final exam is a composed by the following: multiple choice questionnaire (MCQ), two essay questions along with two digital case scenarios.

Please note: The following questions, essay tasks, and case scenarios are provided here are not to be used or reproduced for any purpose.

The MCQ will have 15 questions with provided four answers per each, where all sessions will be covered. All correct answers must to be marked. The minimum to pass is 70%. Incorrect answers will not have addition of negative points. Time to complete the MCQ is 15 minutes.

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE610-Research Methodology in Medical Education

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE610-Research Methodology in Medical Education**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☒	Elective ☐	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (25%)		
Assessment	Assignments	Final Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Prof. Dimitrios Farmakis
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING: INTRODUCTION

PROGRAMME PRESENTATION

1. Program's purpose and objectives:

Healthcare professionals are increasingly required to have formally recognized teaching qualifications. This program is suitable for doctors and other healthcare professionals who are responsible for teaching, assessing and supporting undergraduate students and trainees, either in institutions or in the workplace. The program is designed for busy healthcare professionals, such as GPs, doctors, nurses, healthcare professionals and those with related undergraduate degrees, including pharmacy, and physical therapy.

The MSc Program aims to help students to develop their scholarship and research skills in order to effectively train healthcare professionals of the future. The program offers students an introduction to teaching, learning and assessment for effective teaching both in undergraduate and post-graduate students with the ultimate aim to improve patient safety. The MSc in Medical Education is designed for individuals who are interested in developing a critical knowledge for the effective application of medical education in local and international contexts.

The program fosters advanced skills of comprehension, interpretation, and analysis through courses that include examination of Medical Education Theories and their application into practice. It sensitizes students to the dynamic of infrastructures and learning environments (whether physical or virtual) and concentrates on how new technologies can be used to enhance effective medical education. The program can be offered completely as a taught course, where students successfully succeed in 9 courses (6 compulsory and 3 electives) or 6 compulsory courses and a Thesis

GENERAL OBJECTIVES: The program seeks to:

- broaden opportunities for qualified students for entry into higher level education studies
- to promote professional development and enhance research activity, both for those involved and for the general public
- to cultivate ethically and professionally sound research and practice in Medical education and to contribute to the development of a reflective and analytical attitude towards delivery of medical knowledge with an ultimate goal to improve patient safety
- to cultivate / develop an advanced postgraduate activity that is characterized by intellectual stimulation, is professionally compatible and useful and leads to research activity for the production of new and / or remodeling of existing knowledge, as a basis for decision making and problem solving in issues of medical education
- to broaden research and academic cooperation of all kinds with participants, scholars, educational institutions and academic staff**.**

SPECIFIC OBJECTIVES: More specifically, the program seeks to:

- provide opportunities for MSc students to study in detail topics related to advanced academic studies and the systematic research in the field of Medical Education
- advance MSc students' familiarity with the theories of the area of their research within

Education Sciences, epistemological theories in the field of Medical Education, as well as research methods, aiming to further delve into their area of interest viewing it in a broader perspective

- to facilitate MSc those students, who choose the Thesis option, in conducting individual and independent research and producing an academic dissertation at a highly specialized level within the boundaries of their field
- help MSc students develop skills in understanding and using qualitative and quantitative methods and measurements, and using multivariate statistics to draw conclusions and make decisions based on relevant research data
- help MSc students develop the knowledge and skills necessary to use methods and theories of their area in an independent and critical manner, producing new knowledge in Medical Education
- prepare MSc students for new knowledge production or remodeling of existing knowledge, creating the basis for the development of pedagogical / educational theories through applied research
- enable graduates to get a deeper insight into today's complex medical educational environment and apply the knowledge gained to emerge as career leaders of their choice
- Develop the ability to critique and analyze a broad range of materials and communicate ideas and theories effectively.
- Develop advanced written and verbal skills through the composition of thoroughly researched term papers, surveys based on an analysis of previously collected data
- Acquire the ability to work within a team and develop presentation skills.

2. Course Presentation

The course is designed to familiarize students with advanced qualitative methodological approaches of education issues. It also aims to study the philosophical underpinnings of qualitative research and of basic forms of qualitative research through the formulation of research objectives and questions, methods for collecting various types of qualitative data, organizing and analysis of data and extracting patterns and emerging issues through the use of qualitative data analysis software. At the same time, it aims to develop students' critical skills to interpret and evaluate published qualitative research papers from various fields of education. In addition, the course aims at the development of students' deep understanding and appreciation of the philosophical underpinnings and main principles underlying quantitative research, and of the relation between quantitative and qualitative research paradigms. It also aims at acquainting students with various advanced statistical methods, and with how these could be exploited to investigate educational phenomena and issues. At the same time, the course aims to provide doctoral students with the knowledge and skills required to pose research questions requiring a quantitative approach, to collect data (whenever deemed necessary), to record and analyze empirical data using appropriate statistical software packages and techniques, and to interpret and present the results of a statistical analysis in a research report. Finally, the course aims to develop doctoral students' ability to critically interpret and evaluate quantitative research studies in the field of education or in the broader area of social research.

Upon successful completion of this course students should be able:

- To explain modern approaches to qualitative research as well as their role in improving education
- To elucidate the theoretical and epistemological principles underpinning the various approaches of qualitative research
- To distinguish the characteristics of various research methodologies of qualitative research
- To identify and explain the practical dimensions of qualitative research
- To design qualitative research by selecting the appropriate procedures and approaches depending on research objectives and research questions that have been set
- To collect qualitative data, organize and analyze them using qualitative data analysis software (e.g. ATLAS. ti, NVivo).
- To identify and discuss the effects that lend various research models (theoretical framework, ethical issues, validity, etc.)
- To recognize and discuss dilemmas of core issues related to the application and acceptance qualitative approaches
- To be critical readers of qualitative educational research.
- Analyse the relationship between epistemology, theory, methodology and methods in quantitative, qualitative and mixed educational research
- Identify and justify the most appropriate research approach to address an identified educational problem, issue, or knowledge need
- Design a quantitative study by setting research aims and questions and selecting appropriate methods and techniques to respond to these aims and questions
- Collect quantitative data with appropriate techniques and use statistical analysis software packages to record, process and analyse research data by applying advanced statistical methods
- Critically analyze and discuss the potential of various quantitative methodologies, but also key epistemological and methodological issues raised in quantitative methodologies
- Be critical readers of quantitative research findings in the field of education
- Identify and address ethical issues related to quantitative research in an educational context

The content of the course includes:

- Epistemological conventions and epistemological paradigms of qualitative research
- Development of research questions for qualitative research (e.g., feminist approaches, post-structuralism, critical theory
- Qualitative research design and data collection (e.g. interviews, observations, collection of archival and photographic material, videos and gain entry)
- Methodological approaches to qualitative research (case study, action research, ethnography, grounded theory, Phenomenology, etc.)
- Validity and ethical issues in qualitative research
- Approaches and strategies of analysis in qualitative research
- Using qualitative data analysis software (e.g. ATLAS. ti, NVivo)
- Issues regarding generalization in qualitative research
- The nature of educational research – ontological, epistemological, and methodological assumptions in relation to the various schools of thought

- Quantitative educational research: role, societal impact, similarities and differences compared to qualitative and mixed research methods
- Analysis of the relationship between epistemology, theory, methodology and methods in quantitative, qualitative and mixed educational research
- Historical overview of the evolution of quantitative research methods and techniques
- Issues of validity, reliability and research ethics in quantitative research
- Formulation of research questions and statistical hypotheses;
- Probability, probability models, sampling, principles of inferential statistics;
- One-sample and two-sample hypothesis testing regarding the mean, proportion, and dispersion
- Assumptions underlying parametric tests, statistical power, effect size, required sample size
- Non-parametric statistical tests
- Correlation Analysis, Correlation Coefficients
- Regression analysis: Simple, multiple, linear, nonlinear, logistic
- Analysis of Variance (ANOVA), Analysis of Covariance (ANCOVA), Multivariate Analysis of Variance (MANOVA)
- Factor analysis, principal component analysis
- Multidimensional scaling, clustering, discriminant analysis
- Structural equation modeling and latent class modeling
- Hierarchical linear models
- Categorical data analysis
- Meta-analysis
- Statistical software packages for recording, processing and analyzing data through the application of advanced statistical methods
- Examples of quantitative research studies published in the field of education

Recommended student work time

Approximately 17 hours (including the study of the Guide)

TITLE:
ONTOLOGY-EPISTEMOLOGY-METHODOLOGY

(1st Week)

Summary

Ontology, Epistemology, Methodology and Methods have very distinct definitions; however, they are all part of a continuum which leads to the realization of research. To this effect each researcher needs to profoundly reflect on his notion on the kind and nature of reality. Based on this reflection, epistemology represents the way in which we can acquire the desired knowledge. Methodology is the contextual framework of bring our ontology and epistemology. Methods is not a synonym to methodology.

Introductory Remarks

Ontology is the study of 'being' and is concerned with 'what is', i.e., the nature of existence and structure of reality as such or what it is possible to know about the world. The SAGE Online Dictionary of Social Research Methods defines ontology as "a concept concerned with the existence of, and relationship between, different aspects of society such as social actors, cultural norms and social structures. Ontological issues are concerned with questions pertaining to the kinds of things that exist within society". Ontology is the assumptions we make about the kind and nature of reality and what exists. Ontology can also be perceived as the nature of the world and what we can know about it. Furthermore, 'social ontology' is a philosophical consideration in research which concerns the nature of social entities, i.e., whether these social entities are or can be objective entities which exist independently from social actors or rather they are social constructions in themselves built up from the perceptions, actions and interpretations of the individuals in society. Moreover, ontology concerns the question "whether or not there is a social reality that exists independently from human conceptions and interpretations and, closely related to this, whether there is a shared social reality or only multiple, context-specific ones". In short, ontology concerns our beliefs about the kind and nature of reality and the social world (what exists).

Epistemology in general is the assumptions we make about the kind or the nature of knowledge or how it is possible to find out about the world. Epistemology is a way of looking at the world and making sense of it. It involves knowledge and, necessarily, it embodies a certain understanding of what that knowledge entails. Moreover, epistemology deals with the 'nature' of knowledge, its possibility (what knowledge is possible and can be attempted and what is not), its scope and legitimacy. Similarly, but with a particular reference to the contrasting views about how natural and social worlds should be studied, epistemology can be defined as "an issue concerns the question of what is (or should be) regarded as acceptable knowledge in a discipline". Epistemology is about the assumptions which one makes about "the very bases of knowledge – its nature and form, how it can be acquired and how communicated to other human beings". Furthermore, the kind of epistemological assumptions which we make or hold about knowledge profoundly affect how we go about uncovering knowledge of social behaviour. Here the material refers to the decisions which the researcher will need to make about the kind of method(s) he or

she will be using in their research as per their epistemological assumptions. That is, if knowledge, on one hand, is viewed as hard, objective and tangible, this demands of the researcher an observer role together with an allegiance to the methods of natural science such as testing, measuring, etc. If knowledge, on the other hand, is viewed as personal, subjective, and unique, then this imposes on the researcher a rejection of the methods used by natural science and a greater involvement with their subjects.

Methodology is 'a contextual framework' for research, a coherent and logical scheme based on views, beliefs, and values, that guides the choices researchers [or other users] make". It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge such that the methodologies employed from differing disciplines vary depending on their historical development. This creates a continuum of methodologies that stretch across competing understandings of how knowledge and reality are best understood. This situates methodologies within overarching philosophies and approaches. Methodology may be visualized as a spectrum from a predominantly quantitative approach towards a predominantly qualitative approach. Although a methodology may conventionally sit specifically within one of these approaches, researchers may blend approaches in answering their research objectives and so have methodologies that are multimethod and/or interdisciplinary. Overall, a methodology does not set out to provide solutions - it is therefore, not the same as a method. Instead, a methodology offers a theoretical perspective for understanding which method, set of methods, or best practices can be applied to the research question(s) at hand.

Aims/Objectives.

The general aim of this week is to elucidate the concepts of ontology, epistemology and methodology and to explain that methods are quite distinct from methodology, as the latter does not provide solutions.

Learning Outcomes By the end of this session student will be able to:

- Define Ontology
- Critically reflect on his/her Ontology
- Discuss Epistemology
- Compare and contrast Methodology from Methods

Key Words

Ontology	Nature	Perception	Epistemology	Methodology	Methods

Annotated Bibliography

- **Basic Sources/Material**

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6. Rawnsley, M. M. (1998). Ontology, Epistemology, and Methodology: A Clarification. Nursing Science Quarterly, 11:2–4 (pdf provided).

- **Supplementary Sources/Material**

1. Wright, S., O'Brien, B. C., Nimmon, L., Law, M., Mylopoulos, M. (2016). Research Design Considerations. Journal of Graduate Medical Education, 8:97–98 (pdf provided)

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 1.1

After reading this week's material, and watching this video from YouTube https://www.youtube.com/watch?v=b83ZfBoQ_Kw&ab_channel=WalesDTP

reflect on your ontology. Write on the following on the forum: "What is your ontology and epistemology? What approach would you choose to address any question you find relevant in the field of Medical Education?" Word limit is 500 words excluding references. Discuss AT LEAST one of your classmates' post in a meaningful way.

Recommended number of work hours for the student: 17

TITLE:
FORMULATING A RESEARCH QUESTION. CONCEPTUAL FRAMEWORKS IN MEDICAL EDUCATION

(2nd Week)

Summary.

Formulating a research question represents the cornerstone of any research study, frames the purpose of the study and defines its conceptual framework and the methodology and methods to be followed. The conceptual framework or model of the study organizes and connects the different facets of the study into a single coherent structure.

Introductory Remarks

The very first step in the design of a research study is the formulation of a research question that addresses an open issue derived by an observation or/and literature search. The research question frames the purpose of the study and further defines the conceptual framework of the study and the methodology and methods to be followed.

The research question should be clear, meaningful and relevant to the field of the study; in this case, it should aim at promoting the theory and/or practice of Medical Education. It should be carefully focused so it can be answerable; an initial broad research question may need to be narrowed down to better focus on the specific topic of interest. The PICOT approach requires that the research question specifies the target Population, the Intervention under investigation, the Comparator intervention, the Outcomes of the study, and the Time period over which the outcomes will be assessed.

The conceptual framework (or the model) of the study derives from the research question and defines what kind of the study will be conducted. It organizes and connects the different facets of the study into a single coherent structure. There are four main conceptual frameworks in Medical Education, the Kirkpatrick framework, the Translation Science model, the 3-P model, and the Cook model. The Kirkpatrick framework is the most widely used in education and categorizes the impact of an educational intervention into levels. The translational science model aims at applying the findings of research studies in the field education in the research interventions in order to impact the practice of education. The 3-P model (Presage, Process, Product) considers teaching and learning from the perspective of the learner, thus supporting a learner-centered approach that contrasts the traditional teacher-centered models. The Cook model defines a hierarchical classification of Medical Education research according to the purpose of the studies, with the three main categories being description, justification, and clarification.

Aims/Objectives

To familiarize the students with the concept of research question and the main conceptual frameworks followed in Medical Education studies.

Learning Outcomes By the end of this session student will be able to:

- Identify the research question in a published paper describing the results of a qualitative research project
- Formulate a research question in a relevant field of research
- Describe the main conceptual frameworks in Medical Education studies

Key Words

Research question	Conceptual framework	Kirkpatrick framework	Translational Science model	3-P model	Cook classification

Annotated Bibliography

- **Basic Sources/Material**
  1. Boet S, Sharma S, Goldman J, Reeves S. Review article: medical education research: an overview of methods. Can J Anaesth. 2012 Feb;59(2):159-70.
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  1. McGaghie WC, Bordage G, Shea JA. Problem statement, conceptual framework, and research question. Acad Med 2001; 76: 923-4.
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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 2.1

After studying the week's material, write and post on the forum the research questions addressed in three published qualitative research papers on a topic of Medical Education.

TITLE:
RESEARCH APPROACHES: QUALITATIVE VERSUS QUANTITATIVE

(3Rd Week)

Summary

Qualitative and quantitative research are the two diverse approaches in Medical Education research. Qualitative research aims at exploring the nature of phenomena, while quantitative research aims at predicting specific outcomes through hypothesis testing. Mixed approaches may be required to address more complex research problems.

Introductory Remarks

Research in the field of Medical Education research is of utmost importance to advance both the theory and the practice of Medical Education. Research findings allow to move from opinion-based to evidence-based educational processes and curricula.

The two diverse approaches to research in Medical Education research, qualitative and quantitative, have several differences in epistemology, underlying theories of knowledge, objectives, questions to be investigated, methodologies, methods as well as the role of researcher.

In the qualitative paradigm, research aims at understanding or exploring the nature of phenomena. In this paradigm, phenomena are explored in their natural milieu, by trying to explain the phenomena in the manner that the participants of the phenomena comprehend and experience them. To this effect, the qualitative researcher performs several tasks from the conduction of interviews, the hermeneutics of the documentation and reflects profoundly on the data to the point of self-reflection. Data collection and analysis overarch with the extrapolation of associations and outcomes.

Quantitative research, in contrast, aims at predicting specific outcomes through hypothesis testing. The positivism paradigm, expressed by quantitative research, emphasizes on human logic which it is considered to be the supreme function of the human body. For this approach, there is only one absolute truth which can be revealed only through scientific inquiry. The world is a space of logic characterized by order and consequence and in which a clear distinction is expressed in various variables, such as time. The quantitative approach is based on the assumption that results can be extrapolated to the general population in contrast to the qualitative paradigm where the generalization is theoretical, and it is based on the principle of transferability.

Mixed approaches combining qualitative and quantitative research may further be needed to address more complex problems that require collection of both qualitative and quantitative data. Often, collecting qualitative data is necessary either to inform the design or explain the results of a quantitative study.

Aims/Objectives

To understand the basic characteristics of qualitative research as compared to quantitative research as well as the role of research in advancing the field of ME.

Learning Outcomes By the end of this session student will be able to:

- Describe the main features of qualitative and quantitative research
- Discuss the main differences between the two research approaches
- Elaborate on the importance of research in the field of ME

Key Words

Qualitative research	Quantitative research	Objectivism	Constructivism	Positivism	

Annotated Bibliography

- **Basic Sources/Material**
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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 3.1

After studying the week's material, write and post on the forum a short text of 500 words summarizing the differences between qualitative and quantitative research in terms of epistemology, objectives, questions asked, methodologies, methods and the role of researcher and comment at least one of your classmates' posts.

Recommended number of work hours for the student: 17

TITLE:

DESIGN OF QUALITATIVE RESEARCH. METHODOLOGIES IN QUALITATIVE RESEARCH

(4th Week)

Summary

The different in the design and conduct of a qualitative research study following the formulation of the research question and the definition of the conceptual framework, include the definition of methodology, the choice of methods of data collection, sampling, and data analysis and the synthesis and interpretation of data**.** The qualitative methodology represents the overarching philosophy that guides the study processes and is distinct from the methods that describe how the data will be collected and analyzed.

Introductory Remarks

The research question defines the conceptual framework of the study and the methodology to be followed. The methods that will be employed for the collection and analysis of data should derive in turn from the methodology and not the other way around.

The qualitative methodology represents the philosophy that guides the study processes regarding the collection and analysis of data and is distinct from the research methods that describe how the data will be collected and analyzed. Common qualitative methodologies include discourse analysis, ethnography, phenomenology, grounded theory and thematic analysis.

Discourse analysis investigates language to enable an understanding of its role in constructing the social world.

Ethnography collects observational and interview data to analyze the meanings and behaviors associated with the membership of groups or teams.

Grounded theory uses data collection and analysis to develop a integrated set of concepts that explain theoretically a social phenomenon.

Phenomenology focuses on exploring how individuals make sense of the world, aiming at providing insightful accounts into their subjective experiences.

Thematic analysis focuses on the identification of themes and their categorization within and across data sets to describe the phenomenon of interest.

Aims/Objectives

To understand the different steps followed in the design and conduct of a qualitative research that follow the formulation of research question and the definition of the conceptual framework, including methodology, methods of data collection and sampling, methods of data analysis and the synthesis and interpretation of data and to familiarize with the main different qualitative methodologies applied in qualitative Medical Education.

Learning Outcomes By the end of this session student will be able to:

- Describe the main steps in the design of qualitative research
- Understand the different methodologies applied in qualitative Medical Education research
- Identify the applied methodology in a published qualitative research study

Key Words

Qualitative research	Qualitative methodology	Discourse analysis	Ethnography	Phenomenology	Grounded theory
Thematic analysis					

Annotated Bibliography

- **Basic Sources/Material**
  1. Sawatsky AP, Ratelle JT, Beckman TJ. Qualitative Research Methods in Medical Education. Anesthesiology. 2019 Jul;131(1):14-22.
  2. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Acad Med. 2014;89(9):1245-51.

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 4.1

After studying this week's material, identify two different research papers on Medical Education in the field of your interest or expertise and describe and evaluate the study design.

Recommended number of work hours for the student:17

TITLE:

METHODS IN QUALITATIVE RESEARCH

(5th Week)

Summary

The methods applied for data acquisition and analysis are dictated by the research question, the conceptual framework of research and the overarching qualitative methodology. The trustworthiness of study findings should further be ensured.

Introductory Remarks

Data collection methods are driven by the research question and the methodology. Common sources of data in qualitative research includes interviews, survey questions, focus groups, documents and observations. The definition of the method of sampling the data sources follows. In contrast to quantitative approaches, in qualitative research sampling is often purposive and not random, in which participants are chosen based on whether their perspectives or experiences are relevant to the study question. Data processing and analysis are the following steps. Processing organizes, codes and renders the data suitable for analysis. Themes are often used during data analysis to identify patterns and results reported by words such as few, some or many instead of numbers. Synthesis and interpretation of data involves the formation of a compelling story that summarizes the findings, including presentation of selected and representative data such as quotations from interviews. Ensuring the trustworthiness of study findings is an important aspect of research and common methods use for enhancing trustworthiness include triangulation and member-checking.

Aims/Objectives

To understand the main methods for data acquisition and analysis and how their selection is guided by the research question and the study methodology.

Learning Outcomes By the end of this session students will be able to:

- Describe the most common methods of data acquisition in qualitative research
- Describe the most common methods of data analysis in qualitative research
- Identify the applied methods in a published qualitative research study

Key Words

Data acquisition	Interviews	Questionnaires observations	Focus groups	Document analysis	Purposing sampling
Data processing	Trustworthiness				

Annotated Bibliography

- **Basic Sources/Material**

1. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Acad Med. 2014;89(9):1245-51.
2. Sawatsky AP, Ratelle JT, Beckman TJ. Qualitative Research Methods in Medical Education. Anesthesiology. 2019 Jul;131(1):14-22.

- **Supplementary Sources/Material**

1. Teherani A, Martimianakis T, Stenfors-Hayes T, Wadhwa A, Varpio L: Choosing a qualitative research approach. J Grad Med Educ 2015; 7:669–70Kuper A, Reeves S, Levinson W: An introduction to reading and appraising qualitative research. BMJ 2008; 337:a288.
2. Kennedy TJ, Lingard LA: Making sense of grounded theory in medical education. Med Educ 2006; 40:101–8.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 5.1

After studying the week's material, think of a research project regarding Medical Education that you would like to develop in your field of interest or expertise; write and post on the forum a research question that this project would address, explaining briefly (in 150-200 words) the background of choosing this particular question.

Recommended number of work hours for the student 17

TITLE:

CASE STUDY: QUALITATIVE RESEARCH STUDIES IN MEDICAL EDUCATION

(6th Week)

Summary

In this week, three published papers reporting the results of qualitative research studies are reviewed and analyzed.

Introductory Remarks

The following qualitative studies in the field of Medical Education are analyzed in terms of design, methodologies and methods.

- *Weller JM, Janssen AL, Merry AF, Robinson B: Interdisciplinary team interactions: A qualitative study of perceptions of team function in simulated anaesthesia crises. Med Educ 2008; 42:382–83.*
- *Bould MD, Sutherland S, Sydor DT, Naik V, Friedman Z: Residents' reluctance to challenge negative hierarchy in the operating room: A qualitative study. Can J Anaesth 2015; 62:576–86.*
- *Sawatsky AP, Zickmund SL, Berlacher K, Lesky D, Granieri R: Understanding resident learning preferences within an internal medicine noon conference lecture series: A qualitative study. J Grad Med Educ 2014; 6:32–8.*

For each study, the following questions will be addressed:

- What is the research topic?
- What is unknown about this topic and why is further research warranted?
- What is the research question?
- What is the conceptual framework used in the study?
- What is the research methodology?
- What methods of data collection have been used?
- Is the sampling method used purposing or random?
- What methods of data analysis have been used?
- What is the outcome of the study?

Aims/Objectives

To familiarize with the different steps in the design and conduct of qualitative research studies.

Learning Outcomes By the end of this session students will be able to:

- Identify the research question, conceptual framework, overarching methodology and methods in data collection and analysis in published qualitative research studies
- Be able to design a qualitative research study

Key Words

Research question	Qualitative methodology	Data acquisition	Sampling	Data analysis	Data synthesis
Data interpretation					

Annotated Bibliography

- **Basic Sources/Material**
  1. Weller JM, Janssen AL, Merry AF, Robinson B: Interdisciplinary team interactions: A qualitative study of perceptions of team function in simulated anaesthesia crises. Med Educ 2008; 42:382–83.
  2. Bould MD, Sutherland S, Sydor DT, Naik V, Friedman Z: Residents' reluctance to challenge negative hierarchy in the operating room: A qualitative study. Can J Anaesth 2015; 62:576–86.
  3. Sawatsky AP, Zickmund SL, Berlacher K, Lesky D, Granieri R: Understanding resident learning preferences within an internal medicine noon conference lecture series: A qualitative study. J Grad Med Educ 2014; 6:32–8.

- **Supplementary Sources/Material**
  1. Kuper A, Reeves S, Levinson W: An introduction to reading and appraising qualitative research. BMJ 2008; 337:a288
  2. Sawatsky AP, Ratelle JT, Beckman TJ. Qualitative Research Methods in Medical Education. Anesthesiology. 2019 Jul;131(1):14-22.
  3. Teherani A, Martimianakis T, Stenfors-Hayes T, Wadhwa A, Varpio L: Choosing a qualitative research approach. J Grad Med Educ 2015; 7:669–70.

Assignment Essay I. graded by Instructor

Design a qualitative research study on a topic of Medical Research relevant to your field of expertise or practice. Formulate the research question and describe the qualitative methodology and the methods of data collection, sampling, processing and analysis.

Recommended number of work hours for the student 20 hours

TITLE:

DESIGN OF QUANTITATIVE RESEARCH. METHODOLOGIES IN QUANTITATIVE RESEARCH

(7th Week)

Summary

Quantitative research aims at measuring the association between a predictor and an outcome, by using statistical methodology to test a specific hypothesis that describes this association. Three different research methodologies or designs are used in quantitative research including experimental, quasi-experimental and non-experimental approach. Several parameters determine the quality of a quantitative research study expressed by the internal and external validity and the reliability of the study.

Introductory Remarks

Quantitative research aims at measuring the association between a cause, exposure or predictor (e.g., a specific educational intervention), also called the independent variable, and an effect, response or outcome (e.g., students' theoretical or practical performance), also called the dependent variable. The researcher constructs a hypothesis that connects the independent and dependent variable with a possible relationship in the context of a specific target population. The so called "null hypothesis" is the hypothesis of no association between the dependent and independent variable and it is either rejected or accepted by applying statistical tests, a process called hypothesis testing. Statistical tests are used to reject or accept a null hypothesis with a certain degree of confidence that is determined by the level of statistical significance. In this regard, a type I error is the rejection of a true null hypothesis, while a type II error is the non-rejection of a false null hypothesis. A statistical analysis plan (SAP) is developed during the design of quantitative studies defining the null hypotheses that will be tested and the statistical methods that will be used for hypotheses testing. SAP also calculates the proper sample size for these specific analyses based on existing evidence.

Quantitative research methodologies or designs are classified into three main categories, experimental, quasi-experimental and non-experimental. Experimental studies, also called randomized controlled trials (RCTs), are characterized by an intervention manipulated by the researcher, a control group that is not exposed to intervention and a process of randomization. Typically, the participants are randomly allocated in two groups, the one being exposed to the intervention (independent variable) and the other not receiving the observation (control) and the two groups are compared after the intervention as per a specific effect or outcome (dependent variable). Randomization allows each participant to have an equal chance of being selected to either of the two groups, thus rendering the study results generalizable to the population of interest. When randomization is not applied, the study is characterized as quasi experimental and can be with a control group (comparison study) or without a control group (one-group study). Finally, when the researcher cannot manipulate the independent variable, the study is non-experimental, also called observational study or survey. The most common non-experimental studies include correlational studies, cross-sectional studies and longitudinal studies.

The quality of quantitative research studies in Medical Education is determined by a number of parameters such as study design, sampling process, types of data, data analysis, outcome measures. Validity and reliability are measures of research quality. Internal validity refers to the extent to which the observed results represent the truth in the studied population and not the effect of methodological errors. External validity refers to the extent to which the results of the study can be generalized to the target population. Reliability refers to how consistently a method measures a specific parameter. Tools have been developed to assess the quality of quantitative studies in Medical Education research.

Aims/Objectives

To understand the main principles and methodologies in designing a quantitative research study in Medical Education.

Learning Outcomes By the end of this session student will be able to

- Understand the different methodologies applied in qualitative Medical Education research
- Identify the applied methodology in a published qualitative research study
- Frame a null hypothesis to address a research question
- Evaluate the quality of quantitative studies in Medical Education research

Key Words

Experimental studies	Quasi experimental studies	Non-experimental studies	Randomization	Hypothesis testing	External Validity
Internal validity	Reliability	Statistical analysis plan	Sample size calculation	Type I error	Type II error
Statistical significance					

Annotated Bibliography

- **Basic Sources/Material**
  1. Ratelle JT, Sawatsky AP, Beckman TJ. Quantitative Research Methods in Medical Education. Anesthesiology. 2019 Jul;131(1):23-35.
  2. Tavakol M, Sandars J. Quantitative and qualitative methods in medical education research: AMEE Guide No 90: Part I. Med Teach. 2014 Sep;36(9):746-56. doi: 10.3109/0142159X.2014.915298.

- **Supplementary Sources/Material**

1. Cook DA, Beckman TJ: Reflections on experimental research in medical education. Adv Health Sci Educ Theory Pract 2010; 15:455–64.
2. Bordage G, Dawson B: Experimental study design and grant writing in eight steps and 28 questions. Med Educ 2003; 37:376–85.
3. Fischer K, Kesselheim JC. 23 Questions to Guide the Writing of a Quantitative Medical Education Research Proposal. Acad Med. 2020 Jul 11. doi: 10.1097/ACM.0000000000003660. Epub ahead of print.
4. Harris A, Mcgregor J, Perencevich E, Furuno J, Zhu J, Peterson D, Finkeistein J. 2006. The use and interpretation of quasi-experimental studies in medical informatics. J Am Med Inform 13:16–23.
5. Cook DA, Reed DA. Appraising the quality of medical education research methods: The Medical Education Research Study Quality Instrument and the Newcastle Ottawa Scale-Education. Acad Med 2015; 90:1067–76.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 7.1

After studying this week's material, search the literature and identify three different studies of qualitative research on Medical Education in a field of your interest or expertise. Write and post on the forum a small text on the quantitative methodology used in each of these studies and the quality of the studies.

Recommended number of work hours for the student 17 hours

TITLE:

COMPARING GROUPS OF OBSERVATIONS

(8th Week)

Summary

A significant part of quantitative research concerns the comparison of groups of intervention using statistical tests that are selected according to the type of variables involved that can be continuous numeric, ordinal numeric or categorical.

Introductory Remarks

In quantitative research, variables can be continuous numeric, ordinal numeric or categorical (a special form of categorical variables is the dichotomous variables). When comparing groups of observations, different statistical tests are required for the comparison of different forms of variables among groups of observations. The form of data distribution in continuous variables is further taken under consideration when choosing the appropriate statistical method; normally distributed variables are assessed using the so-called parametric methods while not normally distributed ones using non-parametric tests.

Statistical tests are used to reject or accept a null hypothesis with a certain degree of confidence that is determined by the level of statistical significance. The form and distribution of the dependent variable defines the required statistical tests to compare this variable among different groups of observations that are defined by an independent categorical variable.

Comparing a categorical variable among groups of observations is performed by the chi square test or the Fischer's exact test. Comparing a numeric variable between two groups of observations defined by a dichotomous variable is performed by the Student's t test for normally distributed variables and the Wilcoxon rank sum or Mann-Whitney U test for not normally distributed ones. When the two groups of data are related or paired (i.e., concern two different observations in the same subjects), these groups are compared using the paired t test or the Wilcoxon rank sum test according to whether they are normally distributed or not. Wilcoxon rank sum test is further used for the comparison of ordinal variables between two groups. Comparing a continuous variable among more than two groups of observations defined by a categorical variable is performed using Analysis of Variance (ANOVA).

Aims/Objectives

To familiarize the students with the different forms of variables in quantitative research and with the statistical tests used for the comparison of variables among groups of interventions.

Learning Outcomes By the end of this session students will learn how to

- Define the forms of variables be tested to address a specific null hypothesis.
- Describe the appropriate statistical methods needed to test specific forms of variables and specific null hypotheses
- Interpret the results of statistical tests comparing groups of observations

Key Words

Categorical variables	Dichotomous variables	Numeric variables	Parametric tests	Non-parametric tests	Chi squared test
Fischer exact test	Student's t test	Mann Whitney U test	Wilcoxon rank sum test	Paired t test	Wilcoxon signed rank test
Analysis of Variance					

Annotated Bibliography

- **Basic Sources/Material**

  B.R. Kirkwood and J.A. Sterne *Essential Medical Statistics,* Blackwell

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 8.1

After studying this week's material, search the literature and identify three different studies of qualitative research on Medical Education in a field of your interest or expertise. Write and post on the forum a small text describing the type of variables used in the main hypotheses that the studies tested and the statistical tests used for testing these hypotheses.

Recommended number of work hours for the student 17 hours

TITLE:

CORRELATION AND REGRESSION

(9th Week)

Summary

Correlation and regression are statistical methods used to characterize the relationship among variables. Correlation does not consider a specific direction in the relationship while regression treats one variable as the outcome of interest (dependent variable) and the others as predictors (independent variables).

Introductory Remarks

Correlation is a statistical tool that examines the degree or strength of association between two variables when neither of the two variable is necessarily considered as the dependent variable. The most common measures of associations between variables include the Pearson's correlation coefficient, the Spearman's rank correlation coefficient and the Kendall's correlation coefficient. The choice of the correlation coefficient depends on the type of variables. Pearson's correlation coefficient is used only for continuous variables while the Spearman's and Kendall's correlation coefficients are adopted for either ordinal or continuous variables

Regression is used to describe the relationship among different variables and subsequently use the value of a variable to predict another or make a causal inference. Regression analysis is used to model the relationship between a dependent (or outcome) variable and one or more independent (or exploratory) variables. Regression may be simple, when there is one dependent and one independent variable and multiple when there is one dependent and more that independent variables.

In linear regression analysis, a linear relationship among a continuous dependent variable and one or more independent variables that can be either continuous or categorical is characterized using the least squares regression line. In this regard, linear regression analysis aims at estimating the parameters of the equation behind the least squares line. Non-linear regression analyses are used when a linear relationship does not fit the study data. Logistic regression analysis is used to model the relationship between a categorical dependent variable and one or more independent variables that can be either continuous or categorical.

The development of a multiple regression model may require a meticulous stepwise approach to select which variables will be entered in the model out of a list of candidate independent variables. The aim is to build a model, as parsimonious as possible, that best describes the relationship under investigation.

Aims/Objectives

To familiarize the students with the concepts of correlation and regression and their application in assessing the associations among variables.

Learning Outcomes By the end of this session students will learn how to:

- Describe the appropriate statistical test needed to assess the relationships in a given set of variables
- Define the process of model building for a multiple liner or logistic regression model
- Interpret the results of main correlation and regression tests

Key Words

Pearson's correlation coefficient	Spearman's correlation coefficient	Kendall's correlation coefficient	Linear regression	Nonlinear regression	Logistic regression

Annotated Bibliography

- **Basic Sources/Material**
  1. B.R. Kirkwood and J.A. Sterne *Essential Medical Statistics*, Blackwell.

- **Supplementary Sources/Material**
  1. Renger R, Meadows LM. Use of stepwise regression in medical education research. Acad Med. 1994 Sep;69(9):738. doi: 10.1097/00001888-199409000-00019.
  2. Kühbeck F, Berberat PO, Engelhardt S, Sarikas A. Correlation of online assessment parameters with summative exam performance in undergraduate medical education of pharmacology: a prospective cohort study. BMC Med Educ. 2019 Nov 8;19(1):412. doi: 10.1186/s12909-019-1814-5.
  3. Golband F, Hosseini AF, Mojtahedzadeh R, Mirhosseini F, Bigdeli S. The correlation between effective factors of e-learning and demographic variables in a post-graduate program of virtual medical education in Tehran University of Medical Sciences. Acta Med Iran. 2014;52(11):860-4.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 9.1

Complete the following table with the correct statistical test or tests in each combination of outcome and exploratory variable.

Outcome (dependent) variable	Exploratory (independent) variable	Statistical test(s)
Continuous, normally distributed	Dichotomous	
Continuous, not normally distributed	Dichotomous	
Continuous, normally distributed, paired samples	Dichotomous	
Continuous, not normally distributed, paired samples	Dichotomous	
Continuous, normally distributed	Categorical with >2 groups	
Ordinal	Dichotomous	
Dichotomous	Dichotomous	
Continuous, normally distributed	Continuous	
Dichotomous	Continuous	

Recommended number of work hours for the student 17 hours

TITLE:

TIME-TO-EVENT ANALYSIS. LONGITUDINAL/CORRELATED DATA ANALYSIS

(10th Week)

Summary

Time-to-event data concern whether and when an event occurred, while longitudinal data involve multiple or repeated measurements for each subject. Both types of data require special statistical tests that account for their particularities.

Introductory Remarks

Time-to-event (TTE) data is applied when the outcome of interest is both *whether* or not an event occurred and *when* the event occurred. In addition to combining both the event and its time of occurrence as the outcome in the model, TTE can also handle censoring, a type of missing data that occurs when subjects exit the study without experiencing the event of interest during the duration of follow-up. TTE analysis is also called survival analysis as the event of interest is often death.

There are 4 main methodological considerations in the TTE analysis, the clear definition of the event of interest, the definition of time origin – the time point of onset of follow-up, the time scale, and the description of how participants will exit the study. Typically, there is a single target event, but some survival analyses investigate the occurrence of multiple or repeated events.

There are different types of methods for TTE analysis, non-parametric, semi-parametric and parametric. The choice of the appropriate method is driven primarily by the research question of the stud, while more than one approach may be used in the same TTE analysis. The most commonly used methods for TTE analysis in medical research is the Kaplan-Meier method, a non-parametric approach, and the Cox proportional hazards model a semi-parametric approach. The estimated survival function from the Kaplan-Meier method can be plotted as a stepwise curve against time on X axis. In the Cox proportional hazards model or Cox regression analysis, one or more independent variables are used to predict the event incidence in a manner similar to that of linear or logistic regression.

Longitudinal analysis is applied when there multiple or repeated measurements for each study participant. Such data require special statistical analyses to account for the intra-subject correlation of repeated measurements. A simple approach involves the calculation of a summary statistic to represent the repeatedly measurement with a single number for each subject, a fact that removes the correlation thus allowing for a straightforward comparison of groups with conventional statistical tests. A traditional approach involves repeated-measures ANOVA tests that however impose strong assumptions and minimal flexibility. More contemporary approaches that can accommodate a wide range of dependent/outcome variables include generalized

estimating equation (GEE) as well as mixed-effect models, multilevel models, hierarchical models, or random-effects models.

Aims/Objectives

To understand the concepts and main statistical methods used for the analysis of time-to-event data and longitudinal or correlated data.

Learning Outcomes By the end of this session student will learn how to:

- Describe the main tests used for the evaluation of time-to-event data and survival function.
- Describe the key statistical approaches to handle longitudinal or correlated data.
- Interpret the results of a time-to-event analysis and a longitudinal analysis.

Key Words

Censoring	Kaplan-Meier estimate	Log rank test	Cox proportional hazards model	General estimating equation	Mixed-effect models
Random-effect models	Multilevel models	Hierarchical models			

Annotated Bibliography

- **Basic Sources/Material**
  1. B.R. Kirkwood and J.A. Sterne *Essential Medical Statistics*, Blackwell.

- **Supplementary Sources/Material**
  1. Schober P, Vetter TR. Repeated Measures Designs and Analysis of Longitudinal Data: If at First You Do Not Succeed-Try, Try Again. Anesth Analg. 2018 Aug;127(2):569-575.

Weekly Self-Assessment & Interactive Exercises/Activities

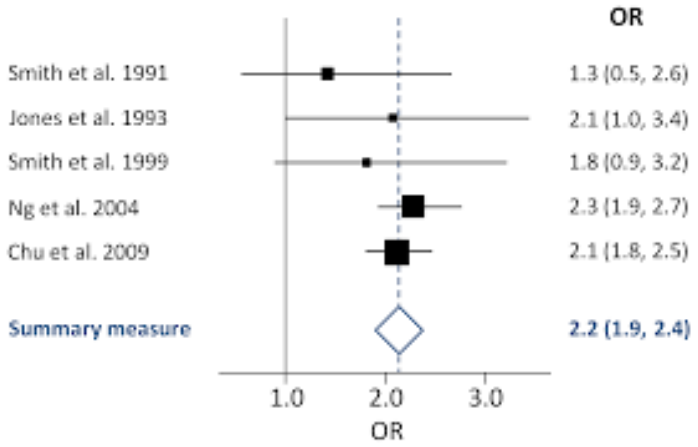
Exercise 10.1

What statistical tests and plots have yielded the graphical outcomes below:

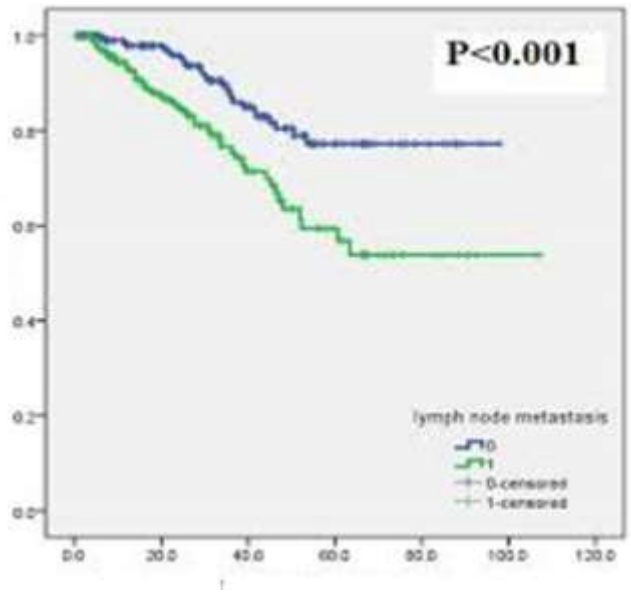
1.

	Hazard ratio	*P*-value	95% CI
Age range (elderly)	3.6	<0.001	2.3–5.8
Cardiovascular disease	8.9	<0.001	5.4–14.5
Diabetes	1.3	0.21	0.8–2.1
Hematologic disease	3.6	0.09	0.8–16.1
Neurologic disease	3.9	<0.001	1.9–7.8
Obesity	1.7	0.51	0.4–7.7
Pneumopathies	2.6	<0.001	1.4–4.7
Renal disease	0.7	0.37	0.3–1.6

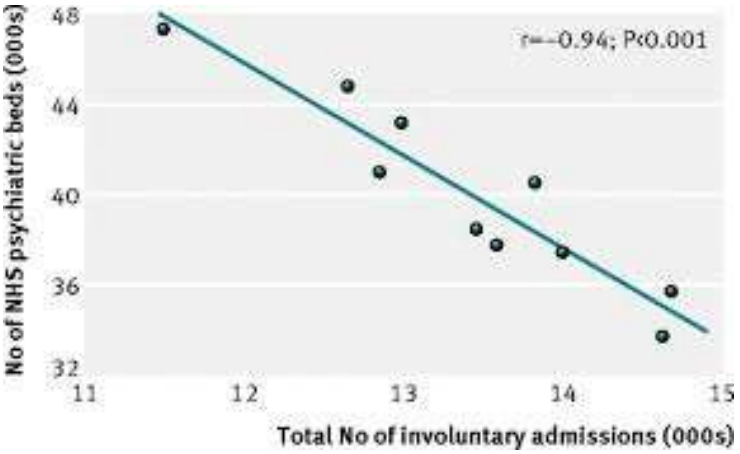
2.



3.



4.



5.

Parameter	Std error	p value	Adjusted	95% CI for OR	
			Odds ratio (OR)	Lower	Upper
Age	0.047	0.269	0.950	0.867	1.041
Sex	0.891	0.751	1.326	0.231	7.606
Alcohol drinking	1.049	0.006	17.661	2.262	137.886
Smoking	1.077	0.601	1.756	0.213	14.490
Oral contraceptives	1.054	0.277	3.146	0.398	24.644
Blood group-O	–	0.259	–	–	–
Blood group-A	0.999	0.546	1.828	0.258	12.960
Blood group-B	0.827	0.218	2.770	0.548	14.011
Blood group-AB	1.324	0.058	12.321	0.920	165.012
Elevated factor VIII	1.227	<0.001	18.754	10.246	203.036

Recommended number of work hours for the student 17 hours

TITLE:

META-ANALYSIS

(11th Week)

Summary

Systematic reviews and meta-analyses provide an objective and organized approach of combining the results of multiple studies.

Introductory Remarks

In contrast to narrative reviews, systematic reviews aim at limiting the bias associated with the collection, critical appraisal, and synthesis of multiple primary studies addressing a specific research question. Systematic review involves the comprehensive and exhaustive literature search on a specific research question, the selection of appropriate studies with specific eligibility criteria, the critical quality assessment of the studies and the synthesis of results according to a predetermined method.

A meta-analysis aims at pooling data from multiple studies, usually identified by a systematic review, and reanalyzed it with established statistical methods. The rationale for a meta-analysis is the pooling of data from multiple studies increases substantially the total sample size, thus improving the statistical power of analyses and the precision of effect estimates. A meta-analysis is performed in two stages: (i) the calculation of an effect measure, such as odds ratio (OR), relative risk (RR) or risk difference with its 95% confidence intervals for each of the primary studies; (ii) the calculation of the overall effect measure as a weighted average of the individual effect measures. The weight of each study is calculated according to the sample size (by inverse of variance, that is the square of the standard error, which is inversely related to the sample size).

Two statistical models are used for meta-analysis, the fixed-effects model, and the random-effects models. The fixed-effect model is used when the primary studies are characterized by low heterogeneity, while the random-effects model is applied in the presence of significant heterogeneity among studies. The heterogeneity is assessed by statistical tests such as the Cochran's Q test and the Higgins's I2. A further approach is the sensitivity analysis, in which both statistical models are run and it is detected how sensitive the results of each analysis are to changes in the way the analysis was performed. Meta-analyses use a specific diagram called forest plot to outline the effect measure of individuals studies and the overall effect measure.

Aims/Objectives

To understand the concept and main principles and methods of systematic review and meta-analysis.

Learning Outcomes At the end of this session students will learn how to:

- Describe the main features of systematic review and meta-analysis
- Understand the methods followed to conduct a systematic review
- Describe the main stages of a meta-analysis

Key Words

Fixed-effects model	Random-effects model	Forest plot	Heterogeneity testing	Weighted average	Sensitivity analysis

Annotated Bibliography

- **Basic Sources/Material**
  1. Tavakol M. Making sense of meta-analysis in medical education research. Int J Med Educ. 2019 Jan 30;10:29-33. doi: 10.5116/ijme.5c4d.0078. PMID: 30705248; PMCID: PMC6387777.

- **Supplementary Sources/Material**
  1. B.R. Kirkwood and J.A. Sterne *Essential Medical Statistics*, Blackwell.
  2. Akobeng AK. Understanding systematic reviews and meta-analysis. Arch Dis Child. 2005; 90(8):845-8.
  3. Zeng HL, Chen DX, Li Q, Wang XY. Effects of seminar teaching method versus lecture-based learning in medical education: A meta-analysis of randomized controlled trials. Med Teach. 2020 Dec;42(12):1343-1349. doi: 10.1080/0142159X.2020.1805100.
  4. Vallée A, Blacher J, Cariou A, Sorbets E. Blended Learning Compared to Traditional Learning in Medical Education: Systematic Review and Meta-Analysis. J Med Internet Res. 2020 Aug 10;22(8):e16504. doi: 10.2196/16504.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 11.1

After studying this week's material, search the literature and identify three different meta-analyses in a field of your interest or expertise. Write and post on the forum a small text describing the research question and the statistical methods used in each of these studies.

Recommended number of work hours for the student 17 hours

TITLE:

SOFTWARE PACKAGES FOR QUALITATIVE AND QUANTITATIVE RESEARCH

(12th Week)

Summary

Statistical software packages are long being used to perform the often complex mathematical calculations required for statistical analyses in quantitative studies and produce graphical outputs of results. Software packages are also being gradually introduced in qualitative research to assist in the organization, processing and analysis of data.

Introductory Remarks

Qualitative and quantitative research bear different features imposing distinct software support.

In qualitative research, software packages, also termed computer-assisted qualitative data analysis software (CAQDAS), such as ATLAS.ti, NVivo and others, are used to organize, categorize and store data, thus enhancing data processing and analysis. CAQDAS packages provide tools for content searching and coding, linking ability, mapping or networking, query, writing, and annotation. They perform different tasks such as transcription analysis, coding and text interpretation, recursive abstraction, content and discourse analysis, and grounded theory methodology. CAQDAS applications are increasingly being used in qualitative research but are still receiving considerable criticism. The main advantages of CAQDAS include high speed of handling a large volume of data, improvement of rigor, facilitation of team research and aid in sampling decisions. Their main disadvantages include use of word processors, narrow approaches to data analysis, and little aim in examining small data extracts usch as in some discourse analysis.

In contrast to qualitative research, quantitative research relies mainly on numerical values obtained from statistical procedures. As a result, applications, also termed statistical software, such as SPSS, Stata, R and others, are widely used to process data, perform the complex mathematic analyses required for quantitative research and produce reports in tabular or graphical formats.

Aims/Objectives.

To familiarize students with the main features of most widely used CAQDAS and statistical packages.

Learning Outcomes By the end of this session, students will learn how to:

- Describe the main features and of CAQDAS and report the main widely used packages.
- Describe the main functions of statistical software and report the main widely used packages.

Key Words

Computer-assisted qualitative data analysis software	Statistical analysis software	Data processing	Data analysis	Data storage	

Annotated Bibliography

- **Basic Sources/Material**
  1. Johnson M, Statistical Analysis Software Programs in Biomedical Research. MATER METHODS 2014;4:1282. DOI: //dx.doi.org/10.13070/mm.en.4.1282. URL: https://www.labome.com/method/Statistical-Analysis-Software-Programs-in-Biomedical-Research.html.
  2. Banner DJ, Albarrran JW. Computer-assisted qualitative data analysis software: a review. Can J Cardiovasc Nurs. 2009;19(3):24-31.

- **Supplementary Sources/Material**

  1. Cypress BS. Data Analysis Software in Qualitative Research: Preconceptions, Expectations, and Adoption. Dimens Crit Care Nurs. 2019 Jul/Aug;38(4):213-220. doi: 10.1097/DCC.0000000000000363.
  2. McLafferty E, Farley AH. Analysing qualitative research data using computer software. Nurs Times. 2006 Jun 13-19;102(24):34-6.

Assignment Essay II. graded by Instructor

Design a quantitative research study on a topic of Medical Research relevant to your field of expertise or practice. Formulate the research question and describe the study design, the inclusion/exclusion criteria and the statistical analysis plan.

Recommended number of work hours for the student 20 hours

TITLE:

ETHICAL ISSUES IN MEDICAL EDUCATION RESEARCH

(13th Week)

Summary

Ethical considerations apply to both qualitative and quantitative research, with the main aim to protect the study participants. Statements such as the Declaration of Helsinki and the Belmont Report have framed the main ethical principles of research involving humans.

Introductory Remarks

Ethical issues concern any type of research, including both qualitative and quantitative studies and should always be properly addressed by researchers.

Ethical regulations aim primarily at protecting study participants, particular vulnerable ones such as children or individuals with mental health issues,

Institutions have ethical regulations and ethics committees, also called institutional review boards (IRB), that overlook whether these regulations are followed by researchers.

The Declaration of Helsinki, developed by the World Medical Association in 1964 and amended seven times since then, is a statement of ethical principles for medical research involving human subjects.

The Belmont Report is a code of ethics, developed by the US National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research, that defined four main ethical principles of research, (i) respect for study participants (autonomy), (ii) beneficence, (iii) non-maleficence, and (iv) justice.

Aims/Objectives

To understand the ethical considerations involved in Medical Education research and with how these should be addressed.

Learning Outcomes By the end of this session, students will learn how to:

- Describe the main ethical principles of research in Medical Education
- Assess whether ethical issues are adequately addressed in research studies

Key Words

Research ethics	Belmond report	Helsinki declaration	Ethical Committee	Institutional Review Board	Beneficence
Non-maleficence	Justice	Respect of study participants			

Annotated Bibliography

- **Basic Sources/Material**

1. Mohsen Tavakol & John Sandars (2014) Quantitative and qualitative methods in medical education research: AMEE Guide No 90: Part II, Medical Teacher, 36:10, 838-848.

- **Supplementary Sources/Material**

1. Department of Health and Welfare. 1979. The Belmont report: Ethical principles and guidelines for the protection of human subjects of research, Washington, DC, OPRR Reports
2. Rothstein W, Phuong L. 2007. Ethical attitudes of nurse, physician, and unaffiliated members of institutional review boards. J Nurs Scholarship 39:75–81.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 13.1

After studying this week's material, search the literature and identify three different studies of qualitative research on Medical Education in a field of your interest or expertise. Write and post on the forum a small text (up to 500 words) on how each of these studies addressed the ethical issues related to the corresponding research project.

Recommended number of work hours for the student 17

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

(14th week)

The Final Exam represents that the student attained all the necessary knowledge and skills of the profession included in the program.

During this Program, you are entitled to complete 11 weekly self-assessments & interactive exercises and two assignments. Assignments will be graded by the Instructor.

Assignments holds 20 points per each.

Final Exam include an MCQ paper which will have 15 questions with provided four answers per each, where all sessions will be covered. All answers must to be marked as True (T) or False (F). The minimum to pass is 70%. Incorrect answers will not have addition of negative points. Time to complete the MCQ is 15 minutes.

MCQ holds 10 points.

Recommended number of work hours for the student 20 hours.

INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

Title: Ontology-Epistemology-Methodology

(1st Week)

Exercise 1.1

Please use this figure as a guide to formulate your answer

Subjective approach		*Objective approach*
Nominalism	← Ontology →	Realism
Anti-positivism	← Epistemology →	Positivism
Voluntarism	← Human nature →	Determinism
Ideographic	← Methodology →	Assertions/abstract, general, or universal laws

Source: Taken from Burrell and Morgan (1979)

Title: Formulating a research question. Conceptual frameworks in Medical Education

(2nd Week)

Exercise 2.1

The following steps will guide you through this week's assignments:

- Identify 3 different research papers in the field of Medical Education in the PubMed database using proper keywords.
- Study the papers and identify the purpose of the study and try to formulate the research question addressed by each one of the studies, if the question is not clearly stated in the text.

Title: Research approaches: Qualitative versus quantitative

(3rd Week)

Exercise 3.1

Please use this figure as a guide to formulate your answer

	Quantitative	Qualitative
Epistemology	Objectivism	Constructivism
Theories of knowledge	Positivism, postpositivism	Postmodernism, interactionism, critical theory, *etc.*
Objectives	Correlations, cause and effect, deductive, theory testing	Understanding of individual and context, inductive, theory building
Questions	What? Why (cause)? How (mechanism)?	Why (explanation)? How (process)?
Methodologies	Experimental or quasi-experimental	Grounded theory, ethnography, phenomenology
Methods	RCTs, surveys, statistical analysis	Observations, interviews, focus groups, narratives, *etc.*
Researcher	Detached, unbiased, "blinding"	Situated, influences research analysis, "reflexivity"

Title: Design of qualitative research. Methodologies in qualitative research

(4th Week)

Exercise 4.1.

The following steps will guide you through this week's assignments:

- Identify 2 different research papers in the field of Medical Education in the PubMed database using proper keywords;
- Study the papers and identify the steps in study design. The following questions will guide you during your study:
  - What is the research topic?
  - What is unknown about this topic and why is further research warranted?
  - What is the research question?
  - What is the conceptual framework used in the study?
  - What is the research methodology?
  - What methods of data collection have been used?
  - Is the sampling method used purposing or random?
  - What methods of data analysis have been used?
  - What is the outcome of the study?
  - Were all the steps of study design defined in the manuscript?

Title: Methods in qualitative research

(5th Week)

Exercise 5.1

The following steps will guide you through this week's exercise.

- Search the literature to identify unanswered questions or open issues regarding a topic of Medical Education in your field of interest or expertise.
- Formulate a research question that addresses one of the above an answered questions or open issues.
- Explain briefly your choice of this particular question by responding to the following questions:
    - What is unknown about the topic?
    - Why is further research warranted?

Title: Case study: qualitative research studies in medical education

(6th Week)

Assignment Essay I. graded by Instructor

Title: Design of quantitative research. Methodologies in quantitative research.

(7th Week)

Exercise 7.1

The following steps will guide you through this week's exercise.

- Search the PubMed database to find three published papers a topic of Medical Education in your field of interest or expertise.
- Identify the quantitative methodology of each of the three studies, choosing among experimental, quasi experimental and non-experimental design.
- Use the following instrument to assess the quality of each of the three studies:

Table 5. The Medical Education Research Study Quality Instrument for Evaluating the Quality of Medical Education Research

MERSQI Domain*	MERSQI Items	MERSQI Score†	Comments‡
Study design	Single-group cross-sectional or single group posttest only	1	• Cross-sectional: Study of a single group at one point in time • Nonrandomized two-group: An intervention applied to two separate groups of subjects, who are not randomly assigned
	Single-group pretest and posttest	1.5	
	Nonrandomized, two-group	2	
	Randomized controlled trial	3	
Sampling: Number of institutions studied	1	0.5	• An institution is a separate medical center (*e.g.*, two hospitals within the same academic medical center would *not* be considered separate institutions)
	2	1	
	> 2	1.5	
Sampling: Response rate (%)	Not applicable		• Response rate is the proportion of eligible participants who completed the survey, posttest, *etc.* • For intervention studies, this is the proportion of enrolled participants who completed the intervention • For studies in which there is >1 response rate (*e.g.*, pretest and posttest completions), use the score for the highest response rate
	< 50 or not reported	0.5	
	50–74	1	
	≥ 75	1.5	
Type of data	Assessment by study participant	1	• Observer ratings are considered anything other than assessment by the study subject.
	Objective measurement	3	
Validity evidence for evaluation instrument scores	Not applicable		• Content evidence includes theory, literature, expert opinions, and previous instruments that were used to create the instrument • Internal structure evidence includes reliability (*e.g.*, internal consistency, interrater, test–retest), and measures of dimensionality (*e.g.*, factor analysis) • Relations to other variables evidence includes correlation with other variables that represent similar constructs (concordant) or dissimilar constructs (discordant) • Use "not applicable" only if the study does not measure a psychologic construct
	Content	1	
	Internal structure	1	
	Relationships to other variables	1	
Data analysis: Complexity	Descriptive analysis only	1	• Descriptive analyses include frequency, mean, and median • Any test of statistical inference involving associations or comparisons is considered "beyond descriptive"
	Beyond descriptive analysis	2	
Data analysis: Appropriateness	Data analysis inappropriate for study design and type of data	0	• Considered "inappropriate" if there is a flaw in the analysis that invalidates the results
	Data analysis appropriate for study design and type of data	1	
Outcomes	Satisfaction, attitudes, perceptions, opinions, general facts	1	• General facts include participant characteristics and basic data such as instrument score reliability • Behaviors are actions that occur in real-life practice
	Knowledge, skills	1.5	
	Behaviors	2	
	Patient/healthcare outcomes	3	

*The Medical Education Research Study Quality Instrument (MERSQI) has six domains: Study Design, Sampling, Type of Data, Validity Evidence, Data Analysis, and Outcomes. †The maximum score within each MERSQI domain is 3 and the maximum total score is 18. ‡Comments regarding the MERSQI are intended to provide guidance on how to interpret MERSQI domains and items; for more information on the scoring of specific MERSQI items, please see Reed *et al.*, 2007[21]; adapted with permission from Cook and Reed, 2015.[39]

Title: Comparing groups of observations

(8th Week)

Exercise 8.1

The following steps will guide you through this week's exercise.

- Search the PubMed database and identify three published papers a topic of Medical Education in your field of interest or expertise.
- Read the studies carefully.
- Identify the main hypothesis or hypotheses tested by each study and define the type of variables involved.

- Reflect on what statistical tests are needed to perform the analysis of the variables define by the hypotheses. Look at the paragraph on statistical analysis in the Methods section to check whether you defined the statistical tests correctly.

Title: Correlation and Regression

(9th Week)

Exercise 9.1

Check your answers in the following table.

Outcome (dependent) variable	Exploratory (independent) variable	Statistical test
Continuous, normally distributed	Dichotomous	Student's t test
Continuous, not normally distributed	Dichotomous	Wilcoxon rank sum test or Mann Whitney U test
Continuous, normally distributed, paired samples	Dichotomous	Paired t test
Continuous, not normally distributed, paired samples	Dichotomous	Wilcoxon signed rank test
Continuous, normally distributed	Categorical with >2 groups	ANOVA
Ordinal	Dichotomous	Wilcoxon signed rank test
Dichotomous	Dichotomous	Chi square or Fischer's exact test; logistic regression
Continuous, normally distributed	Continuous	Pearson' correlation
Dichotomous	Continuous	Logistic regression

Title: Time-to-event analysis. Longitudinal/correlated data analysis

(10th Week)

Exercise 10.1

Select your answers from the following options:

- Meta-analysis, Forest plot
- Logistic regression
- Cox regression
- Pearson's correlation
- Kaplan-Meier, log rank test

Title: Meta-Analysis

(11th Week)

Exercise 11.1

The following steps will guide you through this week's exercise.

- Search the PubMed database and identify three published meta-analyses a topic in your field of interest or expertise.
- Read the studies carefully.
- Identify the research question of each study by studying its purpose.
- Study the paragraph on statistical analysis in the Methods section, the Results section and the Tables and graphical outputs to understand the statistical methods used and how the corresponding results are presented.

Title: Software packages for qualitative and quantitative research

(12th Week)

Assignment Essay I. graded by Instructor

Title: Ethical issues in medical education research

(13th Week)

Exercise 13.1

The following steps will guide you through this week's exercise.

- Search the literature to identify unanswered questions or open issues regarding a topic of Medical Education in your field of interest or expertise.
- Search in the Methods section for statements on ethical issues and such as consent from study participants, permissions from ethics committees or review boards and think whether there are additional ethical concerns not addressed by the authors.

FINAL EXAM

(14th Week)

Once you have completed all the necessary coursework and finished the internship you will be requested to meet with a committee to pass the final exam and defend your thesis work in two separate occasions. The exact dates will be announced by the Dean's office and by the host department. Students have to register for the final exam until the given deadline every year.

The final exam is a composed by the following: multiple choice questionnaire (MCQ), two essay assignments.

Please note: The following questions, essay tasks, and case scenarios are provided here are not to be used or reproduced for any purpose.

The MCQ have 15 questions with provided four answers per each, where all sessions are covered. All answers must to be marked as True (T) or False (F). The minimum to pass is 70%. Incorrect answers will not have addition of negative points. Time to complete the MCQ is 15 minutes.

MCQ holds 10 points

Samples for MCQ

1. Which of the following is a type of computer-assisted learning (CAL)

T	A	Simulation
T	B	Tutorial
F	C	Study Guides
T	D	Both A and B

2. Personal Digital Assistants can be used for:

T	A	Medical monitoring
T	B	Fitness
T	C	Navigation
T	D	Data processing

3. Gaming engagement factors are:

F	A	Affective
T	B	Relational
T	C	Behavioral

T	D	Cognitive

4. Simulations are defined as

T	A	an “approximations to reality that require trainees to react to problems or conditions as they would under genuine circumstances”
F	B	a real time and safe platform to indeterminate the critical actions enacted which represented the characteristics of clinical judgement
T	C	"simulation's ability to address skillful device handling as well as purposive aspects of technology provides a potential for effective and efficient learning."
F	D	an exact imitation of the operation of a process or system, that represents its operation over time

5. Examples of common medical simulators used for training are

T	A	Team Training Suite
T	B	Advance Life Support Simulator
T	C	Partial Human Patient Simulator
T	D	Pure Software Simulation

6. High-fidelity simulation enhance

F	A	Verbal communication skills
T	B	Critical thinking
T	C	Teamwork skills
T	D	Crisis management skills

7. Wearable technology disadvantages are

T	A	Misleading symptoms
F	B	Continuous monitoring
T	C	High costs
T	D	Ethical and privacy issues

8. The elements of metacognition are

T	A	Person variables
T	B	Task variables
T	C	Strategy variables
F	D	Static variables

9. To apply metacognitive strategies, we need

F	A	To tell to the learners what to do
T	B	To set tasks at an appropriate level of difficulty
T	C	Educators should take care not to do the thinking for learners
F	D	To suppress strategic thinking

10. Successful educational strategy includes the phases of

F	A	Planning
T	B	Monitoring

T	C	Evaluating
F	D	To suppress critical thinking

11. Some of the characteristics of an active learning environment are

T	A	Creating atmosphere suitable for collaborative learning for building knowledgeable learning communities.
T	B	Integration of prior with new knowledge to incur a rich structure of knowledge among the students.
T	C	Encouraging leadership skills of the students through self-development activities
F	D	Task-based performances are not advised

12. Dynamic learning could be described as

T	A	Purposive: the relevance of the task to the students' concerns.
T	B	Reflective: students' reflection on the meaning of what is learned.
T	C	Complex: students compare learning tasks with complexities existing in real life and making reflective analysis.
T	D	Critical: students appreciate different ways and means of learning the content.

13. To create Personal Learning Environment (PLE) we need to

T	A	Decide on upon areas of focus
F	B	Web tools are less important
T	C	Establish time each week to developing the PLE.
T	D	Create a diagram for PLE

14. The benefits of collaborative learning are

T	A	Individual
F	B	Institutional
T	C	Organizational
F	D	A and C are irrelevant

15. Some of the disadvantages for using e spaces in medical education goes for

T	A	Limited feedback
T	B	Lack of time management
T	C	Human interaction is missing
T	D	Social distancing

Assignment Essay I.

Present your “What have you discussed so far related to computer-assisted learning and medical applications? Reflect on what are the safe benefits and drawbacks are in medicine and medical education” Essay. (max 60 minutes)

Assignment Essay II.

Present your “Compare and contrast dynamic and static learning space” Essay. (max 60 minutes)

The Final Examination Committee will ask further questions related to the topics.

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE620-Learning in Medicine: Infrastructure and Technologies

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE620-Learning in Medicine: Infrastructure and Technologies**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☒	Elective ☐	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (25%)		
Assessment	Assignments	Final Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Violetta Raffay
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING: INTRODUCTION

Programme Presentation

- **Short description & objectives:** Medical education is rapidly changing, influenced by many factors including the changing health care environment, the changing role of the physician, altered societal expectations, rapidly changing medical science, and the diversity of pedagogical techniques. Changes in societal expectations put patient safety in the forefront and raises the ethical issues of learning interactions and procedures on live patients, with the long-standing teaching method of "see one, do one, teach one" considered as no longer acceptable. The educational goals of using technology in medical education include facilitating basic knowledge acquisition, improving decision making, enhancement of perceptual variation, improving skill coordination, practicing for rare or critical events, learning team training, and improving psychomotor skills. Different technologies can address these goals. The students will develop the critical ability to flexibly use the spaces and the technologies to enhance student learning.

Presentation of the Course through the Study Guide

Short description & objectives: The course aims at sensitizing potential educators in the critical analysis and effective understanding of the potential of existing learning spaces and provide guidance on how physical learning spaces are aligned with the curriculum. It will also initiate the concept of e spaces as learning environments and will enable students to effectively use these spaces as learning environments. The course aims at the development of students' deep understanding of the use of technologies and learning spaces in medical education.

- Effective use and design of CALs
- Effective use and limitations of PDAs
- Use of Digital or "Serious games" in the delivery of curriculum
- Use of task trainers (simple or virtual) for the acquisition of skills
- Creation and effective delivery of complex simulation scenarios in Medical Education
- Definition of a dynamic learning space
- Definition and limitations of e spaces

-

Recommended student work time

Approximately 17 hours (including the study of the Guide)

TITLE:

Conceptions of learning in medical education

(1st Week)

Summary Educational systems requires interactions between teachers, learners and the learning materials. Researches shown that teachers and learners will approach teaching and learning in different ways, indicating numerous beliefs or conceptions about the educational processes. From the teachers point of view, this will influence how they will teach and assess.

Introductory Remarks There is a discrepancy between the obtainable extensive range of the available and offered learning theories in the wider education literature in comparison of a narrow range of theories focused on medical education literature. Learning models of distributed knowledge, learning through time and space, the complexity of learning environments, and the interactions between educators to students, students to students, and students to learning materials have impact on learning conceptions in medical education. There is a continuous exploration and development of variety of testable models of learning with aim to combine the practice context with purposeful theories for such practice, as these theories should be testable in practice. Conceptions of learning in medical education are facing transformations in aspect of the changing nature of the healthcare providing system. In the same time, this involves evidence-based practice, personalized medical care and learning with the use of advanced technologies with aim to achieve the most efficient outcomes on students learning, performances and professional competences. The medical education community continuously evaluate, design and redesign the processes of teaching and learning practices. The advances in cognitive and learning sciences theories, will introduce to medical educators best teaching and learning practices including their impact on the evaluation process.

Aims/Objectives Designing a faculty development program is always a huge challenge. Medical education did not “took away” by default the already existing learning theories, but significantly contributed in designing and implementing a new “problem-solving” learning concept. The concept map (conceptual diagram) was developed as a tool to organize knowledge and as a way to represent it to oneself and for others as aiming to create meaningful learning in medical education. Broadening the conceptions of learning in medical education, more and more testable models are in front of us.

Learning Outcomes By the end of this session student will learn how to

- Understand the conceptions of learning in medical education
- Understand the use of concept maps in medical education
- Understand metacognitive processes
- Be able to compare diverse learning conceptions
- Analyze different learning models

Key Words

Medical education	Constructivism	Problem-based learning	Interdisciplinarity	Learning theories	Adult learning

Annotated Bibliography

- **Basic Sources/Material**

1. Pacifico JL, Donkers J, Jacobs J, van der Vleuten C, Heeneman S. Understanding teaching and learning conceptions among clinical faculty as a means to improve postgraduate training. Int J Med Educ. 2020 Aug 28;11:175-185. doi: 10.5116/ijme.5f2a.76eb. PMID: 32857063.
2. Bleakley A. Broadening conceptions of learning in medical education: the message from teamworking. Med Educ. 2006 Feb;40(2):150-7. doi: 10.1111/j.1365-2929.2005.02371.x. PMID: 16451243.
3. Guile D, Young M. Apprenticeship as a conceptual basis for a social theory of learning. In: C Paechter, M Preedy, D Scott, J Soler, eds. *Knowledge, Power and Learning*. London: Paul Chapman 2001; 56– 73 .
4. Regehr G. Trends in medical education research. *Acad Med* 2004; **79**: 939– 47.
5. Daley B, Durning S, Torre D, 2016, 'Using Concept Maps to Create Meaningful Learning in Medical Education ', MedEdPublish, 5, [1], 19, https://doi.org/10.15694/mep.2016.000019

- **Supplementary Sources/Material**

1. Jacobs JC, van Luijk SJ, van der Vleuten CP, Kusurkar RA, Croiset G, Scheele F. Teachers' conceptions of learning and teaching in student-centred medical curricula: the impact of context and personal characteristics. BMC Med Educ. 2016 Sep 21;16(1):244. doi: 10.1186/s12909-016-0767-1. PMID: 27653777; PMCID: PMC5031323.
2. Chiu YC, Liang JC, Hsu HY, Chu TS, Lin KH, Chen YY, Tsai CC. To examine the associations between medical students' conceptions of learning, strategies to learning, and learning outcome in a medical humanities course. BMC Med Educ. 2019

Nov 8;19(1):410. doi: 10.1186/s12909-019-1856-8. PMID: 31703743; PMCID: PMC6839142.
3. Hendry GD, Lyon PM, Prosser M, Sze D. Conceptions of problem-based learning: the perspectives of students entering a problem-based medical program. Med Teach. 2006 Sep;28(6):573-5. doi: 10.1080/01421590600878150. PMID: 17074711.

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 1.1 Reflect and contrast dynamicist and connectionist thinking as learning concepts in medical education.
Post your answers of 300 words in a Talk Forum**.**

Exercise 1.2 Comment on your fellow classmates' posts, at least THREE of them

Recommended number of work hours for the student 17 hours

TITLE:

Computer technologies in learning

(2nd Week)

Summary The computer assisted learning is a systematic control of instruction by computer is characterized by testing, diagnostic learning, presentation and through record keeping. It is often defined as a learning environment in which though the use of computer technology, where learner receives, reacts to, and interacts with instructional material prepared by an instruction specialist.

Introductory Remarks Computer-assisted instruction (CAI) and computer assisted learning (CAL) is an approach in teaching and learning in which computer technology is used as an aid to the presentation, reinforcement and assessment of material to be learned, and usually include substantial interactive elements. Some of numerous advantages of the computer assisted learning are supported by the facts that educators land departments are keen and prepared to introduce a wide range of computer based applications in their teaching framework by planned, structured and coordinated development. Its use provides convenience and flexibility, as courses supported by CAL applications reduce the need for face-to-face lectures, seminars and workshops. Computer presentation is atmost suited to subjects that are detail oriented, visually intensive, or difficult to conceptualise, like microscopic images or complex biological processes. It enhances personalised learning, as students' will progress at their preferred pace. Learners can repeat, interrupt, and resume at will, which may have particular advantages for less strong students, In the same time it does have an impact of creation of learning communities among students with certain competitive advantages. Computer-assisted learning has a particular role to play in supplementing clinical experience in order to maximise learners' opportunities to acquire clinical recognition skills.
Computer-assisted learning may expand pedagogical horizons, and to strengthen links between students, educators, knowledge, skills and curricula.

Aims/Objectives to examine the effective use of computer-assisted learning (CAL), which utilises interactive multimedia-based teaching strategies, positively enhances the acquisition of selected clinical recognition skills by the medical students

Learning Outcomes by the end of this session students will be able to:

- Create and use interactive online teaching materials and tools
- Identify advantages and disadvantages of CAL

Key Words

Computer assisted learning	Teaching methods	Distance learning	Interactive multimedia	Cognitive learning	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. McGaghie WC, Siddall VJ, Mazmanian PE, Myers J; American College of Chest Physicians Health and Science Policy Committee. Lessons for continuing medical education from simulation research in undergraduate and graduate medical education: effectiveness of continuing medical education: American College of Chest Physicians Evidence-Based Educational Guidelines. Chest. 2009 Mar;135(3 Suppl):62S-68S. doi: 10.1378/chest.08-2521. PMID: 19265078.
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3. Holt RI, Miklaszewicz P, Cranston IC, Russell-Jones D, Rees PJ, Sönksen PH. Computer assisted learning is an effective way of teaching endocrinology. Clin Endocrinol (Oxf). 2001 Oct;55(4):537-42. doi: 10.1046/j.1365-2265.2001.01346.x. PMID: 11678838.
4. Nicklen P, Keating JL, Paynter S, Storr M, Maloney S. Remote-online case-based learning: A comparison of remote-online and face-to-face, case-based learning - a randomized controlled trial. Educ Health (Abingdon). 2016 Sep-Dec;29(3):195-202. doi: 10.4103/1357-6283.204213. PMID: 28406103.

- **Supplementary Sources/Material**

1. Blair C. Educating executive function. Wiley Interdiscip Rev Cogn Sci. 2017 Jan;8(1-2):10.1002/wcs.1403. doi: 10.1002/wcs.1403. Epub 2016 Dec 1. PMID: 27906522; PMCID: PMC5182118.
2. Sinclair P, Kable A, Levett-Jones T. The effectiveness of internet-based e-learning on clinician behavior and patient outcomes: a systematic review protocol. JBI Database System Rev Implement Rep. 2015 Jan;13(1):52-64. doi: 10.11124/jbisrir-2015-1919. PMID: 26447007.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 2. Each one of you will be allocated to a different instructor teaching one of the preclinical courses (Anatomy, Histology, Physiology, Pharmacology, Pathophysiology, Semiology). The instructor will provide the relevant topic. You will need to create an online CAL activity as a lesson plan and then deliver it under supervision to the students. The session will be recorded for future use.

Recommended number of work hours for the student 17 hours

TITLE:

Effective Computer Aided Learning

(3rd Week)

Summary The introduction of CAL resources into health science curricula has achieved partial acceptance by educators and students. Opinions may differ as to whether there is sufficient research evidence to confirm a positive pedagogical effect.
CAL includes the delivery of known and institution-accredited standards of education, provide means of surmounting the difficulties of scheduling attendances at lecture sessions and clinical teaching meetings, offers up to date knowledge, with additional ability to assess the retention of both new and previously understood principles, and enhance the drive to acquire new knowledge by virtue of the stimulating medium by which it is delivered.

Introductory Remarks The use of interactive multimedia-based computer-aided learning technique is a method to supplement, and even replace, certain aspects of traditional teaching. Computer Aided Learning is an integrative technology, which describes an educational environment where a computer program is used to assist the user in learning a particular subject. It refers to an overall integrated approach of instructional methods. Computer aided learning is a device/learning strategy to make teaching more interesting joyful and sustainable, does have influence to develop interest in learning concepts, and to enhance students' achievement level.
Computer-assisted learning have an extensive use in problem-based curricula, supplementing the tutorials, and replacing lectures. There is still a lack of evidence in comparing CAL with traditional teaching resources, as such data was mostly based on questionnaire and student opinion. In other hand, there is evidence that under clinical settings, CAL produce effectiveness in area of clinical simulations and in its provided materials. The value of CAL is a bit less certain, mostly in starting years of medical education where the curricula don't have strong connection between basic science and clinical features at the courses.
Features of computer-aided learning include its ability to: allow interaction with the courseware material, cater for individualised instruction, reduce tutor resources, be easily modified to fit local practice, be readily updated and expanded, and be consistently reliable. Also, CAL may offer certain cost benefits.

Aims/Objectives to examine the effective use of computer-assisted learning (CAL), which utilises interactive multimedia-based teaching strategies, positively enhances the acquisition of selected clinical recognition skills by the medical students

Learning Outcomes by the end of this session students will be able to:

- devise efficient and effective CAL
- identify intended learning outcomes by using CAL
- presentation the content in a structured way and instant feedback and reinforcement to their learners

Key Words

Computer assisted learning	Teaching methods	Distance learning	Interactive multimedia	Learning spaces	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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- **Supplementary Sources/Material**

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 3. Watch one recording other than yours from the previous week and in a post of 700 words excluding references suggest possible areas of strengths and improvements from your classmates' recordings. Post your answer to the discussion forum

Recommended number of work hours for the student 17 hours

TITLE:

Medical applications

(4th Week)

Summary Medical applications (apps), as one of many Personal Digital Assistants (PDA) are in use worldwide for smart phones and tablet computers. Their use is growing in number and are commonly used in healthcare. Medical apps for many purposes are available, including ones for electronic prescribing, diagnosis and treatment, practice management, coding and billing, and CME or e-learning. The use of medical apps has become widespread.

Introductory Remarks Applications are software programs that are developed to run on a computer or mobile device to accomplish a specific purpose, and could serve as useful tool. The ability to download medical apps on mobile devices has made a wealth of mobile clinical resources available to healthcare professionals.

Mobile revolution in healthcare brings along entirely novel risks and challenges that are a matter of debate and that need to be carefully addressed. Examples are the so-called "digital divide," which could exacerbate health inequalities among different populations, attrition and increased dropout in clinical studies compared to conventional protocols, and the prominent issue of guaranteeing evidence base, validation, and quality and effectiveness of mobile technology and applications. Main characteristics related to their design and implementation are mostly focused to reach the end-users, due to communication access to population and subgroups; the availability of specific apps, due to increasing smartphone functionality, capabilities, and sensors incorporated; the wireless broadband internet access which increase communication speed and the device connectivity; and technology connected to individuals due to increased capabilities of locating, data measuring, monitoring function, and communicating with others. The variety of uses of mobile applications and devices is extensive and it is supported by growing evidence. In terms of categories, the medical apps can be classified into general solutions for medical providers at all levels with the examples of medical education materials, drug-referencing tools, clinical decision-support tools, electronic health-records systems, their access; as well apps for medical education, teaching, and learning; tools for telemedicine and healthcare; apps and/or wearables for patients and the general public with different functions; and certain specialty- or disease-specific apps. Related to the wide spectrum of specialties and disease groups, numerous examples are available in the literature, such as cardiology, diabetes, emergency medicine, nutrition, mental health, etc. Inline with many opportunities and benefits that medical apps may provide in areas of healthcare-related settings and environment, there are also certain disadvantages and potential risks that we need to consider as important and to be able to appoint such.

Aims/Objectives Healthcare professionals use medical devices and apps for many purposes, most of which can be grouped in five broad categories: administration, health record maintenance and access, communications and consulting, reference and information gathering, and medical education. Mobile devices play an increasingly important role in medical education as students and schools use more technology during training, where this course will be focused to.

Learning Outcomes By the end of this session students will be able to

- Be able to identify the advantages of the use Medical apps
- Understand the benefits provided by PDA's
- Analyze and discuss the use of Medical apps in medical education

Key Words

Medical apps	Personal Digital Assistants	Mobile devices	App benefits	App support	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Hsieh MC, Lin YH. [VR and AR Applications in Medical Practice and Education]. Hu Li Za Zhi. 2017 Dec;64(6):12-18. Chinese. doi: 10.6224/JN.000078. PMID: 29164542.
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- **Supplementary Sources/Material**

1. Shi CR, Rana J, Burgin S. Co-teaching: applications in medical education. Clin Teach. 2018 Aug;15(4):341-343. doi: 10.1111/tct.12709. Epub 2017 Oct 3. PMID: 28971589.
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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 4. This will be team assignment accounting for 25% of the total assignment grade. Reflect on your personal experience using Medical Applications in your own Healthcare Setting. Each group will present a collective reflection of either positive or negative experiences. The subgroup allocations will be listed and available at the discussion forum.

Recommended number of work hours for the student 17 hours

TITLE:

Personal Digital Assistants

(5th Week)

Summary Mobile technologies have been studied since the '90's of the past millennium, their specific value in support-ing work-based learning is continuously investigated. Medical applications (apps), as one of many Personal Digital Assistants (PDA) are in use worldwide for smart phones and tablet computers. Their use is growing in number and are commonly used in healthcare, not only by healthcare professionals, but from the patients' side as well.

Introductory Remarks Personal digital assistants (PDAs) are among the latest gadgets that thousands of tech-savvy users want to use and own. They do carry potential benefits like quicker facilitation of information, patient empowerment and inclusion of undersupplied population groups, and these are some one of the advantages, however, the limitations are also need to be emphasized as they have outstanding importance, where data privacy and security plays significant role. The increased use of mobile technologies contributed to the use of PDAs by students and healthcare professionals. PDAs are frequently described as tools for organizing and structuring personal diaries and workflow. Students find PDAs as an effective administration tools to help managing their day-to-day activities, like incorporating calendars, and task managers. PDAs may serve as a device for facilitating learning during work. The value of mobile devices in supporting work-based learning could provide support for the user to continuously diagnose and choose the kind of support they need. In this case, studies describe a requirement for certain student self-regulation, where they have should determine themselves when they need help or additional information to conduct a certain task. Literature mention that mobile devices offer four types of support for conducting daily work: searching for information, taking notes, recording data, and communicating with others. PDA allows access to an integrative set of resources when and where it is needed, it can turn current work-based learning processes during work into a more situated responsive and reflective process. As well, PDAs, with the capabilities to log actions, save notes, and record data, might be useful for revisiting questions, reflections, and recordings by supervisors during educational processes. This could enhance work-based learning outside of the work context. The data stored on PDAs can provide material to be used in educational settings; when one can discuss with educators and peers certain questions and topics occurred during work, however, this might require certain working-routine modifications. PDAs have the capability to allow continuous access to resources for situation-based, interactive, and reflective learning during work, while also allow integration of patients' data, questions and reflections for learning after, based on work.

Aims/Objectives This session aims to appoint the particular value of mobile technologies in supporting work-based learning. Often, internships don't incorporate work-based learning as the complexity and intensity of the work needs to be performed are extensive. PDAs could contribute to facilitate work-based learning when they are purposefully used between college and working practices. Despite the availability of medical apps, the acceptance of them among healthcare providers is still found moderate to low, what could represent a substantial problem, as healthcare professionals are important gate keepers for intervention insight. The potential risks of medical apps use will be overviewed, like low responsiveness towards critical situations (e.g. self-harm) or the difficulty for users to assess the quality of the app's content.

Learning Outcomes By the end of this session students will be able to:

- Understand the advantages of PDA's in course creation
- Understand the limitations of medical apps
- Understand the most appropriate use of such applications
- Be able to incorporate personal digital assistants in courses
- Distinguish advantages and disadvantages of PDA's

Key Words

Personal Digital Assistants	Mobile devices	PDA's limitations	App support	Self-monitoring	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Kyaw BM, Posadzki P, Paddock S, Car J, Campbell J, Tudor Car L. Effectiveness of Digital Education on Communication Skills Among Medical Students: Systematic Review and Meta-Analysis by the Digital Health Education Collaboration. J Med

Internet Res. 2019 Aug 27;21(8):e12967. doi: 10.2196/12967. PMID: 31456579; PMCID: PMC6764329.
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- **Supplementary Sources/Material**

1. Bertling CJ, Simpson DE, Hayes AM, Torre D, Brown DL, Schubot DB. Personal digital assistants herald new approaches to teaching and evaluation in medical education. WMJ. 2003;102(2):46-50. PMID: 12754909.
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Assignment Essay I. graded by Instructor

What have you discussed so far related to computer-assisted learning and medical applications? Reflect on what are the safe benefits and drawbacks are in medicine and medical education.

Submit a written paper of 3000 words, references excluded

Recommended number of work hours for the student 20 hours

TITLE:
Digital games in teaching

(6th Week)

Summary The purpose of the present session is to introduce the accessible way of computer-based learning as one of the digital tools in teaching. The permanently changing learning needs come into focus year by year, however, higher education institutions kept the conceptual skills and educational gaming on a low level for a long time. Most probably, the very high costs of constructing and creating such digital games contributed to this.

Introductory Remarks The use of digital games could motivate both, teaching and learning, when they are meaningful and carefully designed. In healthcare professionals education, digital games are acknowledged as games, simulations, simulated games, virtual environments, social and cooperative plays, and also as alternative reality games. The educational games are engaging, motivating, pleasurable and competitive activity. The specified sets of rules, regulations and feedback elements, the challenge, and the interaction have impact on promoting teaching and learning. A digital educational game have numerous advantages as a teaching tool, it is feasible for adult learning, also providing opportunities for experiential repetitive learning. As well, engaging learners will enhance the acquisition of knowledge, the attitude, and practice. Digital games allows learners' individualization, may improve learning process and learning outcomes, and also provides practical benefits for both, educators and learners. The use of digital educational games provides safe virtual curricular and extracurricular educational space besides traditional teaching and learning contexts with more collaboration tools between educators and students. Overall, the advantages of digital educational games care recognized as learning process enhancers, learning and performance improvers, and also individualized learning providers. The positive educational advantages over traditional teaching methods and the possibilities provided for different preferred learning styles of learners, the findings on pedagogical applications are not conclusive in the literature.

Related to the disadvantages, literature report that they are related to teaching-learning process barriers and logistics of educational games . The teaching-learning process barriers are related to perception of a digital game as threatening and intimidating, to the learning style dependency, to the potential boredom, and to the negative reaction of learners to the game, while the logistics-related barriers appoints to interdisciplinary expert and participant dependency, lack of widely accepted guidelines, required training, cost and time.

When a digital game is perceived as a valuable way to learn then it will be followed by increased interest to use it in enhancing learning experience.

Aims/Objectives The introduction of the digital games in teaching process by emphasizing all challenges that makes their use in teaching process educationally suitable, attractive and interactive. Requires skills with an attainable goal and known rules, complete absorption in the activity, defined by clear goals, providing immediate feedback, focused on the task in hand, enhance a sense of control, lacking the sense of worry about losing control, and transformation of time. Digital games are a powerful tool to utilize students' engagement in the classroom.

Learning Outcomes By the end of this session students will learn how to:

- Understand a learning concept of digital games;
- Understand models of integration;
- Understand Educational (Pedagogical) Design Considerations
- The importance of immediate feedback;
- Analyze the differences between Games for Entertainment and Learning

Key Words

Digital games	Digital education	Simulated learning	Virtual reality	Higher education	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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- **Supplementary Sources/Material**

1. Selby G, Walker V, Diwakar V. A comparison of teaching methods: interactive lecture versus game playing. Med Teach. 2007 Nov;29(9):972-4. doi: 10.1080/01421590701601584. PMID: 18158674.
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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 6. You will be allocated with an instructor. You will need to develop a digital serious game for course you feel competent First you will need to discuss the game with the allocated instructor and then devise a lesson plan, which will be delivered online by you to the respective undergraduate students under supervision. The session will need to be recorded for future use.

Recommended number of work hours for the student 17 hours

TITLE:

Task trainers and their use

(7th Week)

Summary Task trainers represent specialized simulators or life-like models of human anatomy designed to help learners practice a specific skill. They are designed to break down specific physical tasks into simple action steps and information.

Introductory Remarks Simulation is increasingly used in healthcare education to teach cognitive, psychomotor, and affective skills to individuals and teams. It holds crucial importance to first determine the outcomes of using simulation and utilize these to guide its integration into the curriculum. The feedback also has critical role in effective learning using simulation, and should serve and meet individual learning needs. Simulation allows training in a controlled environment, with opportunities for deliberate practice and assessment. Simulation-based and task-focused learning will significantly improve skills for all participants, and will also leads to skill retention. Further research is needed in the areas of instructional design, outcomes measurement, and translational and implementation sciences in the context of simulation.

Task trainers are designed and developed to teach competency-based and procedural skills. Task trainers, as specialized simulators or models are designed to enhance the learner practice a specific skill. They are typically used for skills that require repetitive practice, like IV placement, or for teaching skills that cause patient discomfort, like intubation. These trainers significantly help learners to familiarize themselves with various procedures with aim to develop good procedural techniques, in a most safe environment, before tlearners have to perform the procedure on a real patient. Despite the continuous technological advances in the field of medical simulation, the low-tech task trainers remain essential for clinical skills and procedure instruction. Task trainers are fundamental in the teaching of anatomic landmarks and the ability of the learner to acquire, develop, and maintain motorical skills associated with a particular procedure.

Aims/Objectives As task trainers allow repeated practice of a specific skill, their use may significantly contribute in building confidence and expertise for real-life applications. Task

trainers could also be used in combination with standardized patients, as a hybrid simulation, whicat will allow learners to practice a skill while at the same time practicing effective communication with a patient.

Learning Outcomes By the end of this session students will learn how to

- Introduce task trainers in medical education
- Implement the use of the task trainers in relevant subjects
- Analyze and understand where task trainers should be applied and incorporated in medical education

Key Words

Task trainers	Competency-based teaching	Procedural skill teaching	Psychomotor skills	Virtual simulation	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Singh M, Restivo A. Task Trainers in Procedural Skills Acquisition in Medical Simulation. [Updated 2020 Jun 19]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK558925/
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professionals for the delivery of mental state examination: a systematic review. JBI Database System Rev Implement Rep. 2015 Aug 14;13(7):177-212. doi: 10.11124/jbisrir-2015-2263. PMID: 26455855.
2. Riaz S. How Simulation-Based Medical Education Can Be Started In Low Resource Settings. J Ayub Med Coll Abbottabad. 2019 Oct-Dec;31(4):636-637. PMID: 31933328.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 7. Last week you have recorded a session teaching undergraduate students. Watch another student recording using a digital game and read his/her lesson plan. Without changing, the learning objectives create a different lesson plan using task-trainers. Word count 800 words excluding references.

Recommended number of work hours for the student 17 hours

TITLE:

Complex simulation scenarios in Medical Education

(8th Week)

Summary Simulation as a generic term refers to an artificial representation of a real-world process with aim to achieve educational goals through experiential learning.
Simulation based medical education is defined as any of educational activities that utilizes simulation aides to replicate real-life clinical scenarios.

Introductory Remarks Complex simulation modeling presents real-life situations and offers problem-solving safely and efficiently. It provides an important method of analysis which is easy to be verified, communicated, and understood. In medical education, simulation scenarios are text documents outlining the various details of a simulation - everything from patient simulator settings to debriefing notes. A simulation is used to analyze specific systems, develop mental models in learners, or research artificial environments. There is a difference between games and simulations in its intent, as 'the intent of games and simulation games is aiming to engage players in a fun and as an entertaining experience, while the intent of simulators is focused to train and develop the skills of its operators. Medical simulation allows the acquisition of clinical skills through deliberate practice rather than an apprentice style of learning. Simulation tools serve as an alternative to real patients. A trainee can make mistakes and learn from them without the fear of harming the patient. There are different types and classification of simulators and their cost vary according to the degree of their resemblance to the reality, or ‘fidelity’. Simulation- based learning is expensive. However, it is cost-effective if utilized properly. Medical simulation has been found to enhance clinical competence at the undergraduate and postgraduate levels. It has also been found to have many advantages that can improve patient safety and reduce health care costs through the improvement of the medical provider's competencies.
Across various disciplines, simulation modeling provides valuable solutions by giving clear insights into complex situations and systems.

Aims/Objectives Simulation-based learning integrates cognitive, technical and behavioral skills and activities into an environment where learners accept the setting is real, act as they would responding in the field, and feel safe in cases when mistake, as it will serve as improvement point in their learning path.

Learning Outcomes By the end of this session students will learn how to:

- Understand the importance of high-fidelity simulation and its integration in teaching
- Understand the Experiential Learning Theory align with educational simulation
- Apply and create specific scenarios
- Conduct a complex scenario
- Analyze, promote, validate or improve the progression in learning
- Analyze and understand the differences where high-fidelity simulation or task trainers should be applied and how to incorporate such in education

Key Words

Complex medical simulation	Serious games	High-technology in teaching	Virtual reality	Virtual simulations	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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- **Supplementary Sources/Material**

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 8. This will be a graded assignment accounting for 25% of the total assignment grade. The majority of healthcare professionals have experienced some form of teaching with the use of complex simulation scenarios. In a reflective essay of 1500 words, excluding references describe the experience of a complex simulation scenario.

Recommended number of work hours for the student 20 hours

TITLE:

Wearable Technologies in Medical Education

(9th Week)

Summary With rapid advances in technology, wearable devices have evolved and been adopted for various uses, ranging from simple devices used in aiding fitness to more complex devices used in assisting surgery.
Wearable technology is divided broadly into head-mounted displays and body sensors.

Introductory Remarks The incorporation of digital technologies in medicine, from e-health records to wearable sensors, occurred more rapidly than the healthcare community was able to evaluate these products. Wearable technology nowadays covers practically the entire body – from head to toe. Currently, some of the most widely used wearable devices are actually applications for evaluating and monitoring e.g. blood pressure, including blood pressure sensors (cuffless), wireless smartphone-enabled upper arm blood pressure monitors, telemedicine-monitoring technologies, and most recently wearable, external cardioverter defibrillators. There are several benefits of the use of wearable health technologies, such are real-time data collection, continuous monitoring, and the capability to predict and alerting.
The future of wearable devices seems to be headed towards continuous measurements of personal physiology to predict, prevent, or help to aid in the diagnosis of an underlying health condition. This approach allows frequent and continuous measurements of body functions including heart rate, skin temperature, blood oxygen levels, and physical activity. Recent studies are exploring the utility of wearable sensors and their findings indicate that the information provided by these devices is physiologically meaningful and actionable and will likely to play an important role in managing health in the future

Aims/Objectives The limited in-person visits, especially for at-risk patients, and expanding the scope of what healthcare professionals are able to provide remotely by using new technological advancements should be a priority moving forward, including the wearable technology already in use (Smart Glasses, Exoskeleton Robots, Wearable cardioverter-defibrillator, etc.).

Learning Outcomes By the end of this session student will learn how to

- describe the potential of wearable technologies such as Google glass
- be able to criticize their future and potential use in Medical Education

Key Words

Wearable devices	Remote monitoring	Personalized healthcare devices	Wearable technologies	Telemedicine	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 9.1 What is your future vision how wearable technologies could be used in your area of work?

Exercise 9.2 Post your answer in 300 words in wiki and have a meaningful discussion with your peers about their posts.

Recommended number of work hours for the student 17 hours

2nd TELECONFERENCE/GROUP CONSULTATION MEETING

This group consultation meeting will refer and reflect on sessions from 2nd to the 9th week.

All questions, suggestions, comments and ideas are welcome. There will be a dedicated area at Group Forum platform where you can post and reflect on earlier sessions in advance and we will have a group discussion regarding the raised issues and topics.

Active involvement by all sides is strongly advised and will be highly appreciated.

TITLE:

Static learning spaces

(10th Week)

Summary A learning environment is a learning setting or learning space as a physical setting where teaching and learning occur. It represents as a term commonly used as a more definitive alternative to classroom and may refer to both, actual or virtual locations.

Introductory Remarks Learning spaces have high diversity in use, learning styles, configuration, location, and educational institution, by supporting a wide spectrum of educational methods such as passive or active learning, vocational learning, experiential learning, simulated learning, blended learning and others. Learning spaces are progressively varied regarding location, style, and configuration depending on subject of purpose. The physical characteristics of learning spaces also contains many variables, such are shape; environment, technology, space type and appropriateness for its intended activity and users, etc. Space itself, whether physical or virtual will have an impact on learning. It enhance the collaboration, discussion and interaction between people, it can encourage exploration. Space can carry an unspoken message of silence and disconnectedness. The ability of space to define how one teaches become smore in focus in education.

The location affects their functional and operational interrelationships with other spaces, students and educators, educational programs, and support spaces. As Confucius said: “Tell me and I will forget. Show me and I may remember. Involve me, and I will understand”.

Aims/Objectives In medical education, static spaces serve professional as spaces with aim to cover and meet specific subjects, and they are frequently skill-focused, and knowledge-based such are labs, manikin-simulation rooms, etc. Critical and creative thinking, communication, collaboration, applied skills/work, peer-to-peer interaction and mentoring may be combined, integrated and evaluated, supported by all available advantages provided by the nowadays technologies.

Learning Outcomes at the end of this session students will learn how to

- Understand the advantages provided by static learning spaces
- Understand skill-based education inputs into a “knowledge bank”
- Use applied knowledge and hands-on skills
- Be able to include static spaces in medical curriculum

Key Words

Learning space	Learning environment	Skill-based education	Medical simulation	Static spaces	Medical education

Annotated Bibliography

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 10.1 What is your personal experience regarding static learning space in your educational process?

Exercise 10.2 Create a short power point presentation and post it in Forum (three to five slides). Have a discussion about disadvantages with your fellow students.

Recommended number of work hours for the student 17 hours

TITLE:

Dynamic learning spaces

(11th Week)

Summary Education is a constantly changing environment, influenced by the permanent presence of new challenges and various opportunities what require new development competencies.

Introductory Remarks A dynamic learning environment is characterized by activity, change and progress, intentionally designed to meet the needs of all students while in the same time, challenging them to enhance their existing skills, interests and understandings, and building new ones in a meaningful manner. Dynamic learning is a methodology in teaching and learning that is focused around reflective teaching practices where educators closely inspect and reflect on what happens in a classroom or in learning environment and the effects on students. Technology is one of the starting points. Nowadays, we're moving beyond from flipped classrooms, to directions of the use of real-time analytics from outside class activities that will inform instructional design and decision-making. Whenever students engage with academic content outside of the classroom, it creates an opportunity to appoint challenges before they enter to class. The use and the influence of technologies in dynamic medical environment is centered around notably apps via m-learning, the use of simulations and various tools provided by social media. All above mentioned will contribute to support educational processes and decision makings, while simulation models will contribute in developing technical- and team skills and interactions by virtualizing the “in situ” reality cases. The wikis, blogs and other networking platforms provided by the social media will have influence on collaboration and interactive participation approaches knowledge-wise. The above-mentioned technologies are mostly relating to Eraut’s intention of informal learning and Kolb’s cycle, although there are certain controversies raised regarding the listed technologies. Anyhow, learning technology in education and at workplaces will have positive influence on different aspects of professionalism, knowledge-, skills- and attitude-wise. Applications quality assessment remains challenging due to lack of specific regulations connected to it.
Further researches should also focus on dependency and distraction-related issues within working and educational environments.

Aims/Objectives Dynamic learning combine both, technology and a methodology for learning delivery and it there are differences between e-learning and dynamic learning and it will be describe where it can be applied to add value for both new and existing capabilities.

Learning Outcomes By the end of this session, students will learn how to

- Understand the differences between dynamic-, and e-learning
- Use the most appropriate learning environment to support dynamic learning
- Understand better exploiting the already existing platforms
- Understand the differences and connection between personal learning environment (PLE) and collaborative learning environments (CLE)

Key Words

Dynamic learning	e-learning	PLE	CLE	Learning services	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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2. Bullock, A., & Webb, K. (2015). Technology in postgraduate medical education: a dynamic influence on learning?. *Postgraduate medical journal*, *91*(1081), 646–650. https://doi.org/10.1136/postgradmedj-2014-132809

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- **Supplementary Sources/Material**

1. Suzuki WA, Brown EN. Behavioral and neurophysiological analyses of dynamic learning processes. Behav Cogn Neurosci Rev. 2005 Jun;4(2):67-95. doi: 10.1177/1534582305280030. PMID: 16251726.
2. Roy NA, Bak JH, Akrami A, Brody CD, Pillow JW. Efficient inference for time-varying behavior during learning. Adv Neural Inf Process Syst. 2018 Dec;31:5695-5705. PMID: 31244514; PMCID: PMC6594567.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 11.1 What is your experience about dynamic learning during your medical education? Post your answer in 300 words in Group Forum.

Exercise 11.2 Discuss the advantages and disadvantages of its use in group, and comment at least three of your peers posts.

Recommended number of work hours for the student 17 hours

TITLE:

Limitations of learning spaces in medical education

(12th Week)

Summary During the past decade virtual learning platforms are taking more and more space within medical education too. With all appreciable advantages connected to this type of learning, there are several limitations presenting.

Introductory Remarks Scientific papers, just a few years ago were focused only on uses of laptop or personal computers, while nowadays, with rapidly developing technology, we are running entire courses at university level completely online. Simulation-based scenarios also carry certain disadvantages. One of the main purposes in education is to develop workplace practice, where mostly postgraduate education is oriented. For such trainees, the characteristic features of workplace learning, in contrast to formal classroom environments, will frequently use opportunities provided by tools and technologies to learn from reflections on practice with aim to develop clinical expertise or other medical area proficiency. The diversity of ways that technology and besides all benefits, the identified limitations might be used and implemented to support learning will keep this question complex. The 'Technology-enhanced learning' (TEL) is referring to an umbrella term where the diversity of ways of using technology to support learning is framed. There are also quality-related issues raised about what apps are useful and safe, where we have lack of evidence about accuracy and reliability. The social media use will highlight issues relating to privacy, confidentiality and trust, where is a boundary between the personal and professional, however, the "what is appropriate" will remain open to interpretation. Undefined content and learning outcomes may create controversial effects. Distraction and dependency issues are also present and need to be aware of such.
It does have significant importance to consider why we will decide to implement the use of technology, as its not neutral in its effects. Considerations should include efficiency-, novelty-, and convenience-related aspects in enhancing learning.
To value technology is always challenging, as its frequently used combined with other learning activities and/or tools.

Aims/Objectives Learning spaces are completely technology-dependent, where certain downsides and barriers may pop-up from the simple electricity black-out, device-, and connection speed-related malfunctions to the much more complex software and hardware related issues. Learners distraction by other available online content is also represented. By identifying the limitations, appropriate backup mechanisms should be available and created. Simulation-based scenarios also carry certain disadvantages from the aspect of technology, as well as from the aspect of learners too, as all of them have different perceptions what will have influence on educational aspect.

Learning Outcomes By the end of this session, students will learn how to

- Understand the importance of limitations of learning spaces
- Be prepared and discuss applicable solutions how to overcome the eventual barriers
- Reflect and contrast various learning spaces

Key Words

Learning spaces	Virtual reality	e-learning	Technology in education	High-tech limitations	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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1. Lawn S, Zhi X, Morello A. An integrative review of e-learning in the delivery of self-management support training for health professionals. BMC Med Educ. 2017 Oct 10;17(1):183. doi: 10.1186/s12909-017-1022-0. PMID: 29017521; PMCID: PMC5634849.
2. Kibble JD, Bellew C, Asmar A, Barkley L. Team-based learning in large enrollment classes. Adv Physiol Educ. 2016 Dec;40(4):435-442. doi: 10.1152/advan.00095.2016. PMID: 27697956.

Assignment Essay II. graded by Instructor

Compare and contrast dynamic and static learning spaces.

Submit and essay of 3000 words, references excluded.

Recommended number of work hours for the student 20 hours

TITLE:

The use of e spaces in the delivery of the medical curriculum

(13th Week)

Summary The complex understanding of the use of e spaces and the features provided by technology plays significant role in medical education. Changes in societal expectations appoint patient safety in the forefront and raises the ethical issues of learning interactions and procedures on live patients, with the long-standing teaching method of “see one, do one, teach one” considered as no longer acceptable.

Introductory Remarks Medical education is permanently changing, and numerous factors have impact on it, like the rapidly changing medical science, the changing healthcare environment, the changing role of the physicians and other healthcare professionals, the wide spectrum of pedagogical method and techniques, and the altered societal expectations. The educational goals of using technology in medical education include facilitating basic knowledge acquisition, improving decision making, enhancement of perceptual variation, improving skill coordination, practicing for critical or specific events, teamwork training, and improving psychomotor skills.

An eSpaces study - Joint Information Systems Committee (JISC 2005a) focused on how learning technologies are influencing the design of learning spaces. The following components were highlighted:

- current practice and planned developments
- current and future trends in learning space design and learning technology
- technological and pedagogical developments
- understanding of institutional developments

Strategic drivers appoint operational and pedagogical drivers, where operational drivers reflect on the efficient and sustainable management of institutions (e.g. infrastructure improvements, etc.), while the pedagogical drivers are connected to quality and student learning experience enhancement (i.e., institutional learning, teaching/assessment strategies and/or changes in learning and teaching methods within faculties, etc.)

Learning spaces in the aspect of design may be divided into major subgroups of: teaching spaces, open access spaces, social- and other learning spaces.

Aims/Objectives The session aims to sensitize the potential educators to a functional understanding and evaluative analyzis of the available and existing e spaces, defined as a learning environment, and to facilitate it's use in the delivery of medical curriculum.

Learning Outcomes By the end of this session students will learn how to

- Understand the importance of available e spaces and their resources
- Evaluate the existing e spaces related to medical curriculum
- Analyze and discuss the use of e spaces in the delivery of the medical curriculum

Key Words

e-spaces	Digital learning	Virtual reality	Dynamic learning	Serious games	Medical education

Annotated Bibliography

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1. Rangel JC, Cartmill C, Martimianakis MA, Kuper A, Whitehead CR. In search of educational efficiency: 30 years of Medical Education's top-cited articles. Med Educ. 2017 Sep;51(9):918-934. doi: 10.1111/medu.13349. Epub 2017 Jun 14. PMID: 28612400.
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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 13. The European University Cyprus, School of Medicine uses a variety of e-spaces to deliver its courses. Choose one of the courses available at the week's page and design and deliver the relevant subject to a cohort of undergraduate students. The session will be recorded, and you will discuss with the relevant course coordinator areas of improvement

Recommended number of work hours for the student 17 hours

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

(14th week)

The Final Exam represents that the student attained all the necessary knowledge and skills of the profession included in the program.

During this Program, you are entitled to complete 11 weekly self-assessments & interactive exercises and two assignments. Assignments will be graded by the Instructor.

Assignments holds 20 points per each.

Final Exam include an MCQ paper which will have 15 questions with provided four answers per each, where all sessions will be covered. All answers must to be marked as True (T) or False (F). The minimum to pass is 70%. Incorrect answers will not have addition of negative points. Time to complete the MCQ is 15 minutes.

MCQ holds 10 points.

Recommended number of work hours for the student 20 hours.

INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

Title:

Conceptions of learning in medical education

(1st Week)

Exercise 1.1 In your answer reflect on how dynamicists models describe learning, how connectionists see it? Identify the contrasts.
Post your answer in 300 words on Group Forum.

Title:

Computer Technologies in Learning

(2nd Week)

Exercise 2.1 In your answer highlight the advantages of computer assisted learning. What benefits hold traditional learning? Focus on considering traditional teaching as the method developing theoretical thinking, while modern teaching combines practical skills, pragmatist and able to be oriented to the use of advanced technologies. Choose any area of medicine to describe it for both. Post your answer in 300 words in a Group Forum page and comment on at least two of your fellow students posts.

Title:

Effective Computer Aided Learning

(3rd Week)

Exercise 3.1 In your answer use what have you learned in 2nd week. While constructing your basic theoretical pedagogical framework, consider the five major approaches: Constructivist, Collaborative, Integrative, Reflective and Inquiry Based Learning (2C-2I-1R). What is your teaching strategy? Any discipline of medicine is considered as suitable.

Title:

Medical applications

(4th Week)

Exercise 4.1 Depending on subgroups, identify and describe at least five advantages/disadvantages of medical apps. Use personal experience. Both subtopics will be discussed at the forum

Title:

Personal Digital Assistants

(5th Week)

Assignment Essay I. graded by Instructor

In frame of medicine and medical education: reflect on online teaching materials and educational tools. Emphasize benefits and disadvantages of medical applications and personal digital assistants in medical education.
Submit a written paper of 3000 words, references excluded.
Your essay should include one introductory paragraph, three body paragraphs with support and development, and one concluding paragraph. Please, use credible sources.

Title:

Digital games in teaching

(6th Week)

Exercise 6.1 In your wiki group select a digital game and describe how would you incorporate it in your teaching framework in any field of medicine. If available, share and discuss links too. Post your answer by 300 words into a wiki and also comment on at least three of your fellow students posts.

Title:

Task trainers and their use

(7th Week)

Exercise 7.1 In your answer indicate what task trainers support? Where and how would you implement them in your teaching? Post about it 300 words in wiki

Title:

Complex simulation scenarios in Medical Education

(8th Week)

Exercise 8.1 What are the benefits of low-tech simulators? Why should you use high-tech simulation? How the two technologies could work together?
Feed your wiki group platform with relevant video-links up to your choice and discuss them.

Title:

Wearable Technologies in Medical Education

(9th Week)

Exercise 9.1 In your answer indicate why your choice was the wearable technology you decided for**.** Post your answer in 300 words in wiki and comment on three of your colleagues posts.

Title:

Static learning space

(10th Week)

Exercise 10.1 Reflect on “knowledge banks”, skill-based teaching, benefits and drawbacks of static learning space in medical education.
Your presentation should have between three to five slides. Please, include references.

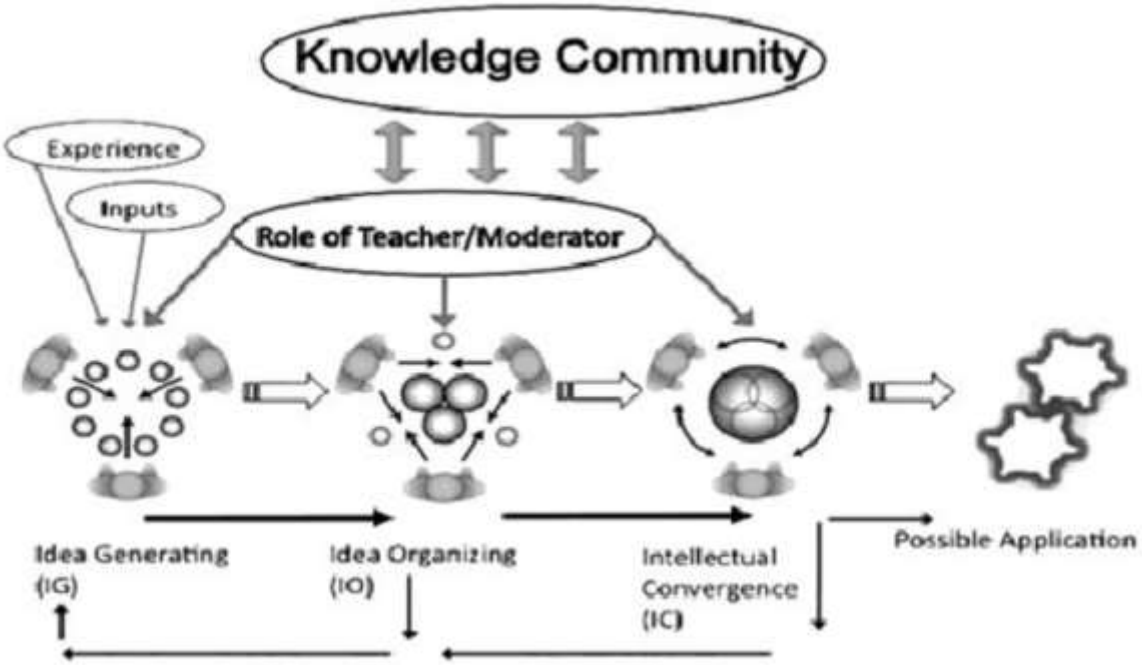
Title:

Dynamic learning space

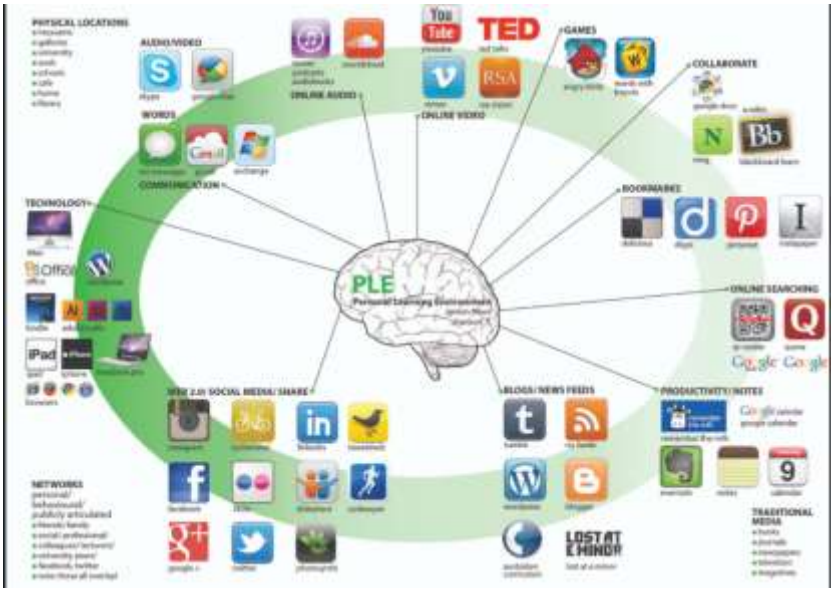
(11th Week)

Exercise 11.1 Highlight the differences between dynamic-, and e-learning. Reflect on appropriate learning environment to support dynamic learning
Think about the differences and connection between personal learning environment (PLE) and collaborative learning environments (CLE).

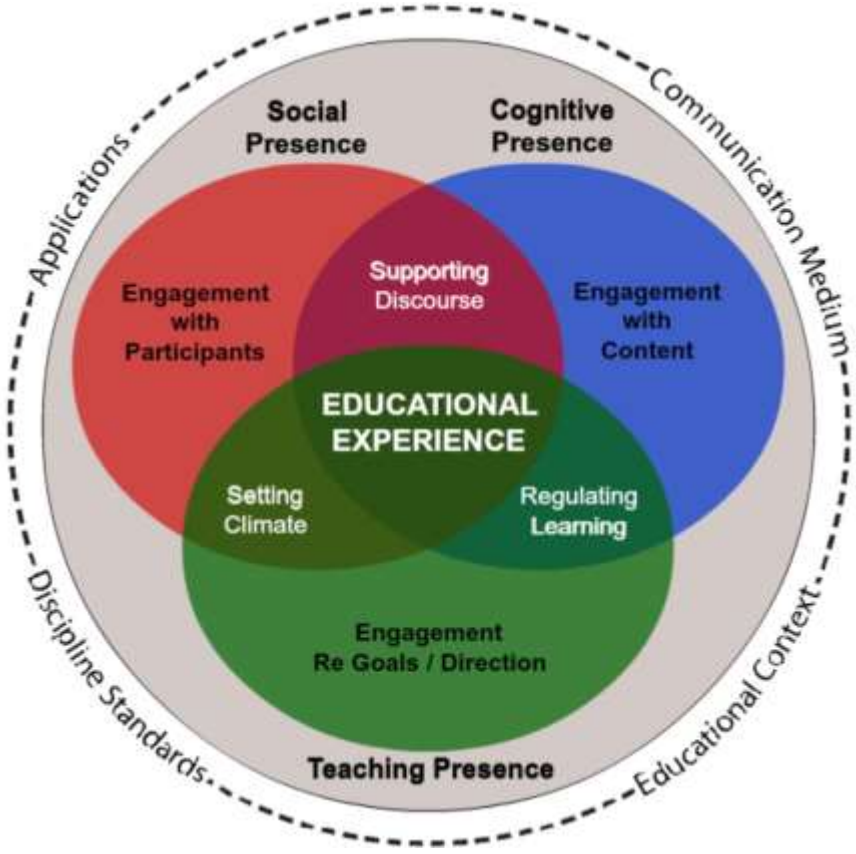
CLE model:



PLE MODEL



CREATING AN EDUCATIONAL EXPERIENCE



Title:

Limitations of learning spaces in medical education

(12th Week)

Assignment graded by Instructor

Essay II. Where dynamic and static learning spaces are focused to in medical education? Importance of limitations of learning spaces. Think about applicable solutions how to overcome the eventual barriers. Reflect and contrast various learning spaces. advantages provided by static learning spaces. How to include static spaces in medical curriculum.

Your essay should include one introductory paragraph, three body paragraphs with support and development, and one concluding paragraph. Please, use credible sources.

3000 words, references excluded

Assignment holds 20 points

Title:

The use of e spaces in the delivery of the medical curriculum
(13th Week)

Exercise 13.1 What aspects are important for eSpaces? In creating your digital poster, think about advantages (i.e.: through discussion boards and chats, you are able to interact with everyone online and also clear your doubts if any; video instructions that are provided for audio and video learning can be rewound and seen and heard again and again if you do not happen to understand the topic first time around; etc.) and highlight the drawbacks as well (i.e.: assessments that are computer marked generally have a tendency of being only knowledge-based and not necessarily practicality-based; the authenticity of a particular student's work is also a problem as online just about anyone can do a project rather than the actual student itself; etc.).

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Title:

FINAL EXAM

(14th Week)

Once you have completed all the necessary coursework and finished the internship you will be requested to meet with a committee to pass the final exam and defend your thesis work in two separate occasions. The exact dates will be announced by the Dean's office and by the host department. Students have to register for the final exam until the given deadline every year.

The final exam is a composed by the following: multiple choice questionnaire (MCQ), two essay assignments.

Please note: The following questions, essay tasks, and case scenarios are provided here are not to be used or reproduced for any purpose.

The MCQ have 15 questions with provided four answers per each, where all sessions are covered. All answers must to be marked as True (T) or False (F). The minimum to pass is 70%. Incorrect answers will not have addition of negative points. Time to complete the MCQ is 15 minutes.

MCQ holds 10 points

Samples for MCQ

1. Which of the following is a type of computer-assisted learning (CAL)

T	A	Simulation
T	B	Tutorial
F	C	Study Guides
T	D	Both A and B

2. Personal Digital Assistants can be used for:

T	A	Medical monitoring
T	B	Fitness
T	C	Navigation
T	D	Data processing

3. Gaming engagement factors are:

F	A	Affective

T	B	Relational
T	C	Behavioral
T	D	Cognitive

4. Simulations are defines as

T	A	an “approximations to reality that require trainees to react to problems or conditions as they would under genuine circumstances”
F	B	a real time and safe platform to indeterminate the critical actions enacted which represented the characteristics of clinical judgement
T	C	"simulation's ability to address skillful device handling as well as purposive aspects of technology provides a potential for effective and efficient learning."
F	D	an exact imitation of the operation of a process or system, that represents its operation over time

5. Examples of common medical simulators used for training are

T	A	Team Training Suite
T	B	Advance Life Support Simulator
T	C	Partial Human Patient Simulator
T	D	Pure Software Simulation

6. High-fidelity simulation enhance

F	A	Verbal communication skills
T	B	Critical thinking
T	C	Teamwork skills
T	D	Crisis management skills

7. Wearable technology disadvantages are

T	A	Misleading symptoms
F	B	Continuous monitoring
T	C	High costs
T	D	Ethical and privacy issues

8. The elements of metacognition are

T	A	Person variables
T	B	Task variables
T	C	Strategy variables
F	D	Static variables

9. To apply metacognitive strategies, we need

F	A	To tell to the learners what to do
T	B	To set tasks at an appropriate level of difficulty
T	C	Educators should take care not to do the thinking for learners
F	D	To suppress strategic thinking

10. Successful educational strategy includes the phases of

F	A	Planning
T	B	Monitoring
T	C	Evaluating
F	D	To suppress critical thinking

11. Some of the characteristics of an active learning environment are

T	A	Creating atmosphere suitable for collaborative learning for building knowledgeable learning communities.
T	B	Integration of prior with new knowledge to incur a rich structure of knowledge among the students.
T	C	Encouraging leadership skills of the students through self-development activities
F	D	Task-based performances are not advised

12. Dynamic learning could be described as

T	A	Purposive: the relevance of the task to the students' concerns.
T	B	Reflective: students' reflection on the meaning of what is learned.
T	C	Complex: students compare learning tasks with complexities existing in real life and making reflective analysis.
T	D	Critical: students appreciate different ways and means of learning the content.

13. To create Personal Learning Environment (PLE) we need to

T	A	Decide on upon areas of focus
F	B	Web tools are less important
T	C	Establish time each week to developing the PLE.
T	D	Create a diagram for PLE

14. The benefits of collaborative learning are

T	A	Individual
F	B	Institutional
T	C	Organizational
F	D	A and C are irrelevant

15. Some of the disadvantages for using e spaces in medical education goes for

T	A	Limited feedback
T	B	Lack of time management
T	C	Human interaction is missing
T	D	Social distancing

Assignment Essay I.

Present your “What have you discussed so far related to computer-assisted learning and medical applications? Reflect on what are the safe benefits and drawbacks are in medicine and medical education” Essay. (max 60 minutes)

Assignment Essay II.

Present your “Compare and contrast dynamic and static learning space” Essay. (max 60 minutes)

The Final Examination Committee will ask further questions related to the topics.

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE630- Principles of Assessment and assessment in the healthcare practice

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE630- Principles of Assessment and assessment in the healthcare practice**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☒	Elective ☐	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (15%), 1 (20%)		
Assessment	Assignments	Final Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Violetta Raffay
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING: INTRODUCTION

Programme Presentation

- **Short description & objectives:** The purpose of the present course is to elucidate why and how Medical Educators should assess in the undergraduate and post-graduate setting. In a simplistic sense, the purpose of assessment is to enhance learning. To this end, the character of assessment in medical education has been dissected, evaluated and refined for decades. If the purpose of assessment is to enhance learning, the purpose of teaching is to facilitate it. Before any particular teaching method can be widely implemented in health sciences education, however, there must be a method to assess its product. Generations of medical educators have outlined questions that guide decisions about developing the most appropriate method for assessing a learned skill. In medical education, assessment is a dynamic and multi-faceted process with variable aims. These may include: providing a means by which students are graded or advanced; licensing students for practice; enabling student feedback on the quality of their learning; enabling teachers to evaluate the effectiveness of their teaching; and maintaining academic standards. Defining the purpose of an assessment shapes the important consideration of what should be assessed. In an effectively-designed curriculum, course objectives will mirror the assessment content because they both serve to facilitate the same educational product. As illustrated by Harden, knowledge objectives are those that address cognitive measures. These range on a continuum from being able to recall factual events to integrating processes for problem solving. Skills objectives involve psychomotor aspects that are needed to be an efficient clinician. Attitude objectives relate to personal qualities of the learner and their approach to medicine, patients and their peers. By harmonizing course objectives with assessment content, educators ensure a unified curriculum. Next, it is important to consider the attributes desirable for an effective assessment tool. This consideration requires an understanding of the fundamental concepts of validity and reliability.

Presentation of the Course through the Study Guide

- **Short description & objectives:** An ideal assessment tool would possess the following features: accountability, flexibility, comprehensiveness, feasibility, timeliness and relevance to both the examiner and examinee. To date, a range of assessment techniques has been described and utilized in all areas of medical education. Although too numerous to describe, each method has its own inherent

advantages and disadvantages. When choosing a method, it is important that the assessment technique be closely related to what one is trying to examine. In clinical medicine it is important to distinguish between what a candidate knows and what they can do (““shows how””). Here, the clinical and practical assessment techniques are important. These techniques importance have led to more objective approaches to clinical assessment over the past 30 years. The Objective Structured Clinical Examination (OSCE) and more recently the Objective Structured Assessment of Technical Skill (OSATS) and Patient Assessment and Management Examination (PAME) are well known examples of these.

The course will also highlight the differences in formative and summative assessment as well as norm and criterion-referencing assessment. The students will also get familiar with self-assessment and peer-assessment.

Recommended student work time

Approximately 17 hours (including the study of the Guide)

TITLE:

Fundamental concepts of Assessment

(1st Week)

Summary Assessment is widely used by educators to evaluate, measure, and document the academic readiness, learning progress, and skill acquisition of students throughout their education curricula. Assessment serve as a method for analyzing and evaluating student achievement or program success.

Introductory Remarks A well-designed assessments will allow students to use the knowledge and skills they have learnt and indicate their level of mastery. Validity and reliability of assessment methods are considered as fundamental concepts of a well-designed assessment procedure, where validity refers to the degree to which a method assesses what it claims or intends to assess, while reliability refers to the extent to which an assessment method or instrument measures consistently the performance of the student. Assessments are expected to produce comparable outcomes, with consistent standards over time and between different learners and examiners. Assessment, in a constructively aligned curriculum, must speak to the outcomes listed for the course, and have to draw in both the knowledge and the practical and intellectual skills and competencies that students have been taught and that they have practiced in lectures and tutorials. Assessment activities must test what has been learnt and taught, and should not be designed to catch students out or be constructed so as to be ambiguous or inexplicit. Validity and reliability of assessment methods are considered the two most important pillars of a well-designed assessment procedure. Validity refers to the degree to which a method assesses what it claims or intends to assess, while reliability refers to the extent to which an assessment method or instrument measures consistently the performance of the student. The validity of a measurement tool (for example, a test in education) is considered to be the degree to which the tool measures what it claims to measure; in this case, the validity is an equivalent to accuracy. The word ”valid” originate from Latin “validus”, meaning strong. Validity defines the strength of the final results and whether they can be regarded as accurately describing the real world, while reliability describes the repeatability and consistency of a test. A test can be reliable but not valid, whereas a test cannot be valid yet unreliable.

Significant importance goes to relevance and transferability, as in education, the term relevance typically refers to learning experiences what is directly applicable to the personal relevance (personal aspirations, interests or cultural experiences of students),or that are connected in a way to real-world issues, and contexts (life-relevance).

Relevance is the concept of one topic being connected to another topic in a way that it will make it useful to consider the first topic when considering the second. The concept of relevance is studied in many different fields, but most fundamentally, in epistemology (theory of knowledge). Different theories of knowledge have different implications for what is considered relevant and these fundamental views have implications for all other fields as well. Transferability implies that results of the research study can be applicable to

similar situations or individuals. The knowledge which was obtained in situation will be relevant in another and investigators who carry out research in another context will be able to utilize certain concepts which were initially developed. It is comparable to generalisability. Assessment, beside the above mentioned have to be as well authentic, current, sufficient, and to meet criteria of fairness/equitability.
Well-defined performance criteria enhance both the validity and reliability of the assessment process. Clear, usable assessment criteria contribute to the openness and accountability of the whole process. The context, tasks and behaviours desired are specified so that assessment can be repeated and used for different individuals. Unambiguous criteria also counter criticisms of subjectivity.

Aims/Objectives

- To understand the fundamental concepts of assessment
- To understand the purpose of the assessment
- To obtain general overview of factors impede both the validity and reliability of assessment practices in educational settings

Learning Outcomes by the end of this session students will be able to:

- Describe and understand the importance of validity and reliability
- Define specified context, tasks and behaviours related to the assessment

Key Words

Assessment principles	Validity	Reliability	Assessment in medicine	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Eddy LH, Bingham DD, Crossley KL, Shahid NF, Ellingham-Khan M, Otteslev A, Figueredo NS, Mon-Williams M, Hill LJB. The validity and reliability of observational assessment tools available to measure fundamental movement skills in school-age children: A systematic review. PLoS One. 2020 Aug 25;15(8):e0237919. doi: 10.1371/journal.pone.0237919. PMID: 32841268; PMCID: PMC7447071.
2. Yoon HB, Park WB, Myung SJ, Moon SH, Park JB. Validity and reliability assessment of a peer evaluation method in team-based learning classes. Korean J Med Educ. 2018 Mar;30(1):23-29. doi: 10.3946/kjme.2018.78. Epub 2018 Feb 28. PMID: 29510605; PMCID: PMC5840561.

3. Burgess AW, McGregor DM, Mellis CM. Applying established guidelines to team-based learning programs in medical schools: a systematic review. Acad Med. 2014 Apr;89(4):678-88. doi: 10.1097/ACM.0000000000000162. PMID: 24556770; PMCID: PMC4885587.

- **Supplementary Sources/Material**

1. Eddy LH, Bingham DD, Crossley KL, Shahid NF, Ellingham-Khan M, Otteslev A, Figueredo NS, Mon-Williams M, Hill LJB. The validity and reliability of observational assessment tools available to measure fundamental movement skills in school-age children: A systematic review. PLoS One. 2020 Aug 25;15(8):e0237919. doi: 10.1371/journal.pone.0237919. PMID: 32841268; PMCID: PMC7447071.
2. Yoon HB, Park WB, Myung SJ, Moon SH, Park JB. Validity and reliability assessment of a peer evaluation method in team-based learning classes. Korean J Med Educ. 2018 Mar;30(1):23-29. doi: 10.3946/kjme.2018.78. Epub 2018 Feb 28. PMID: 29510605; PMCID: PMC5840561.
3. Burgess AW, McGregor DM, Mellis CM. Applying established guidelines to team-based learning programs in medical schools: a systematic review. Acad Med. 2014 Apr;89(4):678-88. doi: 10.1097/ACM.0000000000000162. PMID: 24556770; PMCID: PMC4885587.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 1. Reflective essay accounting for 25% of the total assignment grade. In a reflective essay of 1500 words excluding references describe any form of assessment you may have experienced in the past and then try to conceptualize the fundamentals used in the specific assessment.

Recommended number of work hours for the student 17 hours

TITLE:

Assessment in the aspects of the theories of adult learning and learning styles

(2nd Week)

Summary There are numerous strategies for assessing adults' learning and their learning styles. Adults engage in learning activities for a variety of reasons. Under formal settings, adults' learning is assessed through formative, summative, or diagnostic means.

Introductory Remarks Learning assessments can be a useful tool to help learners determine the gaps within their knowledge or help instructors determine if they need to make changes to their teaching strategies. Another useful technique is a learning style inventory. Some of the most popular instruments use Kolb's experiential learning theory as their foundation. Many instructors use findings from these instruments to enhance students' learning or change their teaching methods to be inclusive of the diverse learning styles in the classroom. While these instruments and the information they provide can be useful, critics of learning inventories question their validity and reliability. Some instructors match their instructional techniques to find-ings from inventories. This has its advantages and disadvantages. Research data also indicate that this may not be the best policy. Reflecting on three key theories of learning (behaviourist, sociocultural, situated and activity, and constructivist), different approaches may appear combined in practice. Each of the approaches is based on a particular understanding of what learning is; how it takes place; and how the achievement is construed. The model by behaviourists (Pavlov, Skiner and Watson) was dominant on '60's and 70's, where an environment determinated the learning, and learning was conditioned response to external stimuli. Behaviourists measured the progress through unseen timed tests, taken from progressive levels in a skill hierarchy. Performance is measured as being correct or incorrect, and the learner must then practice incorrect items further. In sociocultural, situated and activity theories see the social relationships as necessary for and as preceding learning: learning is seen as a social and collaborative activity and people develop their thinking together. Learning here involves participation, however, what is learned is not necessarily mean the property of learners. Collective knowledge was recognized as greater than individual knowledge. Assessment here was weakly conceptualized, although, it is appointed that environment is important where students can be stimulated to think and act in authentic tasks, tasks are required to be collaborative, students need to be involved in both the generation of problems and the solutions. Afterwards, the students and educators will jointly solve problems and all develop their understanding and skills. The constructivists believe in active engagement of students and what is happening in learners head (learning-wise). The deductive reasoning from principles, and inductive reasoning from evidence are seen as important

processing strategies by constructivists. In constructivism, teaching and assessment become blended with aim to achieve the goals of learning. Assessments aims to close the gap between current understanding and new understanding.

If we talk about learning styles, there are a variety of instruments and models used to explain and measure students' learning styles. One of the popular classification for learning styles is visual, auditory, and kinesthetic by Knaak (1983). Knaak also described learners as group or individual. Kolb and Kolb (2005) indicated that the Learning Style Inventory (LSI) is different from most learning style instruments, because it is "based on a comprehensive theory of learning and development. The LSI was developed to "serve as an educational tool to increase an individual's "understanding of the process of learning from experience" and his/her "unique individual approach to learning" as well as "provide a research tool for investigating experiential theory (ELT) and the characteristic of individual learning styles" (Kolb & Kolb, 2005). Kolb identifies learners as accommodators, assimilators, convergers, or divergers. Each group of learners has a unique way of learning within Kolb's cycle of learning. Learning will vary based upon an individual's learning style and the content and context of learning. The cognitive theory, experimental studies, and brain-laterization theory is presented in Dunn and Dunn learning style model (Dunn & Dunn, 1998; Honigsfeld & Dunn, 2006). Dunn believes there are 21 elements that can be grouped into five stimuli—environmental, emotional, social, physiological, and psychological—which can explain adults' learning. The environmental stimulus refers to physical aspects of the learning context including sounds, lighting, room temperature, and seating arrangements. The emotional stimulus contains four elements—motivation, responsibility/conformity, task persistence, and structure. Adults are motivated to complete a task before they move on to the next one. The Assessing the Learning Strategies of Adults (ATLAS) learning styles inventory, developed by Conti and Kolody (1999) is a quick and easy instrument which validates "the learning preference group of adults". They identified three groups of learners—navigators, problem solvers, and engagers, where navigators are focused and outline a course of action for learning. The problem-solvers consider different alternatives, but by being "open minded to so many learning possibilities, they often have difficulty making decisions" (Conti & Kolody, 2004). The engagers "learn best when they are actively engaged in a meaningful manner with the learning task" (Conti & Kolody). Learning does excites them, although, they are rarely ready to create new ways of accomplishing learning tasks. Overall, there are many learning styles assessments in use. Assessment has to be motivating in that it helps to structure the learning. The educators should select the one that best suits their needs.

Aims/Objectives

- Contrast different theories of learning related to assessment
- Understand the variety of learning styles
- Discuss the aspects of assessment

Learning Outcomes by the end of this session students will learn to:

- Compare theories of learning and the assessment
- Describe the learning styles inventory related to assessment
- Identify different assessment strategies

Key Words

Theories of learning	Learning style inventories	Assessment aspects	Medical education

Annotated Bibliography

- **Basic Sources/Material**
  1. Conti, G. and Kolody, R. (2004) 'Guidelines for selecting methods and techniques', in Galbraith, M.W. (Ed.): Adult Learning Methods, 3rd ed., Krieger, Malabar, FL, pp.181-192.
  2. Kolb A., Kolb D. A. 2005. Experiential Learning Theory bibliography. Experience Based Learning Systems, Inc. Cleveland, OH. Retrieved from www.learningfromexperience.com.
  3. EPPI (2004) *A systematic review of the evidence of the impact on students, teachers, and the curriculum of the process of using assessment by teachers for summative purposes*. Institute of Education, University of London. Available at: http://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/ass_rv4.pdf?ver=2006-03-02-124724-997 (Assessed 27/11/2020)

- **Supplementary Sources/Material**

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2. Michael Page, John Gardner, Joe Booth. (2020) Validating written feedback in clinical formative assessment. *Assessment & Evaluation in Higher Education* 45:5, ipages 697-713.
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4. *(PDF) Assessing adult learning and learning styles*. Available from: https://www.researchgate.net/publication/242329897_Assessing_adult_learning_and_learning_styles [accessed Nov 28 2020].
5. Dunn, Rita, & Dunn, Kenneth. (1998). Practical approaches to individualizing staff development for adults. Westport, CT: Praeger.

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 2.1 Visit the following page and complete the test:
http://www.conti-creations.com/start.htm

After completing the ATLAS, reflect on it in 300 words on forum.

Exercise 2.2 Have a meaningful discussion with your classmates about their experience related to assessing learning strategies.

Recommended number of work hours for the student 15 hours

TITLE:

Assessment elements

(3rd Week)

Summary Effective assessment in medical education requires tasks relevant to assess cognitive, psychomotor and communication skills while also focused on assessing professionalism attributes. The structure for single assessments identifies construct validity, reproducibility, comprehensiveness, feasibility, educational benefit and timely feedback as significant elements, what approach motivates learners and provides educators with the opportunity to enhance learning through assessment.

Introductory Remarks The context and purpose of assessment influence the importance of the individual elements identified in the framework structure. The assessment challenge is to use appropriate methods from the perspective of impact on learning. It is very important that assessment tasks fulfil the structure for good assessment what requires both individual and systems assessment. Accountability aims to improve attainment. Blending assessment elements and tools will contribute to achieve the most benefit for all. Assessment practices must send the right indications to students about what and how they should be learning. Transparency, relevance, fairness, meaningful and timely feedback of assessment tasks holds crucial impact on the desired outcomes. It has specific significance to examine students' perceptions of the purposes of assessment, the connection between assessment and the assumed nature of what is being assessed, as well, how different assessment formats will have impact on learning. Equal importance goes to consider the educators' perceptions, also as direct measures of learning, such as students' assessment rubrics and examination scores, with aim to ensure accurate evaluation of the learning process.

Assessment is integral to the education and learning process, facilitating students' learning and improving instruction. Classroom assessment is generally divided into three types: assessment for learning, assessment of learning and assessment as learning. A useful taxonomy for thinking about assessment is Miller's pyramid, which describes levels of learning starting with a knowledge base ("knows") to basic competence of knowing what should be done ("knows how") to being able to demonstrate a skill or behavior under standard conditions ("shows") to the applied competencies in a real situation ("does"). A new top layer was recently proposed for Miller's pyramid for individuals in advanced training (e.g., PhD and health professionsals) who have formed a true professional identity and consistently display such values (the person not only "does" but also "is") since educational scientist Ralph

Tyler published it in late 1940's, known as the "Tyler Rationale," education started to orient toward outcomes.

Benjamin Bloom in his *taxonomy* of educational objectives described a cognitive domain (knowledge), a psychomotor domain (manual skills), and an affective domain (attitudes), and has since dominated most of the world's thinking of educational objectives in 1950's. Other authors (Simpson, 1972; Krathwohl et al. 1972; de Landesheere 1997; Krathwohl 2002) have followed with other domains and "KSA" (for knowledge-skills-attitudes) become dominant mental model of generations of teachers. In the 1980s, educationalists widened the focus from final objectives of education on developmental milestones. The model introduced by Dreyfus and Dreyfus (1986) identified five stages (novice, advanced beginner, competent, proficient, and expert) has been applied as a developmental framework for medical training.

The assessment systems should be designed to be comprehensive, sound and robust enough to assess the requisite attributes along with testing for essential knowledge and skills. Assessment is entering every phase of professional development. Assessment and evaluation are crucial steps in educational process. Before making a choice of assessment method, some important questions must be asked: what should be assessed?, why assess?

While selecting an assessment instrument it is necessary to know precisely what is going to be assessed. This should reflect on course-content outcomes It is essential to use an instrument that is valid, reliable and feasible. A variety of instruments will ensure that the results obtained are a true reflection of the students' performance.
The feedback in medical education is an integral and important component of teaching as it encourages and enhances the learners' knowledge, skills and professional performance. Feedback has to be delivered in an appropriate setting: it should focus on the performance and not on the individual, it should be clear and specific; it should be delivered in non-judgmental language, it should emphasize positive aspects, it has to be descriptive rather than evaluative, and should include suggestions towards measures for improvement. Constructive feedback is defined as an act of giving information to a trainee through the description of their performance under the observed situation. It emphasizes the strengths of the session and areas where improvement is required. The process of giving and receiving feedback are skills that can be acquired only by practicing such.

Aims/Objectives

- Understand effective assessment requirements
- Describe taxonomies of learning theories in assessment methods
- Discuss feedback elements

Learning Outcomes by the end of this session students will learn how to:

- Describe how taxonomies of learning may influence assessment
- Compare and contrast assessment elements
- Reflect on assessment requirements

Key Words

Effective assessment	Learning taxonomies	Feedback	Comprehensiveness	Assessment feasibility	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Bloom BS, Engelhart MD, Furst EJ, Hill WH, Krathwohl DR (Eds). Taxonomy of educational objectives: The classification of educational goals; Handbook I: Cognitive Domain. Longmans, Green & Co. Ltd, London, WI 1956
2. Carraccio CL, Benson BJ, Nixon LJ, Derstine PL. From the educational bench to the clinical bedside: Translating the Dreyfus clinical skills. Acad Med 2008; 83(8)761–767
3. Dreyfus HL, Dreyfus SE. Mind over machine. Free Press, New York 1986
4. Epstein RM, Hundert EM. Defining and assessing professional competence. Med Humanit 2002; 287(2)226–235

- **Supplementary Sources/Material**

1. de Landesheere V. Taxonomies of educational objectives. Educational research, methodology and measurement—An international handbook, J Keeves. Pergamon/Elsevier Science Ltd, Oxford 1997; 803–812

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 3. This will be a group assignment. You will be divided into 2 groups according to the allocations posted on this week's forum. One of you will act as an instructor and the rest will act as students. The instructor will be responsible for giving the theme of the examination (try and keep the theme as narrow as possible) and then the person acting as an instructor will ask you to complete the test. The instructor needs to have completed a grading rubric and will grade your papers. In a post of 1500 words references excluded describe what could be improved from the person acting as an instructor and then the person acting as an instructor needs to answer to your comments using no more than 200 words**.**

Recommended number of work hours for the student 17 hours

TITLE:

Written assessment methods and the ways to prepare a test paper

(4th Week)

Summary Written assessments are activities in which the student selects or composes a response to a prompt. In most cases, the prompt consists of printed materials of a brief questions, a collection of historical documents, graphic or tabular materials, or a combination of beforehand mentioned. Written assessment may also refer to an object, an event, or an experience. Student responses are usually framed about writing at a specified time and within a fixed amount of time. These constraints contribute to standardization of testing conditions, which increases the comparability of results across students or groups.

Introductory Remarks Student assessment is a comprehensive decision-making process with numerous important implications beyond the measure of students' success, and it is also related to program evaluation.

The effective and efficient delivery of healthcare requires not only knowledge and technical skills but also analytical and communication skills, interdisciplinary care, counseling, evidence- and system-based care.

A wide range of written assessment methods currently available include essay questions, patient management problems, modified essay questions (MEQs) checklists, OSCE, student projects, Constructed Response Questions (CRQs), MCQs, Critical reading papers, rating scales, extended matching items, tutor reports, portfolios, short case assessment and long case assessment, logbooks, trainer's reports, audit, simulated patient surgeries, video assessment, simulators, self-assessment, peer-assessment and standardized patients. Assessment has a powerful positive steering effect on learning and the curriculum. It transfer what we value as important and acts as very powerful motivator for student's learning. Assessments are purpose driven. While planning and designing, it is essential to recognize the stakes involved in it, as the higher the stake, the greater the implications of the outcome of the assessment are. By more sophisticated assessment strategies, more appropriate they will be for feedback and learning. Measuring progress should have in multiple integrated abilities assessment, like factual knowledge, analysis and synthesis of informations, and problem solving.

Aims/Objectives

- Understand validity and face, content, construct and criterion validity
- Explain flexibility, comprehensiveness and feasibility of the written tests
- Discuss accountability of written assessment

Learning Outcomes by the end of this session students will learn how to:

- Describe internal consistency reliability, test-retest reliability, equivalent forms reliability and inter-rater reliability in written assessment
- Compare and contrast written assessment tools

Learning Outcomes By the end of this session students will be able to

Key Words

Written assessment	Test-retest	Assessment planning	Medical education

Annotated Bibliography

- **Basic Sources/Material**
  1. Downing SM. Assessment of knowledge with written test forms. In: International Handbook of Research in Medical Education, edited by Norman GR, van der Vleuten CP, Newble DI. Dordrecht: Kluwer Academic, 2002, p. 647– 672. doi:10.1007/978-94-010-0462-6_25

  2. Lockyer J, Carraccio C, Chan MK, Hart D, Smee S, Touchie C, Holmboe ES, Frank JR; ICBME Collaborators. Core principles of assessment in competency-based medical education. Med Teach. 2017 Jun;39(6):609-616. doi: 10.1080/0142159X.2017.1315082. PMID: 28598746.

  3. (PDF) Assessment Methods in Medical Education. Available from: https://www.researchgate.net/publication/240469755_Assessment_Methods_in_Medical_Education

- **Supplementary Sources/Material**

  1. Bazrafkan L, Ghassemi GH, Nabeiei P. Feedback is good or bad? Medical residents' points of view on feedback in clinical education. J Adv Med Educ Prof. 2013;1(2):51–4.

2. Bierer SB, Dannefer EF, Taylor C, Hall P, Hull AL. Methods to assess students' acquisition, application and integration of basic science knowledge in an innovative competency-based curriculum. Med Teach. 2008;30(7):e171–7.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 4.1 Create a test-retest reliability paper in any area of medicine and post it on forum. Ask at least 3 of your colleagues' to respond to it accordingly.

Exercise 4.2 Evaluate the results of the previous 3.1 exercise, reflect also on coefficients of stability on created test-retest reliability and post your answer on the forum.

Recommended number of work hours for the student 17 hours

TITLE:

Summative assessment

(5th Week)

Summary The summative assessment will provide to the faculty the insight into how well students have mastered the delivered content by assessing students at the end of a module, course, or at the entire program curriculum.

Introductory Remarks As the key element of summative assessment is to evaluate what someone has learnt up to that point in time, having a concise summary of the outcomes of the assessment become important. This will facilitate comparison with their previous performance and/or external standards and/or with other learners. Summative assessments are used to evaluate student learning, skill acquisition, and academic achievement at the conclusion of a defined instructional period, which is typically at the end of a project, unit, course, semester, program, or school year. The summative feedback is given during the assessment decisions and it describes the areas where the learner meet or might not yet meet the assessment criteria. Methods of summative assessment aim to summarize overall learning at the completion of the course or unit by:

- Questionnaires
- Surveys
- Interviews
- Observations
- Testing (specific test created by the teacher or establishment made to include all points of a unit or specific information taught in a given time frame)
- Projects (a culminating project that synthesizes knowledge)

Summative assessment examples includes the end-of-term or midterm exams, the cumulative work over an extended period such as a final project or creative portfolio, and the end-of-unit or chapter tests.

Summative assessment provides motivation for students to study and to pay attention during courses. Summative evaluations may be considered as tools, as they have the capability to evaluate the usefulness of any program, they work towards the improvement of institution and may they help in aligning curriculum. In other hand, they are not the most accurate reflection of learning.

Aims/Objectives

- To provide general overview of purposes of summative assessment
- Understand the methods of summative assessment
- Underline the advantages of summative assessment

Learning Outcomes By the end of this session students will be able to:

- Identify different examples of summative assessment
- Describe narrative and written summative assessment examples
- Understand the role of instructor in summative assessment

Key Words

Summative assessment	Narrative assessment	Feedback	Assessment evaluation	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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2. Albanese MA. Challenges in using rater judgements in medical education. J Eval Clin Pract. 2000 Aug;6(3):305-19. doi: 10.1046/j.1365-2753.2000.00253.x. PMID: 11083041.
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2. Downing S. 2002. Threats to the validity of locally developed multiplechoice tests in medical education: construct-irrelevant variance and construct underrepresentation. Adv Health Sci Educ. 7:235–241.

Assignment 1 graded by Instructor
This is a graded assignment and accounts for 30% of your total assignment grade

What have you discussed so far about the assessment? Reflect on validity and reliability regarding written assessment methods. Submit an Essay of 3000 words, references excluded.

Recommended number of work hours for the student 20 hours

TITLE:
Formative assessment

(6th Week)

Summary Formative assessment is connected to a wide spectrum of methods that educators use to conduct in-process evaluations of students' comprehension, learning needs, and academic progress during their learning process. It is useful to the educators to identify concepts that students are struggling to understand, skills they are having difficulty acquiring, or learning standards they have not yet achieved. The adjustments can be made to any part of learning process, including lectures, instructional techniques, and academic support.

Introductory Remarks Formative assessments are considered as an integral part of effective teaching and education, as formative assessments are integrated into the teaching and learning process, and actually, it does reinforce learning. It is commonly used as formative feedback as well. The formative assessment evaluates students' learning progress and achievement at the conclusion of a specific instructional period at the end of a project, at the unit, at the course, program, or semester. As the formative assessment is often contrasted with the summative, formative assessments are "for" learning, while summative assessments are "of" learning.

Representative examples of formative assessments are:

- Questions by educators to individual students and groups of students during the learning process to determine what specific concepts or skills they may be having trouble with. A wide variety of intentional questioning strategies may be employed, such as phrasing questions in specific ways to elicit more useful responses.
- Specific, detailed, and constructive feedback that teachers provide on student work, such as journal entries, worksheets, research papers, projects, ungraded quizzes, lab results, etc.
- Self-assessments that ask students to think about their own learning process, to reflect on what they do well or having difficulties with, and to underline what they have learned or still need to learn to meet course expectations or learning standards.
- Peer assessments that allow students to use one another as learning resources. For example, "workshopping" a piece of writing with classmates is one common form of peer assessment, particularly if students follow a rubric or guidelines provided by the educator.

Aims/Objectives

- To provide general overview of formative assessment methods
- Discuss self- and peer-assessment
- Reflect on the elements of constructive feedback during formative assessments

Learning Outcomes By the end of this session students will learn how to:

- Understand the concept of formal assessments
- The importance of constructive feedback in formative assessment
- Analyze how formative assessment may reduce learning and achievement gaps

Key Words

Formative assessment	Self-assessment	Peer-assessment	Achievement gaps	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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- **Supplementary Sources/Material**

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 6. You will be asked to observe a formative skill assessment of an undergraduate student (links will be provided and will be confidential for each one of you. In an essay of 700 words, reflect on the strengths and the areas of the specific summative assessment (references excluded)

Recommended number of work hours for the student 17 hours

TITLE:

Self-assessment

(7th Week)

Summary Self-assessment is an assessment tool used by students to evaluate the quality of their work, to measure their performance with the defined goals and learning objectives, to identify the strengths and weaknesses in their work and to implement revision accordingly.

Introductory Remarks Self-assessment is a part of formative assessment during which students will reflect on and evaluate the quality of their work and learning, will judge the degree to which they reflect the explicitly stated goals or criteria, will identify the strengths and weaknesses in their work, and to revise it accordingly. The purpose of self-assessment is to help the individual know the extent of their abilities and to improve upon them without the need of a performance appraiser. When trainees or students are allowed to participate in standard-setting they gain a better comprehension of the standards and are more likely to be motivated to adhere to them. Accuracy in self-assessment of skills can be fostered by performance-based feedback. Self-assessment is critical to the ability of professionals to improve and adapt to advances in their profession. Students may be able to accurately self-assess skills, but the ability to integrate the various components required to practice effective medicine is difficult to define and even more difficult to self-assess. Physicians often don't recognize well what they do not know and the least experienced residents and physicians appear often to overrate their skills and knowledge. Also, even experienced residents may not assess themselves as others would do so. Self-assessment without comparison to certain external standard such as an expert rater may not allow recognition of serious weaknesses, especially among residents and physicians early in their careers. The process of comparing self-assessments with external standards may lead to improvement if the physician is made aware of discordance between his/her self-assessment and an assessment based on credible data and established standards.

Aims/Objectives

- Promote reflection on personal performance
- Identify reactions to self-assessment
- Evaluate the reliability of marking
- Identify reasons for discrepancies between scores of assessor and assessee

Learning Outcomes By the end of this session students will learn how to:

- Understand the importance of self-assessment
- Apply and reflect on self-assessment
- Analyze, identify and discuss the weaknesses and advantages of self-assessment

Key Words

Self-assessment	Autonomous assessment	Accuracy	Self-reflections	Medical education

Annotated Bibliography

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 7.1. Devise an OSCE for any aspect of any course you are more familiar with. The OSCE will need to include the instructions, expected actions from the student preforming the scenario and a grading rubric.

Exercise 7.2 Comment meaningfully on at least one your classmate's posts

Recommended number of work hours for the student 15 hours

TITLE:

Peer-assessment

(8th Week)

Summary Peer assessment is an assessment about students' work by fellow students of equal status. Students often undertake the peer-assessment in conjunction with formal self-assessment. They reflect on their own efforts, extend and enhance this reflection by exchanging feedback about their own and their peers' work.

Introductory Remarks Peer-assessment (PA) in healthcare education is applied with different educational goals and implemented in different educational formats. Gielen highlighted two main goals of PA: one as an 'assessment tool' and the second one as a 'learning tool'. As an assessment tool it refers to the ability of students to reliably and validly assess their peers, while when it is viewed as a 'learning tool' it aims to provide students with relevant improvement feedback. The peer feedback is built up from multiple sources of information. The quality criterion as a learning tool could be most described by the concept of 'consequential validity', referring to the impact on student learning outcomes. Most of the studies related to the impact of PA on learning in medical education report about positive effects, however, these studies are dominantly focused on professional behavior such as rule-based adherence to behavioral norms, rather than hands-on and clinical examination and treatment skills. If the students are trained to appropriately assess their peers and to provide meaningful improvement feedback, they will probably be well prepared to audit their colleagues after the graduation as well. Peer assessment is most commonly used as written work, although presentations, performances, posters, videos and other types of assignments are equally suitable. It is frequently used as a strategy for students to assess the contributions of their fellow students to group work and assignments. Peer assessment involves students taking responsibility for assessing the work of their peers against set assessment criteria. This makes peer assessment an important component of Assessment for Learning, rather than simply a means of measuring performance. Peer assessment or peer review provides a structured learning process for students to critique and provide feedback to each other on their work. It helps students develop lifelong skills in assessing and providing feedback to others, and also equips them with skills to self-assess and improve their own work.

Aims/Objectives

- To understand how to reflect on equal-status performance
- Identify reactions to peer-assessment
- Identify reasons for discrepancies between scores of assessor and assessee

Learning Outcomes By the end of this session students will learn how to

Key Words

Peer-assessment	Instructional design	Learning tools	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 8.1 You will be divided in two groups:

Group one topic is: What is your personal experience about self-assessment? Create a reflective collective assignment of 1500 words excluding references and post it on the forum.

Group two topic is: What is your personal experience about peer-assessment? Create a reflective collective assignment of 1500 words excluding references and post it on the forum.

Exercise 8.2 Comment on the post of the team you have not participated as a member.

Recommended number of work hours for the student 15 hours

TITLE:

Norm-referencing vs Criterion-referencing assessment

(9th Week)

Summary Norm-referenced tests are specifically designed to rank test takers on a “bell curve”. To produce a bell curve each time, test questions are carefully designed to accentuate performance differences among test takers, not to determine if students have achieved specified learning standards, learned certain material, or acquired specific skills and knowledge. Tests that measure performance against a fixed set of standards or criteria are called criterion-referenced tests.

Introductory Remarks A frame of reference is required to interpret assessment evidence. There are two distinct approaches to interpreting assessment information. Norm-referenced assessment compares the student to the expected performance against that of peers within a cohort with similar training and experience. Norm-reference is related to the interpretation of test performance in terms of a norm, and indicates the individual’s relative standing in a group. Criterion-referenced assessment focuses on the candidate's performance of the task against an set of criteria related to the knowledge, skills, or attributes that the candidate is developing. Criterion referencing was introduced in early 60’s by Glaser wit intention to increase the content validity of tests by more directly linking the test questions to well-described criterion set of behaviors. The criterion is the knowledge or behavioral domain against which the test is carefully mapped.

Main characteristics for criterion-referenced assessments:

- specify criteria or standards (eg. essential elements of a task),
- judgements about performance can be made against set, pre-specified criteria and standards,
- focus is on mastery with the achievement of a criterion representing a minimum, optimum or essential standard,
- recorded via rating scale or set of scoring rubrics, and examples include clinical skill competency tools.

Main characteristics for norm-referenced assessments:

- do not utilise criteria,
- assessment is competitive,
- involves making judgements about an individual's achievement by ranking and comparing their performance with others on the same assessment,

- examples include examinations.

Aims/Objectives

- To discuss the frame of reference required to interpret assessment evidence
- To provide a general overview of two distinct approaches to interpreting assessment information
- To provide general overview of assessment scoring and reporting approaches

Learning Outcomes By the end of this session student will learn how to

- Compare norm- and criterion referenced tests
- Describe the importance of rubrics
- Identify and describe the approaches to recorded performance-based assessment

Key Words

Norm-referenced tests	Criterion-referenced tests	Rubrics	Analytic scoring	Holistic scoring	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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Group Assignment This counts for 20% of your total assignment grade

Assignment 2. This will be a graded assignment. You will be divided into groups and you will submit one paper as a group. The title of the assignment is “Compare and contrast the challenges related to the reliability, validity, and data reporting in norm-referenced and criterion-referenced tests and how it could influence your approach to medical education and why?” Submit an essay as a group. Word count 4000 words excluding references.

Recommended number of work hours for the student 20 hours

2nd TELECONFERENCE/GROUP CONSULTATION MEETING

This group consultation meeting will refer and reflect on sessions from 2nd to the 9th week.

All questions, suggestions, comments and ideas are welcome. There will be a dedicated area at Group Forum platform where you can post and reflect on earlier sessions in advance and we will have a group discussion regarding the raised issues and topics.

Active involvement by all sides is strongly advised and will be highly appreciated.

TITLE:

Objective Structured Assessments

(10th Week)

Summary Objective structured assessments are used for technical and non-technical skills assessment in medical settings either as summative or formative assessment forms.

Introductory Remarks The Objective Structured Clinical examination (OSCE) has become a standard method of assessment in both undergraduate and postgraduate students, since it has been introduced as a mode of students' assessment in medical school in 1975, by Haden and Gleeson. The OSCE is a multipurpose evaluative tool that can be utilized to assess healthcare professionals under clinical setting. It assesses competency, based on objective testing through direct observation. It is precise, objective, and reproducible allowing uniform testing of students for a wide range of clinical skills. In contrary to the traditional clinical exam, the OSCE could evaluate areas most critical to performance of healthcare professionals such as communication skills and ability to handle unpredictable patient behavior. The OSCE style of clinical assessment's advantages are in terms of objectivity, uniformity and versatility of clinical scenarios that can be assessed, shows superiority over traditional clinical assessment. OSCE allows evaluation of clinical students at varying levels of training in a relatively short period, over a broad range of skills and issues. It removes prejudice in examining students and allows all to go through the same scope and criteria for assessment, what has made it a worthwhile method in medical practice. The OSCE includes six separate stations using simulated patients in a clinical setting, where four stations are designed to test the candidate's knowledge and understanding of assessment, planning, implementation and evaluation of care, and the remaining two refers to test clinical skills.

The Objective Structured Assessment of Technical Skills (OSATS) are validated assessment tools that assess technical competency in a particular technique, what are mostly related to surgical disciplines in medicine. An OSATS consists of a procedure specific checklist, a pass/fail judgment and a global rating scale. The additional typical example to assess practical and clinical skills is the patient assessment and management examination (PAME), which was designed to enhance the summative assessment of the competence of senior residents and provide a more comprehensive evaluation of competence. Studies indicate that the PAME showed better psychometric properties than other measures and assessed areas often not evaluated. This type of evaluation may have benefits in feedback process, remediation, and at certification decisions.

Aims/Objectives

- Discuss the assessment methods of technical and non-technical skills
- Understand the structure of OSCE, OSATS and PAME
- Understand the role of medical instructor in objective structured assessments

Learning Outcomes By the end of this session student will learn how to

- Understand the main aspects of the technical and non-technical skills assessment
- Identify the advantages and disadvantages of Objective Structured Assessments
- Analyze and compare objective structured assessment methods

Key Words

Objective Structured Assessment	OSCE	OSA	PAME	Medical education

Annotated Bibliography

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 10.1 Watch the following videos:

https://www.youtube.com/watch?v=rRPDZdWzH_M&ab_channel=COFAonlineUNSW
https://www.youtube.com/watch?v=vqYuuueg9yw&ab_channel=KenjiTomita
https://www.youtube.com/watch?v=JlKawpx1sDU&ab_channel=ANUOnline
Consider how formative assessment was introduced in first video, and also the two summative assessment models are presented in the second and third video. Reflect on how you perceive the use of technology at different online assessment methods. Write a small paragraph of 500 words (excluding references) and post it on the forum.

Exercise 10.2 Meaningfully comment on one on your fellow classmates' post and use references to support your post.

Recommended number of work hours for the student 15 hours

TITLE:

Technology enhanced assessment

(11th Week)

Summary Technology Enhanced Assessment (TEA) is a broad term of diverse methods by which technology can be used to support the management and delivery of assessment. TEA does not mean simply to replace the existing assessments with digital versions, but more of making the use of technology to enhance certain operational and educational issues of assessment.

Introductory Remarks Technology-enhanced assessment in general refers to the use of electronic systems and software to assess and evaluate the progress of individual students' in educational settings.TEA is method of supporting the pedagogy and best practice relating to assessment. There is a plethora of technology in use to enhance both the delivery and management of assessment, including using video to deliver feedback. According to the Smarter Balanced Assessment Consortium, a Technology-Enhanced Item is a computer-delivered item that includes specialized interactions for collecting response dats, that include interactions and responses beyond traditional selected-response or constructed-response. Examples for TEA includes the following: online multiple-choice questionnaires for summative or formative assessment, self-assessment of project work at reflective blogs, personal response systems (PRS) for in-class formative assessments, wikis for a group projects, online discussion boards, etc. Numerous benefits of TEA exist by allowing a broader range of skills to be tested in a number of different ways it becomes much easier for you to make the tasks more authentic and align assessments with the learning outcomes of a module; Virtual learning environments (VLEs) such as Moodle and Blackboard, allow you to present assessment criteria clearly within the module information, ensuring marking criteria are transparent and accessible to all students; allowing the creation of reusable resources (learning objects) and by facilitating automatic marking; it can provide a means of delivering rapid feedback, or even automate the process, making it clear to students when they have performed well and hopefully clarifying the assessment criteria even further; Using a broader range of assessment methods will allow a wider range of skills to be assessed. Certain disadvantages are also present, such can be finance-related, accessibility issues might appear, sense of isolation, furthermore, difficulties in confirming the identity of students completing online assessments outside of the classroom.

While designing an assessment for technology delivery, beside the general principles of assessment, additional considerations about ensuring appropriate accessibility to assessment resources, designing user-friendly assignments, also being aware of institution's technology policy has to be involved.
Technology is widely used to manage student's learning, with Virtual Learning Environments (VLEs) such as Blackboard and Moodle commonplace in Universities. Many VLEs associated with other software, can also can serve to manage different aspects of assessment with the advantage that the content related to the teaching and the assessment of a course can be stored in one place, and become accessible from anywhere, which is beneficial both to educators and students. VLE's can support scheduling assessment, clarifying criteria, grading, submission, and as well, facilities to identify cases of academic misconduct.

Aims/Objectives

- Understand the concept of technology enhanced assessment
- Discuss the VLE platforms purpose in TEA
- Understand the assessment design-related key points in technology

Learning Outcomes By the end of this session, students will learn how to

- Identify tools for technology enhanced assessment
- Describe the VLE modalities supportive to TEA
- Compare the assessment methods used in TEA

Key Words

Technology enhanced assessment	VLE	Assessment design	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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Weekly Self-Assessment & Interactive Exercises/Activities

Assignment 3 (individual) - This is a graded assignment and accounts for 35% of your total assignment grade

You have now an overview related to various assessment elements and tools, also about the connected learning theories and different evaluator assessment methods. You will be provided with anonymous student logbooks on a specific course, and you

will need to define the elements of assessing the logbooks. You may choose to use the logbooks as summative or formative assessments. Use appropriate conceptualization using references. Word limit 3000 words

Recommended number of work hours for the student 10 hours

TITLE:

Assessment of logbooks and portfolios

(12th Week)

Summary Portfolios and logbooks are important tools to be for ‘in site’ and ‘on site’ evaluations. Reflective logbooks in clinical medical education are successful for encouraging reflection and for enhancing learning experiences and have significant role in assessment. Portfolios provide clear learning goals and help students to monitor progress in achievement of these goals, encouraging self-reflection. By the conceptual understanding, knowledge overgrow the isolated facts and methods, where students’ understands the concept, and will have the ability to transfer their knowledge into new situations and apply it to new contexts.

Introductory Remarks Already Hippocrates emphasised the education of physicians, and underlined the role of the physician as an educator.
Sandars in 2009, in a guide on reflection in medical education (AMEE - Association of Medical Education in Europe) came to an inclusive definition, that reflection is a metacognitive process that occurs before, during and after situations with the purpose of developing greater understanding of both self and the situation so that future encounters with the situations are informed from previous encounters. Reflection is an active process, using the experience and one’s own cognition, and it may occur before, during and after situations. Reflection is an active process aiming at a deeper understanding by making use of both experience and by investigating one’s own cognition. The definition also states that reflection may occur before, during and after situations.
The logbook is mainly a learning tool as it aids reflection. It provides to students a chance to express, examine and explore their experience, and as well, gives to educators the ability to assess the progress of the students and to provide them current, constructive feedback. It also can incorporate peer-to-peer feedback where logbooks are shared, and students can work collaboratively, although still reflect individually. In this form it provides formative assessment. Educators will have an insight to a progress report on the thinking of students and to assist them in the following sessions via evaluatory assessment and also get better overview of different, individual and preferred learning styles. Logbooks works the best when they are used over a longer period of time and submitted for comments on a weekly-base. This also helps students to organize themselves and successfully pace their time. They can serve as summative assessment tool, as they provide a future resource of already experienced variety of skills, actions and thoughts, what could serve as indicating experience for future employers. The purpose of a clinical

logbook is to provide structured learning and a focus to learning and assessment in an experiential learning environment. Portfolios are an extremely useful tool to assess students' acquisition of skills and attitudes, by stimulating their self-reflection, offering constant feedback and documenting their progress. Although the time constraints of clinical practice and the additional amount of paperwork associated with portfolios have resulted in negative feedback from students and tutors about the use of portfolios in clinical settings.
Web-based portfolios including mandatory clinical clerkship, implemented in medical curriculum has been introduced in 2003 by Duque by combining the usefulness and immediacy of the web-based platform with the accuracy and practical approach of portfolios as an evaluation method.

Aims/Objectives

- To provide a general overview how reflective tools can prove assessment
- To obtain a general overview of the importance of feedback related to logbooks and portfolios
- To understand the strategies to engage more students in reflection and to objectively assess

Learning Outcomes By the end of this session, students will learn how to

- Discuss the advantages of reflective tools in assessment
- Identify the level of flexibility of logbooks
- Describe the feedback delivery

Key Words

Reflective tools	Logbooks	Portfolios	Feedback	Conceptual understanding	Medical education

Annotated Bibliography

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Weekly Assignment graded by instructor

Assignment 3 This is a graded assignment and accounts for 50% of your total assignment grade

You have now an overview related to various assessment elements and tools,also about the connected learning theories and different evaluator assessment methods. Based on previously learned, submit an essay with the following title "Contrast and compare reflective assessment methods and tools and their implication in medical education". Word limit is 4000 words, references excluded.

Recommended number of work hours for the student 20 hours

TITLE:

Assessment in the concept of licensures

(13th Week)

Summary In the past more than two decades a huge impact on licensure and certification was influenced by altered focused from educational process to educational outcomes, as well by the recognition of the need for learning and assessment throughout physicians' career, and by the changes in technology and psychometrics that have opened new perspectives for assessment.

Introductory Remarks The high standards for undergraduate medical education; require assessment of knowledge and skills to qualify for initial licensure; develop and enforce standards for professional discipline; and, in early 70's of the past century, promote continuing medical education (CME). The maintanance of licensure holds equal, significant importance, as the elements of reflective selfassessment, assessment of knowledge and skills, and performance in practice) should be periodically reassessed in their area of physician's practice to renew their license. The reflective self-assessment ("What improvements can I make?"), relies on a physician's participation in CME, which could be supplemented by certain self-review exercises as web-activities, including literature reviews in the physician's area of practice. The assessment of knowledge and skills ("What do I need to know and be able to do?"), should be met by completion of computer-based case simulations; performance improvement CME; procedural hospital credentialing; or the completion of performance improvement activities offered by the National Health Institutions and/or Medical Chambers.

The Union Européenne Des Médecines Spécialistes (U.E.M.S.) states:

"European Accreditation means the decision by UEMS-EACCME® that a CME activity, event, programme or e-learning material has fulfilled the UEMS-EACCME® quality requirements. A CME activity or e-learning material will be accredited by UEMS-EACCME® if it has a high quality scientific content, if it is free of commercial bias and has an appropriate educational approach.

The added value of UEMS-EACCME® lies in its central link and bridging role. From the point of view of the Providers of events, the accreditation process is less resource-consuming and easier since they do not have to apply to every National Accreditation Authorities (NAA) to have an event recognised in every European country. On the basis of UEMS-EACCME® accreditation, the approval from the NAA of the country where the event takes place will be recognised in all the other European countries. Consequently, the added value rests in the international dimension that is given to an event. More participants from other countries and also from the USA / Canada would be interested in participating in their meetings.

Since the UEMS-EACCME® is an institution of the UEMS which formally represents European countries, its credits are recognised by National Accreditation Authorities in Europe. As UEMS-EACCME® accreditation concerns only EU-wide and international CME-CPD activities, it is not competitive but rather complementary to the competence and activities of National Accreditation Authorities."
Furthermore: "CME accreditation granted by the UEMS-EACCME® also provides a guarantee to participants from all over the world that the content of the CME provided is of a high quality, unbiased and didactic and, for European doctors, that this quality will be recognised in their home country. The UEMS recognises that considerable advances are being made in the methodologies by which CME and CPD can be provided, and by which these educational opportunities are accessed by doctors. For this reason, the UEMS has agreed in principle to the accreditation by the EACCME® of new media for the delivery of CME-CPD, that go beyond traditional lectures, symposia and conferences."
The Directive 2005/36/EC of the European Parliament and the European Council of 7 September 2005 on the recognition of professional qualifications regulates professional recognition in the regulated professions. It applies to all nationals of a Member State of the European Union (EU), other states within the European Economic Area (EEA) and Switzerland who have obtained their qualification in a Member State and provides them with access to the same profession under the same conditions as nationals.

Aims/Objectives

- To obtain the general overview of the importance licensure and certification
- To provide a general overview of CME
- To understand the accreditation-related requirements

Learning Outcomes By the end of this session students will learn how to

- Analyze and discuss the aspects of licensure and certification in medical curriculum
- Understand the importance of a general procedures-related assessments regarding CME

Key Words

CME	Certification	Licensure	CPD	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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1. https://www.uems.eu/areas-of-expertise/cme-cpd/eaccme/what-is-european-accreditation#:~:text=European%20Accreditation%20means%20the%20decision,UEMS%2DEACCME%C2%AE%20quality%20requirements.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 13.1 Reflect on your personal experience related to your participation at CME programs and the requirements you need to fulfill to maintain your licensure. Create and upload a digital poster on forum.

Exercise 13.2 Meaningfully comment on one of your classmate’s post.

Recommended number of work hours for the student 15 hours

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

(14th week)

The Final Exam represents that the student attained all the necessary knowledge and skills of the profession included in the program.

During this Program, you are entitled to complete ten weekly self-assessments & interactive exercises and three assignments, where two of such will be an individual, and one will be a group assignment. Assignments will be graded by the Instructor.

Assignments (individual) holds 20 points per each.

Group Assignment holds 10 points.

Recommended number of work hours for the student 20 hours.

INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

Title:

Fundamental concepts of Assessment

(1st Week)

Exercise 1.1 Elaborate the key concepts of assessment (VACSR) in your discussion.

- Valid: the assessment process is appropriate to the subject or qualification, assesses only what is meant to be assessed and the learner's work is relevant to the assessment criteria
- Authentic: the work has been produced by the student only
- Current: the work is relevant at the time of assessment (usually within 3-6 months)
- Sufficient: the work covers all of the assessment criteria and learning outcomes
- Reliable: the work is consistent across all learners, over time and at the required level

Exercise 1.2 Reflect on your discussion, and after posting it on forum, use your peer's post to comment on

Title:

Assessment in the aspects of the theories of adult learning and learning styles

(2nd Week)

Exercise 2.2 **http://www.conti-creations.com/start.htm**

Exercise 2.2 After completing the ATLAS, reflect on it, as described and discuss it with your classmates on forum.

Title:

Assessment elements

(3rd Week)

Exercise 3.1 While thinking about the defined task, consider also this illustration:

Exercise 3.2 Use your peer's post to comment on.

Title:

Written assessment methods and the ways to prepare a test paper

(4th Week)

Exercise 4.1 Create a test-retest reliability paper with 5 questions in any area of medicine by your choice
Test-Retest Reliability (retest reliability) measures the test consistency — the reliability of a test is measured over time. Give the same test twice to the same (at least FIVE) people at different times to see if the scores are the same. For example, test on a Tuesday, then again the following Tuesday. The two scores are then correlated. Post the test on the forum

Exercise 4.2
https://study.com/academy/lesson/test-retest-reliability-coefficient-examples-lesson-quiz.html
https://www.youtube.com/watch?v=kya1c1EdGSw&ab_channel=PIETUTORS

Known biases: Learners gaining knowledge about the purpose of the test (they are more prepared the second time around), feedback between tests.
Finding a correlation coefficient for the two sets of data is one of the most common ways to find a correlation between the two tests. Test-retest reliability coefficients (coefficients of stability) vary between 0 and 1,:

- 1 : perfect reliability,
- ≥ 0.9: excellent reliability,
- ≥ 0.8 < 0.9: good reliability,
- ≥ 0.7 < 0.8: acceptable reliability,
- ≥ 0.6 < 0.7: questionable reliability,
- ≥ 0.5 < 0.6: poor reliability,
- < 0.5: unacceptable reliability,
- 0: no reliability.

On this scale, a correlation of .9(90%) indicate a very high correlation (good reliability) and a value of 10% a very low one (poor reliability).

Test-retest reliability --> acceptable reliability coefficient values

- under .5 is considered poor
- .5 to .75 is considered moderate
- **above .75 is considered good**
- **for clinical measurement the reliability coefficient should exceed .9**

Pearson r --> Test retest reliability tested with the Pearson product moment correlation coefficient (r)

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[\,n\Sigma x^2 - (\Sigma x)^2\,][\,n\Sigma y^2 - (\Sigma y)^2\,]}}$$

xy means we multiply x by y, where x and y are the **test** and **retest** scores. If 50 students took the **test** and **retest**, then we would sum all 50 pairs of the **test** scores (x) and multiply them by the sum of **retest** scores (y)

Test-Retest Reliability Issues

- **learning** --> the score on the second test will be affected by learning from the first test
- **rater bias** --> personal bias can inflate or deflate the measured score
    - control with blinding
- **time between tests** --> should be far enough to avoid learning and fatigue, but close enough to avoid changes in the variable due to time

Title:

Summative assessment

(5th Week)

Assignment 1 (individual)
Your essay should include one introductory paragraph, three body paragraphs with support and development, and one concluding paragraph. Please, use credible sources.

Title:

Formative assessment

(6th Week)

Exercise 6.1 In your answer, please, reflect as well on benefits and disadvantages of both methods.

Exercise 6.2 Use your classmates' post to meaningfully comment on.

Title:

Self-assessment

(7th Week)

Exercise 6.2

Advantages of Self Assessment

- Encourages students to critically reflect their own learning progress and performance
- Encourages students to be more responsible for their own learning
- Helps students develop their judgmental skills
- There is no peer pressure when students evaluate themselves
- Helps students become autonomous learners
- Helps students be more aware of their weakness and strength

Disadvantages of Self Assessment

- Self assessment can be subjective because students may not be sincere and may even over-evaluate their own performance
- Time consuming for students
- Students may not be familiar with the assessment criteria

Exercise 7.2 Use your peers' posts to discuss and to comment on

Title:

Peer-assessment

(8th Week)

Exercise 8.1 Think about the following as well:

Advantages of PA

- Encourages students to critically reflect each others work
- Encourages students to be involved in the assessment process
- Helps students develop their judgmental skills when they assess the work of other group members
- More feedback can be generated by students compared to one or two teachers
- Reduces the time and workload of marking for teachers
- Discourages the problem of free rider because students tend to put extra effort to perform better in front of their peers
- Maintains the fairness of assessment because everyone has the chance to assess each other
- Students learn how to criticize, evaluate and apply other generic skills during the process
- Students learn more from each others work

Disadvantages of PA

- Peer pressure and friendship can influence the reliability of grades given by students
- Students may have a tendency to give everyone the same mark (for example, there may be collusion in return for good grades)
- Students are not experienced in assessing each other
- Students may cheat in collaboration for group assignments
- Fairness may not be maintained because extroverted students can be usually be marked higher and quieter students got marked down

Exercise 8.2 Use your classmates' posts to generate discussion about the disadvantages

Title:

Norm-referencing vs criterion-referencing assessment

(9th Week)

Assignment 2 (group)

Your essay should include one introductory paragraph, three body paragraphs with support and development, and one concluding paragraph. Please, use credible sources.

Title:

Objective Structured Assessments

(10th Week)

Exercise 10.1 Serve only as an illustrative example for your digital poster

Advantages & Disadvantages of OSCE.

Advantages of OSCE Objectivity	Disadvantages
1. Uniform scenarios for all candidates	1. Organizational training
2. Availability	2. The idealized 'textbook' scenarios may not mimic real-life
3. Safety, no danger of injury to patients	situations
4. No risk of litigation	3. Expensive
5. Feedback from Actors (simulators)	
6. Allows for Recall	
7. Stations can be tailored to level of skills to be assessed	
8. Allows for teaching audit	
9. Allows for demonstration of emergency skills	

Exercise 10.2 Discuss and comment your peers' posts

Title:

Technology enhanced assessment

(11th Week)

Exercise 11.1 Comment the provided video's

Exercise 11.2 Reflect on your fellow classmate's posts

Title:

Assessment of logbooks and portfolios

(12th Week)

Assignment 3 (individual)

Your essay should include one introductory paragraph, three body paragraphs with support and development, and one concluding paragraph. Please, use credible sources.

Title:

Assessment in the concept of licensure

(13th Week)

Exercise 13.1 Describe how you take an active part in CME and other licensure and certification related tasks – digital poster

Exercise 13.2 Create a focused-discussion on the forum with your peers' about their licensure-related experiences and impressions.

Title:

FINAL EXAM

(14th Week)

Once you have completed all the necessary coursework and finished the internship you will be requested to meet with a committee to pass the final exam and defend your thesis work in two separate occasions. The exact dates will be announced by the Dean's office and by the host department. Students have to register for the final exam until the given deadline every year.

The final exam is a composed by the Essay Assignments.

Assignments (individual) holds 20 points per each.

Group Assignment holds 10 points.

The Final Examination Committee will ask further questions related to the topics.

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE640-Advanced Clinical Education

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE640-Advanced Clinical Education**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☒	Elective ☐	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (15%), 1 (20%)		
Assessment	Assignments	Final Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Violetta Raffay
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING: INTRODUCTION

Programme Presentation

- **Short description & objectives:** This course provides core training in the theoretical and practical considerations required to plan and deliver effective teaching events. The range of teaching methods used in the clinical environment will be explored. Students will learn about effective strategies for the planning and delivery of teaching in the hospital ward, outpatient clinical or GP surgery. In addition, the course provides core training in the theoretical and practical considerations underpinning assessment in the simulated clinical environment and in the workplace. The module will also focus on the educational issues underpinning appraisal, support and feedback. Moreover, the course provides an exploration and analysis of underlying educational theory with its practical application to the design, delivery and evaluation of teaching, assessment and educational leadership and management in the context of the clinical environment. This course explores delivery of teaching and facilitation of leaning in clinical education. Students' will develop knowledge and skills of a systematic approach to teaching and how to maintain effective learning environment. Underpinning principles and innovations will be explored for a variety of teaching methods including small and large group and lecture-based teaching, work based, bedside teaching and use of patients and simulation for clinical education. This course will also develop critical understanding of receiving and providing effective feedback for learning. Students' will receive feedback and develop educational practice through the method of peer observation and self-reflection

Presentation of the Course through the Study Guide

- **Short description & objectives:** The aim of the course will be to provide participants with information and advice in relation to Clinical Education and Supervision/training roles. Materials will be delivered through lecture and workshop formats, as well as interactive discussions, and delegate participation and contribution will be encouraged at all times. Prepare participants for clinical education and training roles. The course will deliver both theoretical concepts underpinning clinical education, and practical applications.

  .

Recommended student work time

Approximately 17 hours (including the study of the Guide)

TITLE:

Advanced learning environments – Advanced clinical education

(1st Week)

Summary Medical education has to be ready to adapt to different healthcare contexts, the digitalized health care systems and a new, digital-generation of students in a hyper-connected world. Representative advanced educational programs are designed to meet such requirements.

Introductory Remarks A variety of efforts are being made to shift the curriculum of medical training from a teachercentered to a learner-centered model. This might happen due to still remaining facts that modern medical training is inefficient and inflexible, and focuses on getting good test scores instead of developing professional competencies. Recent decades brought innovations in content and methods of medical education, but its basic structure has not changed. The time has come to ask whether the duration, sequencing, and requirements of medical education are appropriate to meet current and future challenges to medical care. The available, technology enhanced and supported platform, such are blended classrooms, e-learning modules, task trainers and simulations, virtual reality, VLE, advanced learning environments should tend to meet the level of confidence, to promote creative learning in a positive learning environment by applying principles of teaching and learning in supporting others to develop their knowledge and skills. Blended learning will offer opportunities for the complexity of learning by integrating face-to-face and online interaction.

Advanced clinical education includes the implementation of combined clinical skills and the required knowledge behind it, competency -based strategies, advanced communication methods, and other non-technical elements, including interpersonal elements, leadership, training- and supervising roles, helpful to optimize the clinical decisions by enhancing critical thinking. The advanced clinical education's (ACE) strategies will immerse learners' into in real-time, real-world situations, where students become skilled by applying newly aquired skills into action and more confident in making critical decisions with the use of ongoing, customized and detailed feedback.

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Aims/Objectives

- To obtain general overview of advantages of advanced learning environments in advanced educational settings
- To understand the purpose of the advanced clinical education
- To narrate feedback-related importance

Learning Outcomes by the end of this session students will be able to:

- Describe and understand the implications of advanced clinical education
- Define specified contexts and tasks related to the ACE

Key Words

Advanced learning environments	Advanced clinical education	Technology	VLE	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Beom, J. H., Kim, J. H., Chung, H. S., Kim, S. M., Ko, D. R., & Cho, J. (2018). Flipped-classroom training in advanced cardiopulmonary life support. *PloS one*, *13*(9), e0203114. https://doi.org/10.1371/journal.pone.0203114
2. Han ER, Yeo S, Kim MJ, Lee YH, Park KH, Roh H. Medical education trends for future physicians in the era of advanced technology and artificial intelligence: an integrative review. BMC Med Educ. 2019 Dec 11;19(1):460. doi: 10.1186/s12909-019-1891-5. PMID: 31829208; PMCID: PMC6907217.
3. Obermeyer Z, Emanuel EJ. Predicting the Future - Big Data, Machine Learning, and Clinical Medicine. N Engl J Med. 2016 Sep 29;375(13):1216-9. doi: 10.1056/NEJMp1606181. PMID: 27682033; PMCID: PMC5070532.
4. Pershing S, Fuchs VR. Restructuring medical education to meet current and future health care needs. Acad Med. 2013 Dec;88(12):1798-801. doi: 10.1097/ACM.0000000000000020. PMID: 24128642.

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2. Jaffe, L.E., Lindell, D., Sullivan, A.M. *et al.* Clear skies ahead: optimizing the learning environment for critical thinking from a qualitative analysis of interviews with expert

teachers. *Perspect Med Educ* **8,** 289–297 (2019). https://doi.org/10.1007/s40037-019-00536-5
3. Johnston SC. Anticipating and Training the Physician of the Future: The Importance of Caring in an Age of Artificial Intelligence. Acad Med. 2018 Aug;93(8):1105-1106. doi: 10.1097/ACM.0000000000002175. PMID: 29443717.

A) classmates the aspects of learning environment any area of your choice related to advanced clinical education. (maybe assignment??)

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 1.1 Discuss with your classmates the benefits of advanced clinical education in any area of medical discipline.
Exercise 1.2 Post your answer in 300 words on Talk Forum and comment on at least three of your colleagues' posts.

Recommended number of work hours for the student 17 hours

TITLE:

Strategies for planning

(2nd Week)

Summary By carefully specifying the educational outcomes and planning the strategies in aspects of behaviourally measurable ways, by being focused not only on students' graduation based on accumulation of course credits, the way of faculty teaching will also improve, and students will learn more efficiently. In this frame, graduation becomes contingent upon demonstrating mastery of a defined set of competencies.

Introductory Remarks The recognition of learning opportunities in the curriculum map, passing of rules operable by tutors to provide learning opportunities, the commitment of the tutors and their interest in creating learning opportunities, conduct and continuous monitoring of the implementation of the learning opportunity written in the curriculum, provision of opportunities for students to use clinical reasoning in patient management, provision of opportunities for self-learning, evidence-based clinical education, and immediate feedback plays significant areas in strategy planning. Clinical setting is among clinical education components and includes inpatient and outpatient settings, community settings, and clinical skills learning centers. A clear development of goals and awareness of medical students of the expected competency of a general physician, along with the assignment of responsibility to learners according to their level, were requirements considered by the participants as contributory to effective learning. Components such as the instructors, learning materials and the appropriate environment are essential in the clinical environment. Evidence suggests that the interaction between these components determines student learning. Therefore, learning during clinical education is partly related with the instructors' characteristics. Creating learning opportunities has been emphasized. Literature also appoints that communication with the real patient is very important for learning, and that it is necessary to experience increased responsibility for patient care under the supervision of an experienced physician. The design and planning of learning opportunities, the creation of a nonthreatening educational environment and student supervision, and the adoption of appropriate and student-centered learning strategies are important criteria for obtaining optimal conditions. Efficient strategy planning based related to professional competence should focus on following domains: patient care; medical knowledge; practice-based learning and improvement; interpersonal and communication skills; professionalism; and system-based practice. For each domain of competencies, there are four levels (Miller) to be assessed and they are related to as follows: (a) knows (knowledge)—recall of facts, principles, and theories; (b) knows how (competence)—ability to solve problems and describe procedures; (c) shows how (performance)—demonstration of skills in a controlled setting; and (d) does (action)—behavior in real practice. Simulation technology is increasingly being used to

assess the first three levels of learning because of its ability to program and select learner-specific findings, conditions, and scenarios, to provide standardized experiences for all examinees, and to include outcome measures that provide reliable data.

Aims/Objectives

- Contrast different strategies of planning advanced clinical education
- Understand the variety of learning styles
- Discuss the design and strategy planning elements

Learning Outcomes by the end of this session students will learn to:

- Compare requirements for planning advanced clinical education
- Identify different strategic plans in advanced clinical education
- Discuss the competency-related domains

Key Words

Educational strategy planning	Learning style inventories	Competency-based education	Medical education

Annotated Bibliography

- **Basic Sources/Material**
  1. Cayley WE Jr. Effective clinical education: strategies for teaching medical students and residents in the office. WMJ. 2011 Aug;110(4):178-81; quiz 203. PMID: 22413628.

2. Miller GE. The assessment of clinical skills/competence/performance. Acad Med. 1990 Sep;65(9 Suppl):S63-7. doi: 10.1097/00001888-199009000-00045. PMID: 2400509.
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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 2.1 How would you describe your experience regarding advanced clinical education during your undergraduate studies? Post your answer in 300 words on forum.
Exercise 2.2 Discuss with your classmates about their impressions.

Recommended number of work hours for the student 15 hours

TITLE:

Teaching methods

(3rd Week)

Summary Teaching in the clinical environment is defined as teaching and learning focused on, and usually directly involving, patients and their problems. Nowadays more student-centred teaching, a competency-based assessment with emphasis on professionalism in education requires from educators to have an expanded toolkit of teaching skills and clinical expertise.

Introductory Remarks Teaching in the clinical environment is a complex and demanding task. There are two models of clinical teaching for faculty development, successfully used by clinical teachers. Two models are behaviour based and are adaptable by clinical teachers to all clinical settings, The Stanford and Dundee models. The Stanford model is developed by Stanford Faculty Development Centre and provides a categorical framework for evaluation and analysis of teaching. There are seven categories included: promoting a positive learning climate; control of session; communication of goals; promoting understanding and retention; evaluation; feedback; and promoting self-directed learning. This model is most effectively demonstrated in hands-on seminars where educators are enabled to understand and apply this method of analysis to their teaching. The 'Microskills' of teaching, also called the one-minute preceptor due the short time available for teaching in the clinical environment provides a simple framework for daily teaching during patient care, by the use of a five-step approach of getting a commitment, probing for supporting evidence, teaching general rules, reinforcing what was done well, and correcting mistakes. The Dundee outcomes model advocate that the medical profession needs to think more seriously about training their educators and a framework for developing excellence as a clinical educator is needed. Based on this, Harden in late 1990's proposed a 3-circle learning outcomes model to classify skills and abilities that doctors must possess, where the inner circle refers to the fundamental tasks that clinical teachers should be able to perform competently - doing the right thing; the middle circle is representing the teacher's approach to clinical teaching with understanding and application of relevant learning theories - doing the thing right, and the outer circle represents the development of the individual through a professional approach

to teaching in the clinical environment - the right person doing it. For the inner circle, the essential tasks are referring to time efficient teaching, inpatient teaching, outpatient teaching, bedside teaching, assessment of learners in the work setting and giving feedback. The middle circle can be defined as showing enthusiasm for teaching and towards learners by understanding learning principles relevant to clinical teaching, by using appropriate learning strategies for different levels of learner, by knowing and applying principles of giving feedback, by role modelling, and by 'grasping the unexpected teaching moment'. The outer circle refers to attitudinal and emotional competencies of the educator, besides the mastery of all technical competencies. These tasks for educators include self-reflections, professional development in teaching, mentoring and soliciting feedback on teaching.

Aims/Objectives

- Understand the models related to faculty development in advanced clinical education
- Describe the major elements of teaching methods in advanced clinical education
- Discuss the impacts of professional development

Learning Outcomes by the end of this session students will learn how to:

- Describe the framework for evaluation and analysis of teaching
- Discuss the framework elements for excellence in teaching
- Reflect on unexpected teaching moments
- Identify challenges is clinical education

Key Words

Clinical teaching	Faculty development	Professional development	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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3. Hardeman W, Sutton S, Griffin S, Johnston M, White A, Wareham NJ, Kinmonth AL. A causal modelling approach to the development of theory-based behaviour change

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 3. This will be a group assignment. One group needs to develop a teaching approach for any subject on medicine based (keep the subject as simple as possible) on the Stanford model and the other team on the Dundee model. Each teaching framework needs to incorporate all elements of the theoretical model and should not exceed 1000 words with references excluded.

Recommended number of work hours for the student 17 hours

TITLE:

Time-efficient teaching

(4th Week)

Summary Clinical educators are facing challenge about simultaneously caring for patients and teaching learners in a time constrained environment. To achieve the desired combined caring and teaching goal in a time-efficient manner, clinical teachers use various strategies.

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Introductory Remarks In clinical settings, educators need time-efficient advanced methods to help them to assess the learner's level of knowledge and skill, teach quickly, and provide relevant feedback on performance. Irby and Wilkerson are describing strategies to identify the needs of each individual learner, to teach according to these specific needs, and to provide feedback on performance. In identifying learners needs, if the educator can quickly determine what an individual learner needs to know, then the teaching will focus towards on those needs, and saving time by not teaching what the learner already knows or is not ready for. To assess the learner's knowledge-level quickly, educator will need only two tools of good questions and the ability to listen and observe. Related to the teaching according to the identified specific needs, there are several models which provides flexibility for adapting instruction to the needs of each learner and the constraints of the environment, and when a a clinical educator decide to adopt any of the models, the expectations about what will happen and why needs to be communicated. Examples of the models such are the one-minute preceptor model, the Aunt Minnie model, and the SNAPPS (Summarise, Narrow down, Analyse, Probe, Plan) are included in this. The "activated" demonstrations, and the case demonstrations at bedside are based on similar strategies. By observing learners directly is an important prerequisite for effective feedback, it should be based on observed behaviours, to include positive and improvements-related feedback and the educators are required to promote self-assessment by the learners.
The advanced planning, the teaching, the evaluation and reflecting holds the key features for time-effective education.

Aims/Objectives

- Understand how advanced planning should be achieved
- To provide general overview in identifying
- Discuss time-efficient methods

Learning Outcomes By the end of this session students will be able how to:

- Describe the elements of advanced planning related to time-efficinecy
- Compare and contrast models of time-efficient teaching
- Analyze the influence of evaluation

Key Words

Time-efficiency	Teaching models	Advanced planning	Evaluation	Feedback	Medical education

Annotated Bibliography

- **Basic Sources/Material**

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3. Ramani S, Leinster S. AMEE Guide no. 34: Teaching in the clinical environment. Med Teach. 2008;30(4):347-64. doi: 10.1080/01421590802061613. PMID: 18569655.
4. Shaterjalali, M., Changiz, T., & Yamani, N. (2018). Optimal clinical setting, tutors, and learning opportunities in medical education: A content analysis. Journal of education and health promotion, 7, 130. https://doi.org/10.4103/jehp.jehp_56_18

- **Supplementary Sources/Material**

1. Duncan GF, Roth LM, Donner-Banzhoff N, Boesner S. Teaching points-do they occur and what do they contain? An observation study concerning the general practice rotation. BMC Med Educ. 2016 Apr 18;16:113. doi: 10.1186/s12909-016-0636-y. PMID: 27091199; PMCID: PMC4834827.

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Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 4.1 Watch carefully the following videos:

https://www.youtube.com/watch?v=yhsxYYhS6_A&ab_channel=LincolnMemorialUniversity

https://www.youtube.com/watch?v=64rgRbFkLCo&ab_channel=christyfoster2002

https://www.youtube.com/watch?v=cEZOjSyPhZ0&ab_channel=RhPAP

Write your comments related to the videos at Exercise 4.1 and post your answer in 300 words, excluded references on forum.

Exercise 4.2. In the previous week, each team used a different model to address an issue in clinical education. This week you are asked to respond again collectively in a reflective manner in the other team's post highlighting strengths and addressing possible deficiencies.

Recommended number of work hours for the student 17 hours

TITLE:

Inpatient- and Outpatient teaching

(5th Week)

Summary The inpatient and outpatient doctors and educators are facing opportunities and challenges of combining a busy clinical practice with teaching responsibilities. The planning strategies, teaching methods and reflective practices are playing essential elements in to teach and lead a team of trainees.

Introductory Remarks As Ende in late 90's highlighted, the role of the inpatient teacher is one of the most challenging in medical education, that of a master, mentor, supervisor, facilitator, or all of the above. Inpatient teaching can be even chaotic and frustrating, as students of varying levels of sophistication and interest not taking so well interruptions and urges to sleep, while the attending physician holds forth on unanticipated topics, and about patients who may not be available. During inpatient education, the planning is focused towards jointly set expectations related to rounds and patient care, the structure of the rounds, the presentations, the number and complexity of patients, and communication. There are numerous challenges in both educational areas what may be successfully overbridged by basic principles path to follow. Teachers should try to facilitate knowledge acquisition by asking questions that make learners think and reason rather than recall facts. More importantly, knowledge should be applied to specific patients for clinical problem solving. Teachers should have some knowledge of different learning styles and adapt their teaching style to different learners. Teachers can set a comfortable and safe learning environment in which they and the learners freely ask questions and are prepared to admit their limitations. Inpatient teams also need to behave as a teaching community where each member respects the other in order to maximize their learning. Teachers should learn to challenge their learners without humiliating them and provide support so that learning can be promoted.

The time constraints, varying learner levels, unexpected teaching moments, presence or absence of the patient will have impact in both settings. By decreasing hospital stays, it has become moreless impossible for trainees to follow and learn the natural history of a disease from the inpatient environment. The outpatient settings provide one area where trainees may learn this, to follow the patient over time and also to have insights into the psychosocial aspects of patient care. The outpatient clinics, by being extremely overloaded by work and challenging settings, actually have quite a short teacher-trainee interaction possibilities. The clinical educators are entitled to provide direct patient care while supervising and trying to teach students and residents. Furthermore, patients may not be interested in being participants of a trainee-teaching phase, although, the outpatient clinic provide significant educational opportunities by incorporating closer relationships between teachers and learners, more complete observation of chronic

diseases, and a more appropriate forum for teaching preventive medicine, medical interviewing, and psychosocial aspects of disease. Under these specific circumstances, the efficient education should be based on preparation for the visit, and on teaching during and after the visit by summarizing brief history, considering and analyse differential diagnosis, treatment management and self-reflections by learners based on cases.

Aims/Objectives

- To provide general overview of in- and outpatient clinical education
- Understand the princliples of planning and educational strategies
- Describe the application of three-circle outcome models

Learning Outcomes By the end of this session students will be able to:

- Identify different examples of in- and outpatient teaching
- Describe the challenges
- Discuss the responsibilities of clinical educator

Key Words

Summative assessment	Narrative assessment	Feedback	Assessment evaluation	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. McGee SR, Irby DM. Teaching in the outpatient clinic. Practical tips. J Gen Intern Med. 1997 Apr;12 Suppl 2(Suppl 2):S34-40. doi: 10.1046/j.1525-1497.12.s2.5.x. PMID: 9127242; PMCID: PMC1497226.
2. Oliveira Franco RL, Martins Machado JL, Satovschi Grinbaum R, Martiniano Porfírio GJ. Barriers to outpatient education for medical students: a narrative review. Int J Med Educ. 2019 Sep 27;10:180-190. doi: 10.5116/ijme.5d76.32c5. PMID: 31562805; PMCID: PMC6773369.

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- **Supplementary Sources/Material**

1. Ogrinc G, Mutha S, Irby DM. Evidence for longitudinal ambulatory care rotations: a review of the literature. Acad Med. 2002 Jul;77(7):688-93. doi: 10.1097/00001888-200207000-00008. PMID: 12114141.
2. Skeff KM, Stratos GA, Mygdal W, DeWitt TA, Manfred L, Quirk M, Roberts K, Greenberg L, Bland CJ. Faculty development. A resource for clinical teachers. J Gen Intern Med. 1997 Apr;12 Suppl 2(Suppl 2):S56-63. doi: 10.1046/j.1525-1497.12.s2.8.x. PMID: 9127245; PMCID: PMC1497229.

Assignment 1 graded by Instructor
This is a graded assignment and accounts for 30% of your total assignment grade

Contrast and compare the Stanford Faculty Development model with the Dundee outcome model in clinical education. Submit an Essay of 4000 words, references excluded.

Recommended number of work hours for the student 20 hours

TITLE:
Aspects of bedside teaching

(6th Week)

Summary Bedside teaching is considered as the most effective method to teach clinical skills and communication skills. It has been described as one of the ideal clinical teaching modalities, in which history taking and physical examination skills, together with professional attitude, can be combined to provide a holistic approach among diagnostic process and patient care.

Introductory Remarks Dating back from the time of Hippocrates, the father of bedside medicine, who advocated putting the patient rather than the disease at the centre of the learnig, the bedside teaching become a well-established method of teaching. The patient is at the center of clinical medicine. In order to effectively teach clinical skills, an instructor should learn to achieve how to involve patients in the educational process. The bedside teaching is a specialised form of small group teaching that takes place in the presence of the patient. Bedside teaching can improve students' history taking, examination skills, and knowledge of clinical ethics, can teach them professionalism, and can foster good communication and role modelling skills. The educational sessions integrate theory, practical skills, and patient contact to make the educational process as realistic as possible, and they allow the students to develop empathy with the patients. Teaching small groups in the presence of the patient allows trainees to be closely observed and taught clinical practice and medical examinations.
Rather than listening to a presentation or reading from a blackboard, learners have the opportunity to use most of their senses—hearing, vision, smell, and touch—to learn more about the patients and their problems. Bedside teaching can provide relevant contextualized learning which focuses on the patient, giving learners an opportunity to develop their clinical reasoning. Aldeen and Gisondi found that patients themselves may benefit through improved therapeutic relationships and receiving education about their condition. Watson et al. proposed a novel teaching programme, the interprofessional bedside teaching, to facilitate patient-centred holistic learning and provide a forum where individuals can learn about the skill sets of other members of the multidisciplinary team. It is based on a 'patient-centred learning model', where the patient is at the centre of the learning. Information is shared in a multidirectional way, from patient to health-care staff, health-care staff to patient and between the different interprofessional learners. In this way, participants are able share their knowledge within the learning circle. By the fact that the patient is the focus, the learning become relevant to all. The programme was designed to increase the confidence of the interprofessional team in facilitating bedside teaching. Ramani in 2003 found that those who feel more confident teaching are more likely to teach. Ramani also described twelve practical tips to release educators discomfort at

bedside teaching and these tips are related to preparation, planning, orientation, introduction, interaction, observation, instructions, summary, debriefing, reflection, feedback and the preparation for the next encounter which should begin with insights from the reflection phase.

Aims/Objectives

- To provide general overview bedside education
- Discuss the factors which may have influence
- Reflect on settings challenges

Learning Outcomes By the end of this session students will learn how to:

- Understand the concept bedside clinical education
- Identify the challenging factors
- Analyze advantages, disadvantages and strategies towards bedside teaching

Key Words

Bedside teaching	Clinical settings	Educational challenges	Advanced clinical education	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Aldeen AZ, Gisondi MA. Bedside teaching in the emergency department. Acad Emerg Med. 2006 Aug;13(8):860-6. doi: 10.1197/j.aem.2006.03.557. Epub 2006 Jun 9. PMID: 16766739.
2. Ramani S. Twelve tips to improve bedside teaching. Med Teach. 2003 Mar;25(2):112-5. doi: 10.1080/0142159031000092463. PMID: 12745516.
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- **Supplementary Sources/Material**

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2. Williams KN, Ramani S, Fraser B, Orlander JD. Improving bedside teaching: findings from a focus group study of learners. Acad Med. 2008 Mar;83(3):257-64. doi: 10.1097/ACM.0b013e3181637f3e. PMID: 18316871.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 6.1 Describe the benefits of bedside teaching model. Create an e-poster and post it on forum.

Exercise 5.2 Comment at least two of your peers' posts.

Recommended number of work hours for the student 17hours

TITLE:

Importance of simulation in clinical education

(7th Week)

Summary Simulation-based education is a rapidly developing discipline that can provide safe and effective learning environments for students'. Medical simulation allows the acquisition of clinical skills through deliberate practice rather than an apprentice style of learning. Simulation tools serve as an alternative to real patients. A trainee may make mistakes and learn from them without the fear of harming the patient.

Introductory Remarks The high-fidelity medical simulations are educationally effective and simulation-based education complements medical education in patient care settings. Calls for a change in the instructional methods have resulted in innovative medical curricula. The new curricula stress the importance of proficiency in several clinical skills by medical graduates rather than mere acquisition of knowledge. Nowadays, it is universally accepted that clinical skills constitute an essential learning outcome. As emphasized earlier, simulators can be classified according to their resemblance to reality into low-fidelity, medium- fidelity and high-fidelity simulators. The low-fidelity ones are usually used to teach novices the basics of technical skills, the moderate level ones are assigned to provide give more resemblance of reality, like pulse, heart sounds, breathing sounds, however, without the ability to talk and cannot simulate chest or eye movements. They suitable for the introduction and deeper understanding of specific, increasingly complex competencies, while High fidelity simulators combine part or whole body manikins to carry the intervention with computers that drive the manikins to produce physical signs and feed physiological signs to monitors, and They can talk, breathe, blink, and respond either automatically or manually to physical and pharmacological interventions. Simulations include devices, trained persons, virtual environments, and contrived social situations that mimic problems, events, or conditions that arise in professional encounters. In simulation-based education (SBE), clinical situations and events can be scheduled, observed and then repeated so learning can be consolidated, it can also ensure that students have a degree of clinical competence before exposure to real patients, and is able to enhance the transfer of theoretical knowledge to the clinical context and ease the transition to the clinical years and into the workforce. SBE also allows deconstruction of clinical skills into componential parts, and students can be introduced to scenarios and tasks appropriate for their stage of learning. As there is no complexities of dealing with real patients, students can be more focused on mastering basic skills and can more readily abstract principles from their experiences to apply in other settings. The strategies for transition from SBE to clinical practice are focused around the alignment of SBE program goals with the needs of individual learners,

including other curriculum goals and activities , to optimise the timing of SBE interventions to meet learner needs, to provide opportunities for repeated practice with feedback and structured learner reflection with aim to broaden the application of SBE to clinical experiences, to contextualise SBE for immersive simulations by recreating key elements of clinical settings or using in situ simulation, to establish continuity between simulated and clinical learning environments, to maintain close working relationships between clinicians, educators during the development of SBE programs.

Aims/Objectives

- To provide a general overview of simulation-based education
- To discuss the benefits of different fidelity-related methods
- To evaluate the planning strategies

Learning Outcomes By the end of this session students will learn how to:

Understand the advantages of simulation-based learning and its integration in education
Analyze the curriculum-related topics in implementing simulation-based advanced clinical education
Identify and discuss the potential disadvantages

Key Words

Simulation-based education	High-fidelity resources	Self-reflections	Strategy planning	Medical education

Annotated Bibliography

- **Basic Sources/Material**
  1. Al-Elq AH. Simulation-based medical teaching and learning. J Family Community Med. 2010 Jan;17(1):35-40. doi: 10.4103/1319-1683.68787. PMID: 22022669; PMCID: PMC3195067.

2. Davis MH. AMEE Medical Education Guide No. 15: Problem-based learning: a practical guide. Med Teach. 1999;21(2):130-40. doi: 10.1080/01421599979743. PMID: 21275726.

3. Harden RM, Crosby JR, Davis MH, Friedman M. AMEE Guide No. 14: Outcome-based education: Part 5-From competency to meta-competency: a model for the specification of learning outcomes. Med Teach. 1999;21(6):546-52. doi: 10.1080/01421599978951. PMID: 21281173.
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- **Supplementary Sources/Material**

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2. Datta R, Upadhyay K, Jaideep C. Simulation and its role in medical education. Med J Armed Forces India. 2012 Apr;68(2):167-72. doi: 10.1016/S0377-1237(12)60040-9. Epub 2012 Apr 21. PMID: 24623932; PMCID: PMC3862660.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 7. Each one of you will be allocated with a different instructor in the disciplines defined in the week's available topics and instructors. Your task will be to work with the instructor devising a simulation scenario (along with learning outcomes) which the instructor will then deliver. The recording of the session will be available to you. In a post of 1000 words, references excluded, critically reflect on the strengths, weaknesses both on the design and the delivery of the simulation in the clinical year students.

Recommended number of work hours for the student 15 hours

TITLE:

Effective feedback in clinical education

(8th Week)

Summary Feedback in clinical education refers to specific information about the comparison between a trainee's observed performance and a set of standards, provided with intent to improve the trainee's performance. It is essential for a students' or residents' to gain an insight into what they did well, where should their improvement focus on and the consequences of those actions.

Introductory Remarks In the clinical environment it is vital to provide feedback to trainees, as students' needs to receive adequate and relevant information's regarding the demonstrated strengths and with provided improvement point during their observed performances. It is a crucially important stage in the acquisition of clinical skills, although, literature appoints that clinical educators in some cases either miss to provide feedback altogether or the quality of their feedback does not give clear reflections about the trainees' strengths and weaknesses, and in both cases, this may result in adverse consequences, might affect to patient care in later period. Educators need to observe their trainees during their patient-interactions and simulations to be able to provide effective feedback. Structure-wise, feedback can be formal or informal, brief-, immediate or long, what should be scheduled, formative during the course of the rotation or summative at the end of a specific rotation. When the educational goals are set in advance of the certain rotation of other educational framework, feedback is essential to examine the accomplishment or the lack of stated goals, re-define new goals and make action plans to address such. The feedback will underline to the students' where they are in comparison to where they should be and where they should move on to. When feedback is appropriately provided, it will enhance self-reflection and self-assessment, which holds significant importance for lifelong learning. The observed barriers to feedback go towards the lack of direct observation of trainees by their educators and instructors, and as well, learners' clinical competence cannot be assessed by written exams, self-reports or third-party observations. There are certain interpersonal barriers exist as well, due to reluctance of providing feedback of a negative content, and the fear behind it, how trainees might receive such. General and quite often inappropriate statements merged into short messages, such as "well done", or "poor communication with patient" should be avoided. Ramani in 2012 provided twelve tips for giving feedback effectively in clinical environment, as listed below:

- Establish a respectful learning environment
- Communicate goals and objectives for feedback

- Base feedback on direct observation
- Make feedback timely and a regular occurrence
- Begin the session with the learner's self-assessment
- Reinforce and correct observed behaviours
- Use specific, neutral language to focus on performance
- Confirm the learner's understanding and facilitate acceptance
- Conclude with an action plan
- Reflect on your feedback skills
- Create staff-development opportunities
- Make feedback part of institutional culture

As it has been underlined earlier, feedback has to be constructive, and it should to be provided in an appropriate setting, to focus on the observed performance, to be clear and specific, to be communicated in non-judgmental language with emphasizing positive aspects, should be more descriptive than evaluative, and as mandatory, to include suggestions for improvement measures.

Aims/Objectives

- To discuss how to reflect on observed trainee performance
- Identify reactions to delivered feedback
- Analyze the barriers for feedback in advanced clinical education

Learning Outcomes By the end of this session students will learn how to

- Compare feedback strategies under advanced clinical education settings
- Identify feedback barriers
- Discuss the elements of constructive feedback delivery

Key Words

Feedback in clinical education	Barriers for feedback	Constructive feedback	Advanced clinical education	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Bing-You RG, Trowbridge RL. Why medical educators may be failing at feedback. JAMA. 2009 Sep 23;302(12):1330-1. doi: 10.1001/jama.2009.1393. PMID: 19773569.
2. Brukner H. Giving effective feedback to medical students: a workshop for faculty and house staff. Med Teach. 1999;21(2):161-5. doi: 10.1080/01421599979798. PMID: 21275731.
3. Jug R, Jiang XS, Bean SM. Giving and Receiving Effective Feedback: A Review Article and How-To Guide. Arch Pathol Lab Med. 2019 Feb;143(2):244-250. doi: 10.5858/arpa.2018-0058-RA. Epub 2018 Aug 13. PMID: 30102068.
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- **Supplementary Sources/Material**

1. Hewson MG, Little ML. Giving feedback in medical education: verification of recommended techniques. J Gen Intern Med. 1998 Feb;13(2):111-6. doi: 10.1046/j.1525-1497.1998.00027.x. PMID: 9502371; PMCID: PMC1496906.
2. Van Hell EA, Kuks JB, Raat AN, Van Lohuizen MT, Cohen-Schotanus J. Instructiveness of feedback during clerkships: influence of supervisor, observation and student initiative. Med Teach. 2009 Jan;31(1):45-50. doi: 10.1080/01421590802144294. PMID: 18825544.

Weekly Self-Assessment & Interactive Exercises/Activities

Reflective Assignment (25% of the total assignment grade)

Exercise 8. Analyze and reflect on Ramani's twelve-point tips for giving feedback effectively in clinical education. In order to reach a meaningful reflection, use a personal experience either as a trainer or as a trainee. Your reflective account should be of 2000 words refencing excluded in the word count.

Recommended number of work hours for the student 15 hours

TITLE:

Assessment in clinical education

(9th Week)

Summary Assessment have an important role in the process of medical education, it plays major role in medical students live, and have implications towards society by certifying competent physicians who are able to provide adequate care to their patients.

Introductory Remarks As Miller defined in his pyramid for assessment of learners' clinical competence, the base of the pyramid is the knowledge – tested by written exams, the next level is the applications of knowledge – tested by clinical problem solving. It is followed by the demonstration of clinical skills, tested via OSCE, clinical competency exams, etc, and ending by the daily patient care, assessed by the direct observation of the performance under clinical settings. Norcini stated that the principal measures of performance in the clinical environment include patient outcomes, process of care and volume of services doctors provide what may be challenging to observe and follow. Clinical educators should gain familiarity with an outcomes-based assessment method appropriate to their own environment (UEMS, LCME, etc.). Rethans suggested that the distinction between competency-based and performance-based methods is important and in the Cambridge Model focuses only on the top two tiers of Millet's pyramid. The performance is identified as a product of competence, the influences of the individual (e.g. health), and the influences of the system (e.g. practice time). This model provides a basis for understanding and designing assessments of practice performance. Related to the assessment methods in clinical settings faculty is able to assess any of the performance related procedures what directly relate to patient care. Under these settings, trainees' clinical skills can be assessed outside a simulated or test environment, the non-technical skills such as patient communication, the physical examination, the clinical reasoning, case presentation and self-reflections, teamwork, communication with clinical and nonclinical staff and professionalism. Methods of assessment include examining case records and notes for evidence of diagnostic thinking, listening to case presentations, but the most important method of assessment for clinical teachers would be direct observation. Without observing trainees while performing and at the bedside, educators will not be able cannot collect sufficient and accurate data for delivering appropriate feedback.

Aims/Objectives

- To discuss the assessment elements under clinical settings
- To provide a general overview related to outcome-based assessment
- To understand the word-based assessment of trainees' in clinical education

Learning Outcomes By the end of this session student will learn how to

- Discuss the assessment role in advanced clinical education
- Identify the importance of performance outcomes
- Describe and analyze different performance-based assessment methods

Key Words

Assessment	Clinical setting	Performance-based assessment	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Gleeson, F. (1997). AMEE Medical Education Guide No. 9. Assessment of clinical competence using the Objective Structured Long Examination Record (OSLER). Medical Teacher, 19(1), 7–14. doi:10.3109/01421599709019339
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3. Ramani S, Leinster S. AMEE Guide no. 34: Teaching in the clinical environment. Med Teach. 2008;30(4):347-64. doi: 10.1080/01421590802061613. PMID: 18569655.
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- **Supplementary Sources/Material**

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2. Griffin, P. (1997b). Assessment principles for OBE, In Griffin, P., & Smith, P. Outcomes-Based Education: Issues and Strategies for Schools (pp. 21 -24). ACSA: Canberra.
3. Suskie, L. (2009*).* Assessing student learning: A common sense guide. (2nd ed). San Francisco, CA: Jossey-Bass

Weekly Group Assignment This counts for 10% of your total assignment grade

Assignment 2. This is be a graded assignment. Your class will be divided into groups and you will submit one paper as a group. The title of the assignment is “What an educator should be able to perform in an efficient advanced clinical setting?” Please reflect also on challenges what you consider as important. Submit an essay as a group. Word count 4000 words, references excluded.

Recommended number of work hours for the student 20 hours

2nd TELECONFERENCE/GROUP CONSULTATION MEETING

This group consultation meeting will refer and reflect on sessions from 2nd to the 9th week.

All questions, suggestions, comments and ideas are welcome. There will be a dedicated area at Group Forum platform where you can post and reflect on earlier sessions in advance and we will have a group discussion regarding the raised issues and topics.

Active involvement by all sides is strongly advised and will be highly appreciated.

TITLE:

Reflective portfolios for effective clinical education

(10th Week)

Summary A portfolio containing both reflective and comprehensive components is then able to function in a range of academic spheres and provide a theoretical platform for the wide range of non-clinical empirical work undertaken in clinical settings.
Portfolios can encourage students to take more ownership and responsibility over the learning process. Portfolios are a way for students to critique and evaluate their own work and academic progress, often during the process of deciding what will be included in their portfolios.

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Introductory Remarks Portfolios may be used to teach and assess attitudes and professionalism that are difficult to assess by other means. They may be used to teach and learn a range of outcomes. If they incorporate assessments from a range of settings they should be able to assess all four levels of Miller's pyramid if results from work based assessments. Nowadays it's a multipurpose instrument.
The reflective portfolio is primarily aimed at developing reflective skills in learners. They are a self-contained part of the curriculum, where the reflection is an expected part of the curriculum the student contributes to, or an assignment to an existing course, while the comprehensive portfolio is integrated to the curriculum as an assessment part, it facilitates student's learning and assess their progress, contain multiple data, and self-reflections. Portfolios are an extremely useful tool to assess students' acquisition of skills and attitudes, by stimulating their self-reflection, offering constant feedback and documenting learners progress. Portfolios are increasingly used in postgraduate medical education and at specific internship training as an assessment tool, as documentation of competence, as a database of procedure experience and for revalidation purposes. The use of portfolios for assessment in the healthcare professions was developed as a part of a move away from "snapshot" examinations, to directions to a broader methods of assessment. This form of assessment is thought to encourage closer links between assessment and learning by improving learning outcomes using assessment and providing feedback. The use of a portfolio is will contribute the enhancement of the assessment areas that are difficult to assess by traditional methods in a wide range of clinical contexts. These areas include personal attributes, attitudes, reflection and professionalism. Portfolios are being increasingly used in postgraduate medical education to assess ability to progress. Several models of portfolios have been described, and the appropriateness of each model rely on its purpose and whether it will be used in an assessment process, usually four of them are in use. The different types of portfolio

will have varying degrees of educational impact. In a model which records only educational events but does not provide overall reflection (for example the “toast rack” may not foster learning and may be seen as a box ticking exercise. In contrary, the *“cake mix”* model includes evidence and reflection, therefore may increase educational impact by enabling an individual to reflect on learning. An advantage of using portfolios as a means of assessment is that gaps in training may be identified, especially if the *“spinal column”* or *“toast rack”* models are used. Presenting evidence from other assessments within a portfolio is also possible.
Davis and Ponnamperuma in 2006 proposed five steps in the portfolio assessment process. They are as follows:

1. Collection of the evidence of learning.
2. Reflection of the learning.
3. Evaluation of evidence by assessors.
4. Defence of evidence by the individual being assessed.
5. An assessment decision. All the assessors involved, should make a decision based on pre-defined criteria.

These are frequently used in medical education to demonstrate competencies in a range of clinical and non-clinical skills and this use will contribute to improve the reliability and validity of the used tools.

- To provide a general overview how reflective tools can prove assessment
- of the importance of feedback related to logbooks and portfolios
- To understand the strategies to engage more students in reflection and to objectively assess

Learning Outcomes By the end of this session, students will learn how to

- Discuss the advantages of reflective tools in assessment
- Identify the level of flexibility of logbooks
- Describe the feedback delivery

Aims/Objectives

- To obtain a general overview how portfolios are used in clinical education
- Understand the wide spectrum of the portfolio purposes
- Describe the portfolio assessment process in advanced clinical education

Learning Outcomes By the end of this session student will learn how to

- Understand the portfolio models
- Compare reflective and comprehensive portfolios
- Discuss the advantages of portfolio assessment in clinical education

Key Words

Reflective portfolio	Comprehensive portfolio	Portfolio models	Assessment	Medical education

Annotated Bibliography

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1. Baume D, editor. LTSN Generic Centre Assessment Series No.6: A Briefing on Assessment of Portfolios. York: Learning & Teaching Support Network; 2001.
2. Davis MH, Ponnamperuma GG. Portfolios, projects and dissertations. In: Dent JA, Harden RM, editors. A practical guide for medical teachers. London: Elsevier Churchill Livingstone; 2006.
3. Haldane T. (2014). "Portfolios" as a method of assessment in medical education. *Gastroenterology and hepatology from bed to bench*, *7*(2), 89–93.
4. Van Tartwijk J, Driessen EW. Portfolios for assessment and learning: AMEE Guide no. 45. Med Teach. 2009 Sep;31(9):790-801. doi: 10.1080/01421590903139201. PMID: 19811183.

- **Supplementary Sources/Material**

1. Webb C, Endacott R, Gray M, Jasper M, Miller C, McMullan M, Scholes J. Models of portfolios. Med Educ. 2002 Oct;36(10):897-8. doi: 10.1046/j.1365-2923.2002.01318.x. PMID: 12390454.

2. Roberts C, Newble DI, O'Rourke AJ. Portfolio-based assessments in medical education: are they valid and reliable for summative purposes? Med Educ. 2002 Oct;36(10):899-900. doi: 10.1046/j.1365-2923.2002.01288.x. PMID: 12390455.

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 10.1 Compare and contrast the portfolio models and post your answer it 300 words on forum. References excluded.
Exercise 10.2 Comment meaningfully on at least three of your classmate's.

Recommended number of work hours for the student 15 hours

TITLE:

Logbooks in advanced clinical education

(11th Week)

Summary Logbooks are widely used to set learning outcomes and to structure and standardize teaching in clinical settings. They can serve as a valuable tool for training in clinical settings, especially when multiple sites are involved.

Introductory Remarks Logbooks are frequently worldwide in various fields from undergraduate to postgraduate training in electronic or paper format. In developing clinical expertise it has crucial importance that students receive integrated experiences, see polymorphic cases of typical diseases and are able to repeatedly practice their competencies under clinical settings (Regehr & Norman 1996). The literature found that the quality of clinical teaching depends on the number and type of patients (Dolmans et al. 1999) and also on the educational expertise of the clinical educator (Jolly 1994). Logbooks have been introduced in clinical education to ensure consistent quality and educational standards, as they serve as a collection of learning objectives and additional informations related to a specific educational period. To successfully implement logbooks into clinical training it is necessary to develop the logbook carefully, inform and involve stakeholders, to provide the necessary resources and to integrate the logbook in the curriculum. According to the literature related to the practice, the use of logbooks was still found deficient, although they provide variety of learning objectives to ensure consistent educational standards in clinical training, may give a fast overview over requirements of clinical training, and were found as very useful if multiple sites are involved in the clinical education. Furthermore, they facilitate communication between the trainee and clinical educator, help to structure and standardize learning in clinical settings, and may assist supervisors and trainees to identify which learning objectives have not yet been accomplished and to set a learning plan. Schüttpelz-Brauns et al. in 2016 provided useful tips for the best use of logbooks in clinical education, by covering the following aspects: to use all resources you can obtain and do not repeat work that has already been done; to involve all stakeholders and embed the introduction of logbooks into a change management process; to keep the content short, simple and precise; to mind about legal issues; to use a handy logbook format; to make the logbook an integral part of the curriculum; to mentor and supervise learning objectives; to provide time and space for teaching and learning; to establish an easy going workflow;

to implement an evaluation cycle to optimize logbook-location-fit; to Inform staff and trainees before starting; and to train supervising physicians and mentors.
While portfolios focus on students' documentation and self-reflection about their learning activities, logbooks set clear learning objectives and help to structure the learning process in clinical settings and to ease communication between the trainee and the clinical educator.
To implement logbooks in clinical training successfully, logbooks have to be an integrated part of the curriculum and the daily routine on the ward. If a continuous measures of quality management are undertaken, logbooks serve as a valuable tool for education in clinical settings.

Aims/Objectives

- Understand the concept of logbooks in clinical education
- Discuss the purposes of logbooks assessment
- Understand the importance of continuous quality-related measures while using logbooks

Learning Outcomes By the end of this session, students will learn how to

- Identify the advantages of logbooks in clinical settings
- Describe the disadvantages related to logbooks in clinical education
- Contrast and compare logbooks and portfolios in clinical education

Key Words

Logbooks	Clinical education	Reflective design	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Dennick R. Case study 2: Use of logbooks. Med Educ. 2000;34(S1):66–68.
2. Dolmans D, Schmidt A, van der Beek J, Beintema M, Gerver WJ. Does a student log provide a means to better structure clinical education? Med Educ. 1999;33(2):89–94.
3. Jolly BC. Clinical logbooks: Recording clinical experiences may not be enough. Med Educ. 1999;33(2):86–88.
4. Regehr G, Norman GR. Issues in cognitive psychology: Implications for professional education. Acad Med. 1996;71(9):988–1001

- **Supplementary Sources/Material**

1. Dale VH, Pierce SE, May SA. Benefits and limitations of an employer-led, structured logbook to promote self-directed learning in the clinical workplace. J Vet Med Educ. 2013;40(4):402–418.
2. Schei E, Fuks A, Boudreau JD. Reflection in medical education: intellectual humility, discovery, and know-how. Med Health Care Philos. 2019 Jun;22(2):167-178. doi: 10.1007/s11019-018-9878-2. PMID: 30460425.
3. Watters DA, Green AJ, van Rij A. Requirements for trainee logbooks. ANZ J Surg. 2006;76(3):181–184.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 11.1 Have a meaningful discussion with your peers on forum about the about the benefits and drawbacks of logbooks use in clinical education.

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Exercise 11.2 Reflect on what have been discussed and post your answer in 300 words on forum. Use references to support your post.

Recommended number of work hours for the student 15 hours

TITLE:

Educational and clinical supervision

(12th Week)

Summary Despite a lot of similarities, the effective supervision of trainees involves skills that are somewhat different from other more general competences expected of a educator or trainer, and it includes ensuring the safety of the trainee and patient in clinical settings, providing feedback on performance, both informally and through appraisal, it involves initial training and continuing education planning, monitoring progress, ensuring provision of careers advice, and ensuring an appropriate level and amount of clinical duties.

Introductory Remarks The available literature related to supervision in clinical setting is relatively limited. Based on 'Good supervision: Guiding the clinical educator of the 21st century', Kilminster et al. in 2007 defined supervision as "the provision of guidance and feedback on matters of personal, professional and educational development in the context of a trainee's experience of providing safe and appropriate patient care. Educational and trainee supervision must ensure patient and trainee safety as well. The patient safety and the quality of patient care have it's purposes but should also fit in with the trainee's educational objectives. The nature of clinical supervision will vary from speciality to speciality and from unit to unit. Supervisors should ensure that trainees work within their competences and that they are adequately supervised when acquiring new skills. They are mandatory to be competent in the skills to be acquired and in dealing with the complications that may arise from using these skills. Supervisors need to monitor the quality and effectiveness of education and supervision carried out in their responsibilities, and trainees need to have confidence in their supervisors. The empirical evidence from the literature shows that a direct supervision seems to be helpful to trainees gain skills more rapidly; that the quality of the supervisory relationship strongly affects the effectiveness of supervision. The continuity over time in supervisory relation was found as important. The behavioural changes were observed earlier due to supervision, although, changes in thinking and attitude took longer time. This could be considered as important due to changes of supervisors in different rotations. A self-supervision is not reported as effective. Evidence indicates that an effective supervisor is required to have good interpersonal skills, good teaching skills, and to be clinically competent and knowledgeable, in where a clear distinction between teaching and supervising is challenging to be made.

Aims/Objectives

- To provide a general overview about educational and clinical supervision
- To obtain a general overview of the importance supervision
- To understand the framework of supervision

Learning Outcomes By the end of this session, students will learn how to

- Discuss the features of effective supervision
- Identify the difficulties
- Describe supervision activities

Key Words

Educational supervision	Clinical supervision	Framework and challenges	Advanced clinical education

Annotated Bibliography

- **Basic Sources/Material**

1. Kilminster S, Cottrell D, Grant J, Jolly B. AMEE Guide No. 27: Effective educational and clinical supervision. Med Teach. 2007 Feb;29(1):2-19. doi: 10.1080/01421590701210907. PMID: 17538823.
2. McGill DA, van der Vleuten CP, Clarke MJ. A critical evaluation of the validity and the reliability of global competency constructs for supervisor assessment of junior medical trainees. Adv Health Sci Educ Theory Pract. 2013 Oct;18(4):701-25. doi: 10.1007/s10459-012-9410-z. Epub 2012 Oct 2. PMID: 23053869.
3. Subramaniam A, Silong AD, Uli J, Ismail IA. Effects of coaching supervision, mentoring supervision and abusive supervision on talent development among trainee doctors in public hospitals: moderating role of clinical learning environment. BMC Med Educ. 2015 Aug 13;15:129. doi: 10.1186/s12909-015-0407-1. PMID: 26268222; PMCID: PMC4535283.

- **Supplementary Sources/Material**

1. Maudsley RF. Role models and the learning environment: essential elements in effective medical education. Acad Med. 2001 May;76(5):432-4. doi: 10.1097/00001888-200105000-00011. PMID: 11346517.
2. Russell JEA, Adams DM. The changing nature of mentoring in organizations: An introduction to the special issue on mentoring in organizations. J Vocat Behav. 1997;51:1–14. doi: 10.1006/jvbe.1997.1602.

Weekly Assignment graded by instructor

Assignment 3 This is a graded assignment and accounts for 20% of your total assignment grade

You have now an overview related to advanced clinical teaching, feedback and assessment methods. Based on previously learned, submit an essay with the following title “Challenges in advanced clinical education and it’s assessment tools?”. Word limit is 4000 words, references excluded.

Recommended number of work hours for the student 20 hours

TITLE:

Connection between preclinical knowledge and clinical education

(13th Week)

Summary The transition from preclinical to clinical medical education is often described by several challenges which may have various impacts on students' well-being and learning experiences.

Introductory Remarks There are evidence that suggest that medical students do not feel sufficiently prepared for clinical practice in the clerkships. The transition from preclinical to clinical training often indicate difficulties. The difficulties experienced by students are related to professional socialisation and workload, and also towards deficiencies in knowledge and the organisation of knowledge. Haldane highlighted the transition from pre-clinical to clinical education as a particularly stressful period. Causes of stress referred to changes in learning environment, teaching styles and expectations. As causes of stress final-year students mentioned the impending transition from a highly dependent student-role to a delegated responsibility and decision making, and the need to work with other professional groups. The use of more authentic, integrated tasks, where knowledge and application of knowledge are learned together, has been proposed as a way to make the pre-clinical to clinical transition less demanding. The problem-based learning may offer such tasks. Norman and Schmidt in early '90's concluded that PBL promotes the transfer of concepts to new problems, the integration of basic science concepts into clinical problems, intrinsic interest in subject matter and self-directed learning skills. Most recommended measures to ease the stress of the transition are focused on the pre-clinical phase. Related to the clinical phase, students frequently indicated that coaching, feedback and supervision were suboptimal. Knowledge- and skills-wise, students reports that they did not always meet the demands of clinical practice. Several studies indicated that graduates from a PBL medical school were well prepared as regards psychosocial and interpersonal skills. Related the application of knowledge, in a PBL-curriculum students are entitled to learn to use clinical data to reason their way to diagnosis from the start of medical school. Frequently, although the students were able to list the symptoms of many diseases, they were not able to generate a diagnosis when a patient presented with symptoms and complaints, as their knowledge was not tailored to clinical practice, they found themselves forced to change their learning style in the clinical settings, what is contrary to what might be expected in a problem-based learning curriculum.

Aims/Objectives

- To obtain the general overview of connection between preclinical and clinical education
- To provide a general overview of transition
- To understand the challenges

Learning Outcomes By the end of this session students will learn how to

- Analyze and discuss transition-related challenges
- Discuss the aspects of improvements in transition

Key Words

Preclinical education	Clinical education	Transitional challenges	Medical education

Annotated Bibliography

- **Basic Sources/Material**

1. Atherley A, Dolmans D, Hu W, Hegazi I, Alexander S, Teunissen PW. Beyond the struggles: a scoping review on the transition to undergraduate clinical training. Med Educ. 2019;53(6):559–70.
2. Alexander DA, Haldane JD. Medical education: a student perspective. Med Educ 1979;13:336–41.
3. Malau-Aduli BS, Roche P, Adu M, Jones K, Alele F, Drovandi A. Perceptions and processes influencing the transition of medical students from pre-clinical to clinical training. BMC Med Educ. 2020 Aug 24;20(1):279. doi: 10.1186/s12909-020-02186-2. PMID: 32838779; PMCID: PMC7446158.
4. Norman GR, Schmidt HG. The psychological basis of problem-based learning: a review of the evidence. Acad Med 1992;67:557–65.
5. Radcliffe C, Lester H. Perceived stress during undergraduate medical training: a qualitative study. Med Educ. 2003;37(1):32–8.

- **Supplementary Sources/Material**

1. Orsini C, Binnie VI, Fuentes F, Ledezma P, Jerez O. Implications of motivation differences in preclinical-clinical transition of dental students: a one-year follow-up study. Educación Médica. 2016;17(4):193–6.
2. Prince KJ, Boshuizen HP, van der Vleuten CP, Scherpbier AJ. Students' opinions about their preparation for clinical practice. Med Educ. 2005 Jul;39(7):704-12. doi: 10.1111/j.1365-2929.2005.02207.x. PMID: 15960791.

Weekly Self-Assessment & Interactive Exercises/Activities

Reflective Assignment (25% of the total assignment grade)

Exercise 13. Reflect on your personal experience related to transition from preclinical to clinical educational setting during your education. The reflective essay should reach abstract conceptualization and should not exceed 2000 words references excluded.

Recommended number of work hours for the student 15 hours

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

(14th week)

The Final Exam represents that the student attained all the necessary knowledge and skills of the profession included in the program.

During this Program, you are entitled to complete ten weekly self-assessments & interactive exercises and three assignments, where two of such will be an individual, and one will be a group assignment. Assignments will be graded by the Instructor.

Assignments (individual) holds 20 points per each.

Group Assignment holds 10 points.

Recommended number of work hours for the student 20 hours.

INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

Title:

Advanced learning environments – Advanced clinical education

(1st Week)

Exercise 1.1 &1.2 In clinical learning environments skills and knowledge are applied to patient care. These environments affect achievement of learning outcomes, and have an impact on preparation for practice and student satisfaction
Use the meaningful discussion with your peers to reflect on and post your answer in 300 words.

Title:

Strategies for planning

(2nd Week)

Exercise 2.2 For your reflective responses, identify the main arguments and/or important elements related to your impressions which integrates relevant ideas from your previous experience. Your writing should be organized by introducing your topic and the point you plan to make about your experience and learning.

Exercise 2.2 Have a meaningful discussion with your classmates on forum about their experiences and perceptions.

Title:

Teaching methods

(3rd Week)

Exercise 3.1 While thinking about the defined task, consider the following:

- Clinical education should reflect the nature of professional practice

- Clinical teaching is supported by climate of mutual trust and respect
- Clinical teaching and learning should focus on essential knowledge, skill and attitude
- Should be appropriate to objectives and desired behavioral changes, in accordance with principles of learning and with the capacity of the student

About planning strategy

- To provide individualized care in a systematic, holistic approach
- To develop high technical competent skills
- To practice procedure(s)
- To collect and analyze the data

Other to think about points:
To develop, cognitive, affective and psychomotor skills
To develop proficiency and efficiency in carrying out various procedure

Some influencig factors may be: clinical competence and professionalism, organization and clarity of presentation, enthusiasm and stimulation of interest

Exercise 3.2 Use your peer's post to comment on.

Title:

Written assessment methods and the ways to prepare a test paper

(4th Week)

Exercise 4.1 Observe the videos
https://www.youtube.com/watch?v=yhsxYYhS6_A&ab_channel=LincolnMemorialUniversity
https://www.youtube.com/watch?v=64rgRbFkLCo&ab_channel=christyfoster2002
https://www.youtube.com/watch?v=cEZOjSyPhZ0&ab_channel=RhPAP

Exercise 4.2 Post your reflections in 300 words and comments your two fellow classmates' posts.

Title:

Inpatient- and Outpatient teaching

(5th Week)

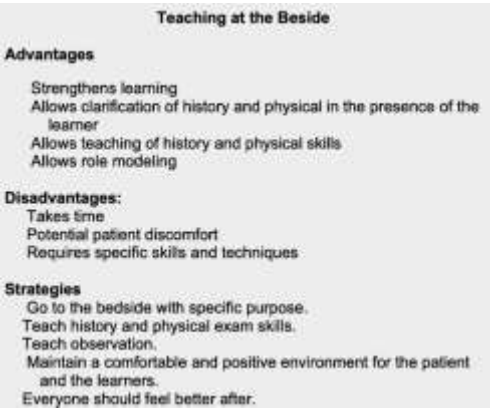
Assignment 1 (individual)
Your essay should include one introductory paragraph, three body paragraphs with support and development, and one concluding paragraph. Please, use credible sources.

Title:

Aspects of bedside teaching

(6th Week)

Exercise 6.1 While creating your e-poster, consider the highlights in the following illustration



Exercise 6.2 Use your classmates' post to meaningfully comment on.

Title:

Importance of simulation in clinical education

(7th Week)

Exercise 6.2 While creating your power-point presentation, reflect on your own experience. What did you perceived as beneficial and where there any segments where you weren't feel comfortable with?
Exercise 7.2 Use your peers' posts to discuss and to comment on

Title:

Effective feedback in clinical education

(8th Week)

Exercise 8.1 Please, reflect on following points

- Establish a respectful learning environment
- Communicate goals and objectives for feedback
- Base feedback on direct observation
- Make feedback timely and a regular occurrence
- Begin the session with the learner's self-assessment
- Reinforce and correct observed behaviors
- Use specific, neutral language to focus on performance
- Confirm the learner's understanding and facilitate acceptance
- Conclude with an action plan
- Reflect on your feedback skills
- Create staff-development opportunities
- Make feedback part of institutional culture

Exercise 8.2 Discuss meaningfully the barriers in providing feedback with your classmates on forum

Title:

Assessment in clinical education

(9th Week)

Assignment 2 (group)

Your essay should include one introductory paragraph, three body paragraphs with support and development, and one concluding paragraph. Please, use credible sources.

Title:

Effective feedback in clinical education

(10th Week)

Exercise 10.1

Exercise 10.2 Discuss and comment your peers' posts

Title:

Reflective portfolios for effective clinical education

(11th Week)

Exercise 11.1 Comment the provided video's

Exercise 11.2 Reflect on your fellow classmate's posts

Title:

Logbooks in advanced clinical education

(12th Week)

Assignment 3 (individual)

Your essay should include one introductory paragraph, three body paragraphs with support and development, and one concluding paragraph. Please, use credible sources.

Title:

Connection between preclinical knowledge and clinical education

(13th Week)

Exercise 13.1 Describe how you take an active part in CME and other licensure and certification related tasks – digital poster

Exercise 13.2 Create a focused-discussion on the forum with your peers about their licensure-related experiences and impressions.

Title:

FINAL EXAM

(14th Week)

Once you have completed all the necessary coursework and finished the internship you will be requested to meet with a committee to pass the final exam and defend your thesis work in two separate occasions. The exact dates will be announced by the Dean's office and by the host department. Students have to register for the final exam until the given deadline every year.

The final exam is a composed by the Essay Assignments.

Assignments (individual) holds 20 points per each.

Group Assignment holds 10 points.

The Final Examination Committee will ask further questions related to the topics.

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE650-Curriculum Design and Evaluation in Medicine

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE650-Curriculum Design and Evaluation in Medicine**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☐	Elective ☒	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (15%), 1 (20%)		
Assessment	Written Thesis	Oral Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Theodoros Xanthos
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING: INTRODUCTION

Programme Presentation

Program's purpose and objectives:
Healthcare professionals are increasingly required to have formally recognized teaching qualifications. This program is suitable for doctors and other healthcare professionals who are responsible for teaching, assessing and supporting undergraduate students and trainees, either in institutions or in the workplace. The program is designed for busy healthcare professionals, such as GPs, doctors, nurses, healthcare professionals and those with related undergraduate degrees, including pharmacy, and physical therapy.

The MSc Program aims to help students to develop their scholarship and research skills in order to effectively train healthcare professionals of the future. The program offers students an introduction to teaching, learning and assessment for effective teaching both in undergraduate and post-graduate students with the ultimate aim to improve patient safety. The MSc in Medical Education is designed for individuals who are interested in developing a critical knowledge for the effective application of medical education in local and international contexts.

The program fosters advanced skills of comprehension, interpretation, and analysis through courses that include examination of Medical Education Theories and their application into practice. It sensitizes students to the dynamic of infrastructures and learning environments (whether physical or virtual) and concentrates on how new technologies can be used to enhance effective medical education. The program can be offered completely as a taught course, where students successfully succeed in 9 courses (6 compulsory and 3 electives) or 6 compulsory courses and a Thesis

GENERAL OBJECTIVES: The program seeks to:

- broaden opportunities for qualified students for entry into higher level education studies
- to promote professional development and enhance research activity, both for those involved and for the general public
- to cultivate ethically and professionally sound research and practice in Medical education and to contribute to the development of a reflective and analytical attitude towards delivery of medical knowledge with an ultimate goal to improve patient safety
- to cultivate / develop an advanced postgraduate activity that is characterized by intellectual stimulation, is professionally compatible and useful and leads to research activity for the production of new and / or remodeling of existing

knowledge, as a basis for decision making and problem solving in issues of medical education
- to broaden research and academic cooperation of all kinds with participants, scholars, educational institutions and academic staff**.**

SPECIFIC OBJECTIVES: More specifically, the program seeks to:

- provide opportunities for MSc students to study in detail topics related to advanced academic studies and the systematic research in the field of Medical Education
- advance MSc students' familiarity with the theories of the area of their research within Education Sciences, epistemological theories in the field of Medical Education, as well as research methods, aiming to further delve into their area of interest viewing it in a broader perspective
- to facilitate MSc those students, who choose the Thesis option, in conducting individual and independent research and producing an academic dissertation at a highly specialized level within the boundaries of their field
- help MSc students develop skills in understanding and using qualitative and quantitative methods and measurements, and using multivariate statistics to draw conclusions and make decisions based on relevant research data
- help MSc students develop the knowledge and skills necessary to use methods and theories of their area in an independent and critical manner, producing new knowledge in Medical Education
- prepare MSc students for new knowledge production or remodeling of existing knowledge, creating the basis for the development of pedagogical / educational theories through applied research
- enable graduates to get a deeper insight into today's complex medical educational environment and apply the knowledge gained to emerge as career leaders of their choice
- Develop the ability to critique and analyze a broad range of materials and communicate ideas and theories effectively.
- Develop advanced written and verbal skills through the composition of thoroughly researched term papers, surveys based on an analysis of previously collected data
- Acquire the ability to work within a team and develop presentation skills.

Presentation of the Course through the Study Guide

The purpose of the present course is to familiarize students with the creation of any type of curriculum in a Medical School or in any Healthcare related School. The course will emphasize on how Educators sophisticated blend educational strategies, course content, learning outcomes, educational experiences, assessment, the educational environment, and the individual students' learning style in order to create an effective and innovative curriculum. Moreover, emphasis will be given to a process known as curriculum mapping has been described by Harden as a method to organize curricular contents. Curriculum mapping can help both educators and learners by displaying the key elements of a curriculum, and the relationships between them. Moreover, the

students will get familiar with the scope and sequence of learning, they will understand and clarify how curriculum links with assessment, and how curriculum planning becomes more effective and efficient. The students will also be exposed in the windows through which the curriculum map can be explored namely: (1) the expected learning outcomes; (2) curriculum content or areas of expertise covered; (3) assessment; (4) learning opportunities; (5) learning location; (6) learning resources; (7) timetable; (8) educators; (9) curriculum management; (10) learners.

Upon successful completion of this course students should be able to:

- Describe SPICES model proposed by Harden
- Critically analyze Kern's framework for curriculum development including Problem Identification and General Needs Assessment, Targeted Needs Assessment, Goals and Objectives, Educational Strategies, Implementation, Evaluation and Feedback and dissemination of educational materials and outcomes
- Discuss the PRISMS model, proposed by Bligh
- Criticize and discuss how Andragogy can fit in the creation of a Medical Curriculum
- Analyze how contemporary applications such as simulation and flipped classroom pedagogy can achieve more motivation for learning and how they can be imbedded in the creation of a Medical Curriculum
- Introduce ethics in all aspects of a medical curriculum
- Effectively use curriculum mapping for curriculum revision

Recommended student work time

Approximately 10 hours (including the study of the Guide)

TITLE:

Learning objectives

(1st Week)

Summary Learning objectives are of pivotal importance for the creation of a teaching session, course, year or even for the curriculum. The learning objectives should follow the SMART acronym and the way of constructing them is very precise, as these reflect what the students need to know and what the instructors need to examine.

Introductory Remarks There are several definitions of what a learning objective is, but according to ECTS Users' Guide, p. 47 Learning outcomes are statements of what a student is expected to know, understand and/or be able to demonstrate after completion of a process of learning. So, with this definition a learning objective can occur at a teaching episode from the level of a lesson to module and to curriculum. Note that there is a difference between the aim and the outcome. The aim of a module or programme is a broad general statement of the teaching intention, i.e. it indicates what the teacher intends to cover in a block of learning. Aims are usually written from the teacher's point of view to indicate the general content and direction of the module. So, for example the aim of a pathophysiology of cardiovascular system is to familiarize students with the basic pathophysiological procedures of the cardiovascular system. The objective of a module or programme is usually a specific statement of teaching intention, i.e. it indicates one of the specific areas that the teacher intends to cover in a block of learning. For example, one of the objectives of the above-mentioned course would be to Analyze how the various pathophysiologies lead to acute coronary syndromes. Contrary to outcomes which show teacher intention, learning objectives show what the student is expected to learn. Unfortunately, the 2 terms are used interchangeably in the international literature causing massive confusion to the less expert. In general, learning outcomes specify the essential learning for a module. Therefore, when writing learning outcomes for a module, it is generally agreed that one should specify the minimum acceptable standard to enable a student to pass the module. Moon (2002) suggests that "it is unlikely that there will be more than eight learning outcomes per module. If there are more than ten, they are probably specifying too much curricular detail and may then be unmanageable in the process of assessment". Other than the definitions a major discussion has arisen in the international literature regarding learning outcomes and instructional objectives.

Aims/Objectives

The aim of the current week is to expose the students to subtle differences between aims, objectives, outcomes and competencies and to allow them to construct successfully learning outcomes, which can be assessed effectively.

Learning Outcomes

- To discuss the difference between aims, objectives outcomes and competences.

- To be able to create clear succinct learning objectives addressed in all domains of Bloom's taxonomy
- To be able to write specific outcomes for the cognitive, affective and psychomotor domain
-

Key Words

Outcomes	Aims	Objectives	Domain	Assessment

Annotated Bibliography

- **Basic Sources/Material**

1. Chatterjee D, MD, Corral J (2017). How to Write Well-Defined Learning Objectives. J Educ Perioper Med,19(4): E610. (pdf provided)
2. Harden R.M (2002) Learning outcomes and instructional objectives: is there a difference?, Medical Teacher, 24:151-155. (pdf provided)
3. Kennedy, D. (2006). Writing and using learning outcomes: a practical guide, Cork, University College Cork. (pdf provided)
4. Prøitz TS. (2010). Learning outcomes: What are they? Who defines them? When and where are they defined? Educ Asse Eval Acc, 22:119–137. (pdf provided)

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 1.1(non-graded)

After having read this weeks' material, choose one specific lesson, or course and create at least 8 learning outcomes addressing all of Bloom's Taxonomy and at least 2 examples of outcomes addressing affective and psychomotor domains. Please reflect on the learning outcomes and be ready to defend how they follow the SMART plan. Write at least one comment for one of your classmates' learning outcomes challenging their taxonomy and adherence to the SMART acronym.

Recommended number of work hours for the student: 16 hours

TITLE:

Basic Concepts in Medical Curricula Design

(2nd Week)

Summary

Curriculum design in medical education is an arena in which many battles are fought. There are many different views about, for example, what medical students should learn, how they should learn it, what qualities we want them to develop, where the science base stands, where skills of communication and examination should be acquired, how long it should all take and whether we want to frame their task in terms of outcomes or competences.

Introductory Remarks

The days when subject experts or workforce managers alone wrote down what was to be learnt are now past. These days, curriculum design encompasses many other factors that derive from the democratisation of social processes, the development of educational theory, political imperatives and economic concerns.
According to GMC (UK) a medical curriculum is a statement of the intended aims and objectives, content, experiences, outcomes and processes, including the following:

- a description of the training structure (entry requirements, length and organisation of the programme, including its flexibilities, and assessment system)
- a description of expected methods of learning, teaching, feedback and supervision.

The curriculum should cover both generic professional and speciality-specific areas. The syllabus content of the curriculum should be stated in terms of what knowledge, skills, attitudes and expertise the learner will achieve.
In the USA, the Liaison Committee on Medical Education sets similar accreditation standards for American Medical Schools as a condition for licensure of their graduates. Not surprisingly, among the accreditation standards are some fundamental curriculum issues such as the following:

- educational objectives
- curriculum structure and design
- content
- teaching and assessment
- curriculum management
- roles and responsibilities
- evaluation of curriculum effectiveness

The standards cited all require the curriculum designer to think about the intended product and character of the course, its rationale, values or mission. Without these elements, standard setting for curricula becomes a dangerous and instrumental undertaking, apt to serve only political or economic purposes. ‘Aims-talk’, as is the first and most important element of curriculum design and its most important standard whereby local relevance can be assured. There are various curriculum models and there is a constant flux in the theory of curriculum making. Selection of a curriculum

model is a process that requires careful thought and open justification. That justification is unlikely to be in terms of research evidence; it will be in terms of ideology.
Another important basic concept is integration. Today it seems almost universally accepted that the practice of medicine requires this integration of its component parts: of science and clinical experience, knowledge, skills and attitudes, judgement and problem-solving, even of continuing to learn through reflection on practice. So, whereas in former times a curriculum for medicine might have offered in sequence its component constituents of science, clinical skills and experience to facilitate clinical judgement, leaving the integration of these to the learner, this learning trajectory has been superseded and the integrated context of practice now is reflected in the integrated nature of curricula. The curriculum is increasingly for practice, rather than simply to acquire the elements of professional knowledge, skills and attitudes for later application.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- The various definitions of the Curriculum
- The core elements required by accrediting bodies

Learning Outcomes

At the end of the week, the student should be able to

- Analyze the differences in the curricula
- Discuss the idea of integration in the context of Medical Curricula
- Critically analyze how the learning theories influence the curriculum

Key Words

Key Elements	Integration	Contextual practice of Medicine	Student-Centered	Learning Theories

Annotated Bibliography

- **Basic Sources/Material**

1. Brauer, D. G., & Ferguson, K. J. (2014). The integrated curriculum in medical education: AMEE Guide No. 96. Medical Teacher, 37:312–322. (pdf provided)
2. Leppink J & Duvivier R. (2016). Twelve tips for medical curriculum design from a cognitive load theory perspective, Medical Teacher, 38: 669-674. (pdf provided)
3. Prideaux, D. (2003). ABC of learning and teaching in medicine: Curriculum design. BMJ, 326: 268–270. (pdf provided)

4. Simpson, J. G., Furnace, J., Crosby, J., Cumming, A. D., Evans, P. A., David, M. F. B., … MacPherson, S. G. (2002). The Scottish doctor--learning outcomes for the medical undergraduate in Scotland: a foundation for competent and reflective practitioners. Medical Teacher, 24: 136–143. (pdf provided)

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 2.1(non-graded)

Please watch the following video
https://www.youtube.com/watch?v=dGslP1UxEj8&ab_channel=BWHEducationInstitute
Then reflect on the curriculum you experienced as a student and then in 500 words critically analyze the ways you would improve it. Your post should be 500 words excluding references. Meaningfully reply in at least ONE of your classmates posts.

Recommended number of work hours for the student: 18 hours

TITLE:
The SPICES model

(3rd Week)

Summary

The SPICES model introduced by the landmark publication in 1984 changed the landscape of the Flexner ideas and adopted the principles of humanism, constructivism and cognitivism in order to create the model which has become almost the golden standard of medical education curricula.

Introductory Remarks

The SPICES model (even transformed to SPICES 2.0) can be used in curriculum planning and development, in resolving problems within a curriculum, and for guidance in teaching methods and assessment. Teachers can use this model in curriculum analysis, review and development. Harden came up with this model after recognizing that newer medical schools were adopting innovative teaching methodologies when compared to older and more established programs. The model consists of the following principles:

1. Student- centered: In a student-centered approach, students take more responsibility for their learning. In a teacher-centered approach, the teacher is the key figure and there is an emphasis on formal lecture or laboratory.
2. Problem-based: This is based on a model of learning based upon problem-solving to develop a usable body of integrated knowledge and problem-solving skills versus one that stresses the acquisition of facts, concepts and principles.
3. Integrated: Integration is the organization of teaching mater to inter-relate subjects taught in different academic courses or departments.
4. Community-based: The traditional hospital-based approach focuses teaching within the main teaching hospital, while community-based education allows students to receive their training in a community setting.
5. Electives: Electives give students the opportunity to select subjects or projects of their own choosing, while in the standard program all the courses have been prescribed and all students must pass through them with little chance to find subjects of their own choosing.
6. Systematic: The traditional medical approach involved apprenticeship training where a student trainee would be “bonded” to a “master” and acquire skills by working for him. In a systematic approach, a program is designed for all students so that the experiences for their training are therefore covered.

Aims/Objectives

The aims and the objectives of this week’s content is to make students to understand and critically evaluate the design of the Harden Model in Medical Curricula

Learning Outcomes

After reading this chapter, the students should be able to:

- . Analyze the basic concepts of the Harden model
- Compare and contrast the Flexner model (discipline based, hospital-centric)

Key Words

Student-centered	Problem-based	Integrated	Community based	Electives	Systematic

Annotated Bibliography

- **Basic Sources/Material**

1. Harden R.M. (1999) What is a spiral curriculum?, Medical Teacher, 21, 2:141-143 (pdf provided)
2. Harden R. M. (2007) Outcome-based education–the ostrich, the peacock and the beaver, Medical Teacher, 29: 666-671. (pdf provided)
3. Harden R.M (2018) Ten key features of the future medical school—not an impossible dream, Medical Teacher, 40:1010-1015. (pdf provided)
4. Harden R. M. &. Davis M. H (1998) The continuum of problem-based learning, Medical Teacher, 20:317-322. (pdf provided)
5. Harden, R. M., Sowden, S., & Dunn, W. R. (1984). Educational strategies in curriculum development: the SPICES model. Medical Education, 18: 284–297. (pdf provided)
6. Yusoff MSB (2019). The future ready medical curriculum – personalised medical education and SPICES 2.0. Education in Medicine Journal, 11:1–3.

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 3.1 (Non graded)

In a post of 500 words excluding references reflect on your personal experience as an undergraduate student and then critically analyze the elements of the Harden model compared to your own experience.

Meaningfully answer AT LEAST one of your classmates posts

Recommended number of work hours for the student: 17 hours

TITLE:
PRISMS model

(4th Week)

Summary

The symbiotic curricular model moves away from the prescriptive models, such as the Harden model and focuses on guiding curricular designs in building and reinforcing relationships between medical schools and healthcare services

Introductory Remarks

The PRISMS model is just one of the several descriptive models of curriculum design (other examples are: Skilbeck's situational model and and Pinar et al's curriculum reconceptualization theory). The descriptive models are not so popular in their implementation from medical schools despite the fact that they aim at enhancing relationships between medical schools and health care services.
The PRISMS model is based on the following concepts

1. Product-related (in reality, this implies practice-based when possible)
2. Relevant (both to the communities and the students)
3. Interprofessional (models need to encompass multi-professional and inter-professional training)
4. Shorter and smaller (shorter relates to the duration and smaller relates to the numbers. This does not mean that the total numbers will decrease, but rather that students are taught in smaller groups)
5. Mutlisite (this implies that training will not happen only in the community, but also in hospital and this constitutes the basic difference of the descriptive PRISMS model from the Flexner approach and the Harden approach).

A key implied concept in the PRISMS model is that of symbiosis. Medical Schools and the Healthcare sector cannot and should be apart, but symbiose together rather than alongside.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the strengths and weaknesses of the PRISMS model and to understand the importance of interprofessional and multiprofessional communication along with the symbiosis of medical schools and the healthcare sector

Learning Outcomes

After reading this chapter, the students should be able to:

- Critically evaluate the key components of the model
- Compare and contrast the model with SPICES model and Flexner model

Key Words

Product Related	Relevant	Interprofessional	Shorter, smaller	Multi sites	Symbiotic

Annotated Bibliography

- **Basic Sources/Material**
  1. Bligh J, Prideaux, D, Parsell G. PRISMS: new educational strategies for medical education. Medical Education 2001;35:520-521. (pdf provided)
  2. Li-Sauerwine S & King A (2019). Curriculum Development: Foundations and Modern Advances in Graduate Medical Education. In Contemporary Topics in Graduate Medical Education, Stawicki SP (Ed), IntechOpen, pp 1-19. (pdf provided)
  3. Prideaux, D. (2006). Workforce: the new core curriculum for medical schools. Medical Education, 40: 286–287. (pdf provided)
  4. Prideaux, D. (2007). Curriculum development in medical education: From acronyms to dynamism. Teaching and Teacher Education, 23:294–302.
  5. Prideaux D, Worley P, Bligh J (2007). Symbiosis: a new model for clinical education. The Clinical Teacher, 4:209-212. (pdf provided)

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 4.1 (Graded Assignment-35% of Assignment grades)

The MD program of the Department of Medicine School of Medicine can be located at https://euc.ac.cy/en/programs/bachelor-medicine/#program-page-tabs|2 . After having reviewed the academic program of the Department of Medicine, critically analyze which of its elements fall under the SPICES and the PRISMS model. The essay should be 4.000 words excluding references, tables and figures.

Recommended number of work hours for the student: 20 hours

TITLE:

Kern's framework for curriculum development: Problem Identification General and Targeted Needs Assessment

(5th Week)

Summary

Kern's framework for Medical Educational Curricula consists of 6 distinct steps, which will analyzed separately in the following weeks, but in reality each phase is happening simultaneously with other phases. In this concept, the framework is dynamic and never-ending, as it aims at self-improvement once a curriculum based on Kern's principles has been created.

Introductory Remarks

This week, we will start our journey of exploration of the 6-stage approach designing of a Medical Curriculum. The various steps will take us several weeks to complete. The Framework consists of the following steps:
Step 1: Problem Identification and General Needs Assessment
Step 2: Targeted Needs Assessment
Step 3: Goals and Objectives
Step 4: Educational Strategies
Step 5: Implementation
Step 6: Evaluation and Feedback
Problem identification and General Needs assessment implies the critical analysis of an existing or emerging health issue or need (eg COVID pandemic, Cardiac arrest, HIV, etc). or the need to harmonize care in a specific setting or in general (eg cardiopulmonary resuscitation curricula to improve the outcome of cardiac arrest). More specifically, a complete problem identification at the level of different stakeholders (patients, healthcare providers) and at a constitutional level (medical education system, society) is undertaken to address the current need. Then, the ideal approach of addressing the need should be recorded. The difference between the present situation and the "ideal" is the general needs assessment.
Targeted Needs Assessment involves assessing the needs of one's targeted group of learners and their medical institution / learning environment. This step is imperative for integration and communication of the various stakeholders. It is the step which allows the required osmosis to occur and minimizes resistance to change.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the overall idea of the framework and the general and targeted needs assessment

Learning Outcomes

After reading this chapter, the student should be able to:

- Describe the six steps of the framework
- Critically analyze the General Needs Assessment step
- Compare and Contrast General Needs Assessment to Targeted Needs Assessment

- .

Key Words

General Needs Assessment	Targeted Needs Assessment	Targeted Learning Environment	Goals and Objectives

Annotated Bibliography

- **Basic Sources/Material**
  1. Bass EB & Chen BY (2016). Problem Identification and General Needs Assessment. In Curriculum Development for Medical Education: A Six-Step Approach, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 12-25. (pdf provided)
  2. Hughs DE (2016). Overview: A Six-Step Approach to Curriculum Development, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 29-47.(pdf provided)
  3. Kern DE (2016). Overview: A Six-Step Approach to Curriculum Development, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 5-9. (pdf provided)

- **Supplementary Sources/Material**

None

Self-Assessment Exercises/Activities

Exercise (Non-graded)

Please read the following problem:

Problem Identification

In-hospital cardiac arrest outcomes are highly variable both between and within hospitals While the reasons for this are certainly multifactorial, provider training and performance is likely to be a contributor. The importance of this issue is highlighted by the ever-increasing body of literature demonstrating the link between resuscitation quality and cardiac arrest survival rates. Survival following cardiac arrest has been linked to chest compression continuity, rate, and depth, and studies suggest the

potential for significant harm from hyperventilation. All these variables are dependent on individual human performance, and, in addition to psychomotor skill, they require correct prioritization and effective leadership of the resuscitation team. The impact of these factors on survival outcomes under-scores the critical importance of education to facilitate the best possible performance on the part of health care workers managing cardiac arrest patients

5.1 In 500 words provide the current approach in your institution and the ideal approach

5.2 In 300 words describe one approach for Targeted Needs Assessment (include both learners and targeted environment)

Recommended number of work hours for the student (20 hours)

TITLE: Kern's framework for curriculum development: Educational Strategies

(6th Week)

Summary

There is a clear distinction between an Educational Strategy and the Educational Methods. Educational Strategy is the way in which the learning outcomes will be achieved. Educational method is the way the content of the curriculum is delivered.

Introductory Remarks

An integral part of any educational strategy used to achieve the learning outcomes and any educational method to deliver the curriculum is strongly associated with the underlying educational theory which has been embraced by the member of the faculty, ir the faculty of a School or University. Three educational theories have informed modern medical education, the cognitive theory, the constructivism theory and Knowles Andragogy. A new concept, which will be introduced in this course is metacognition (thinking about our own thinking). In medical education, metacognition is imbedded in Problem and Team based learning and inquiry-based learning approaches. Transformative learning is the core of the learning experience, where a student changes to a professional healthcare provider.
There are several tips to ascertain that all learning preferences of your students are being addressed by using a multi-modality approach and b maintaining congruence between the learning outcomes and the educational method. It is also imperative that you address the various domains (cognitive, affective, psychomotor) of learning outcomes using different methodologies. All educational methodologies have limitations, and an expert Educator should be able to effectively use various methods. Educational technology despite the fact that it can be impressive needs to be thoroughly reflected upon, suing the SAMR acronym. No technology can lead to a change in the curriculum unless it can lead to transformative changes.

Aims/Objectives

The aims and the objectives of this week is to make students to understand and critically evaluate the difference between educational strategy and educational methods

Learning Outcomes

After reading this chapter, the student should be able to:

- Compare and contrast cognition and metacognition
- Compare and contrast strategy and methods
- Critically reflect the various educational tools to address the various domains of learning outcomes

Key Words

Educational Strategies	Educational Methods	Address domains of learning outcomes	Just in time teaching	Andragogy
Problem/Team based learning	Reflection	Peer-teaching	Clinical experience	Instructor training

Annotated Bibliography

- **Basic Sources/Material**

1. Bing-You, R. G. (2009). Why Medical Educators May Be Failing at Feedback. JAMA, 302: 1330. (pdf provided)
2. Bradley, P. (2006). The history of simulation in medical education and possible future directions. Medical Education, 40: 254–262. (pdf provided)
3. Sandars, J. (2009). The use of reflection in medical education: AMEE Guide No. 44. Medical Teacher, 31: 685–695. (pdf provided)
4. Stark, M., & Fins, J. J. (2014). The Ethical Imperative to Think about Thinking. Cambridge Quarterly of Healthcare Ethics, 23: 386–396. (pdf provided)
5. Thomas PA & Abras CN (2016). Problem Identification and General Needs Assessment. In Curriculum Development for Medical Education: A Six-Step Approach, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 66-96. (pdf provided)
6. Turan, S., Demirel, Ö., & Sayek, İ. (2009). Metacognitive awareness and self-regulated learning skills of medical students in different medical curricula. Medical Teacher, 31: e477–e483. (pdf provided)

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 6.1 (Graded, 30% of your total assignment grade)

In an essay of 2500 words use the learning outcomes you have created and create an educational strategy and an educational method to deliver the content of your outcomes. References, figures and tables are excluded from word count.

Recommended number of work hours for the student: 20 hours

TITLE: Kern's framework for curriculum development: Implementation

(7th Week)

Summary

Planning and delivering a curriculum are very distinctive procedures. Something which is designed effectively can not necessarily be implemented effectively.

Introductory Remarks

Implementation can be viewed as a developmental process with four stages: generating support, planning for change, operationalizing implementation, and ensuring viability. These four stages correspond to the six steps of curriculum development.
Stage 1, generating support, requires developing the leadership for the curriculum and enlisting stakeholder support through problem identification and the general and targeted needs assessments.
Stage 2, planning for change, involves creation of goals, objectives, and educational strategies that are clearly articulated to stakeholders.
Stage 3, operationalizing implementation, is the actual implementation of all steps and is primarily addressed in this chapter, with special attention to promptly responding to operational issues so that curriculum developers, learners, faculty, and support staff remain invested in the curriculum.
Stage 4, ensuring viability, consists of establishing procedures for evaluation and feedback, obtaining ongoing financial and administrative support, and planning for curriculum maintenance and enhancement

In more detail:

Identify resources

- Personnel: faculty, audiovisual, computing, information technology, secretarial and other support staff, patients
- Time: curriculum director, faculty, support staff, learners
- Facilities: space, clinical sites, clinical equipment, educational equipment, virtual space (servers, content management software)
- Funding/costs: direct financial costs, hidden or opportunity costs, faculty compensation, costs of scholarship

Obtain support

- Internal

from: those with administrative authority (dean's office, hospital administration, department chair, program director, division director, etc.), faculty, learners, other stakeholders for: curricular time, personnel, resources, political support

- External

from: government, professional societies, philanthropic organizations or

foundations, accreditation bodies, other entities (e.g., managed care organizations), individual donors for: funding, political support, external requirements, curricular or faculty development resources

Develop administrative mechanisms to support the curriculum

- Administrative structure: to delineate responsibilities and decision making
- Communication

content: rationale; goals and objectives; information about the curriculum, learners, faculty, facilities and equipment, scheduling; changes in the curriculum; evaluation results; etc. mechanisms: websites, social media, memos, meetings, syllabus materials, site visits, reports, etc.

- Operations: preparation and distribution of schedules and curricular materials; collection, collation, and distribution of evaluation data; curricular revisions and changes, etc.
- Scholarship: plans for presenting and publishing about curriculum; humans subjects protection considerations; IRB approval, if necessary

Anticipate and address barriers

- Financial and other resources
- Competing demands
- People: attitudes, job/role security, power and authority, etc.

Pilot

- Phase-in
- Full implementation

Plan for curriculum enhancement and maintenance

Aims/Objectives

The aims and the objectives of this week is to make students to understand and critically evaluate the four stages of the curriculum implementation:

Learning Outcomes

After reading this chapter, the student should be able to:

- Discuss how to identify the appropriate resources
- Describe ways to obtain support
- Critically analyze how to develop administrative mechanisms to support the curriculum
- Discuss how to pilot the curriculum

Key Words

Resource identification	Internal/External Support	Development of administrative support	Piloting the curriculum

Annotated Bibliography

- **Basic Sources/Material**

1. Bradley, P., & Postlethwaite, K. (2003). Setting up a clinical skills learning facility. Medical Education, 37(s1): 6–13.(pdf provided)
2. Davis, M. H., & Harden, R. M. (2003). Planning and implementing an undergraduate medical curriculum: the lessons learned. Medical Teacher, 25: 596–608. (pdf provided)
3. Graffam, B. (2007). Active learning in medical education: Strategies for beginning implementation. Medical Teacher, 29: 38–42. (pdf provided)
4. Green, M. L. (2001). Identifying, Appraising, and Implementing Medical Education Curricula: A Guide for Medical Educators. Annals of Internal Medicine, 135: 889-896. (pdf provided)
5. Hughs MD (2016). Implementation. In Curriculum Development for Medical Education: A Six-Step Approach, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 102-117. (pdf provided)

- **Supplementary Sources/Material**

None

Self-Assessment Exercises/Activities

Exercise 7.1 (non-graded)

In teams choose one the curricula a member of your team has created and provide a plan for implementation of the curriculum (no more than 500 words) in your own setting

Recommended number of work hours for the student (10 hours)

TITLE: Kern's framework for curriculum development: Evaluation and Feedback

(8th Week)

Summary

Assessment and Evaluation are 2 very distinct terminologies. Assessment is used for students' measurement of the examined learning outcomes. The term Evaluation is used for curricula and is associated with characterization judgement and appraisal. Evaluation of the curriculum is not an easy task and several steps need to be followed in order to collect the necessary documentation to successfully evaluate a curriculum.

Introductory Remarks

Evaluation and feedback is the last ring of the cycle of the framework and in reality closes a cycle. This final step once completed initiated the curriculum revision, which starts again with the first step of the framework. The evaluation step is of pivotal importance, as it allows for critical appraisal of whether the learning outcomes have been fulfilled. The process of a curriculum evaluation comprises of six different tasks, each of which is equally important and the form a chain. Remember that the chain is as strong as its weakest link.

Task I: Identify users. Always include the people who have experienced the curriculum (students and faculty) and other stakeholders who have administrative responsibility for, allocate resources to, or are otherwise affected by the curriculum will also be interested in evaluation results. Each University has a different structure, and the various stakeholders may be different in various cases.

Task II: Identify uses. The uses will be generic and specific. The generic uses can be drafted in 2 axes. The first axis reflects whether the evaluation is used to appraise the performance of individuals, the performance of the entire program, or both. The second axis refers to whether an evaluation is used for formative purposes (to improve performance), for summative purposes (to judge performance and make decisions about its future or adoption), or for both purposes. The specific uses include: Feedback on and improvement of individual performance, Judgments regarding individual performance, Feedback on and improvement of program performance, Judgments regarding program success, Justification for the allocation of resources, Motivation and recruitment, Attitude change, Satisfaction of external and internal requirements, Demonstration of popularity, Prestige, power, promotion, and influence and Presentations, publications, and adoption of curricular components by others. It is obvious that task II encompasses various different tasks which look at various stakeholders and have both summative and formative implications.

Task III: Identify resources. As discussed in the implementation of the curriculum, even if a curriculum is extremely well planned, it will fail if the resources are not adequate to support it. For this reason, curriculum developers should consider resource needs early in the planning of the evaluation process, including time, personnel, equipment, facilities, and funds.

Task IV: Identify evaluation questions. Evaluation questions lead the outcome of the evaluation. Evaluation questionnaire is an instrument, and it should be tested for validity, reliability and reproducibility. Most evaluation questions should relate to the specific measurable learner, process, or clinical outcome objectives of a curriculum. The curriculum developer should also make sure that the evaluation question is congruent with the related curricular objective. Other types of questions include feasibility. Rather than simply using various quantitative questions with e.g. Likert scale in curriculum evaluation, the bibliography shows that mixed methods approach might be preferable. So open ended question should also be included in the instrument of evaluation to capture uncharted and unexpected weaknesses.

Task V. Choice of Evaluation Design. An evaluation is said to possess internal validity if it accurately assesses the impact of a specific intervention on specific subjects in a specific setting. An internally valid evaluation that is generalizable to other populations and other settings is said to possess external validity. In choosing an evaluation design, one must be aware of each design's strengths and limitations with respect to factors that could threaten the internal validity of the evaluation. These factors include subject characteristics (selection bias), loss of subjects (mortality, attrition), location, instrumentation, testing, history, maturation, attitude of subjects, statistical regression, and implementation. Evaluation designs are sometimes classified as pre-experimental, quasi-experimental, and true experimental.

Task VI. Choose measurement questions and construct instruments. The choice of assessment or measurement methods and construction of measurement instruments are critical steps in the evaluation process because they determine the data that will be collected, determine how they will be collected (Task VIII), and make certain implications about how the data will be analyzed (Task IX). Most evaluations will require the construction of curriculum-specific measurement instruments such as tests, rating forms, interview schedules, or questionnaires.

Aims/Objectives

The aim of the present week is to provide a framework which highlights the six tasks of evaluation.

Learning Outcomes

After reading this chapter, the student should be able to:

- Discuss how to identify the users of the evaluation step
- Critically analyze the generic and specific uses of the evaluation step
- Create evaluation questions and evaluation designs for the evaluation of the curriculum
- Construct instruments for measurements for evaluation

Key Words

Validity	Reliability	Reproducibility	Internal consistency	Six Tasks to complete the step

Annotated Bibliography

- **Basic Sources/Material**

1. Linderman BM & Lipsett PA (2016). Evaluation and feedback, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 122-157. (pdf provided)

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 8.1 (non-graded)

In the suggested answer section, please read the evaluation of the example answer I have provided for the development of a curriculum for resuscitation skills. After having read this week's materials, please post a critique of 200 words excluding references in the discussion forum.

Recommended number of work hours for the student (12 hours)

TITLE: Maintenance and enhancement of a curriculum

(9th Week)

Summary

A static curriculum is by definition a moribund curriculum, which will be outdated very soon; as a result. The curriculum is a dynamic process and despite the fact that a curriculum has just been created, it should go directly or almost directly to the microscopy of maintenance and enhancement. There are several key components in successful maintenance and enhancement of the curriculum, but faculty development plays a pivotal role both in maintenance and in enhancement.

Introductory Remarks

The first step for maintenance and enhancement is understanding of the created curriculum. This includes not only the written curriculum but also its learners, its faculty, its support staff, the processes by which it is administered and evaluated, and the setting in which it takes place. Methods that promote informal information exchange, such as internal and external reviews, observation of curricular components, and individual or group meetings with learners, faculty, and support staff, can enrich one's understanding of a curriculum.

The second step is the management of change. This can be extremely challenging, as it is time consuming and requires a dedicated person with adequate support. Most curricula require midcourse, end-of-cycle, and/or end-of-year changes. Changes may be prompted by informal feedback, evaluation results, accreditation standards, changes in available methods and resources, and/or the evolving needs of learners, faculty, institutions, or society. Before expending resources to make curricular changes, however, it is often wise to establish that the need for change 1) is sufficiently important, 2) affects a significant number of people, and 3) will persist if it is not addressed. An important part of the second step is the faculty development. One of the most important resources for any curriculum is its faculty. As discussed, a curriculum may benefit from faculty development efforts specifically targeted toward the needs of the curriculum. Institution-wide, regional, or national faculty development programs that train faculty in specific content areas or in time management, teaching, curriculum development, management, or research skills may also benefit a curriculum. Introduction of new educational technology invariably requires a plan for faculty development, if the technology is to be used effectively.

The third step is the life of the curriculum. A curriculum should keep pace with the needs of its learners, its faculty, its institution, patients, and society. It should adjust to changes in knowledge and practice, and it should take advantage of developments in educational methodology and technology. A vibrant curriculum keeps pace with its environment and continually changes and improves. After a few years, it may differ markedly from its initial form.

A fourth step which can enhance a curriculum is networking, innovation, and scholarly activities. Faculty members one more time play a pivotal role in keeping the curriculum vibrant and alive through exchanges with other institutions, and by scholarly activity

which can lead to the desired osmosis and synergies between research and teaching. A vibrant curriculum will involve students in all scholarly activities of its faculty members. This will provide motivation for students but would also increase faculty satisfaction.

Aims/Objectives

The aims and the objectives of this week is to make students to understand and critically evaluate the framework of maintenance and enhancement of a curriculum

Learning Outcomes

After reading this chapter, the student should be able to:

- Analyze how to understand a curriculum
- Effectively apply management of change
- Construct concepts for faculty development

Key Words

Management of change	Dynamic Curriculum	Level of Decision making	Faculty Development

Annotated Bibliography

- **Basic Sources/Material**

1. Dath, D., & Iobst, W. (2010). The importance of faculty development in the transition to competency-based medical education. Medical Teacher, 32: 683–686. (pdf provided)
2. Holmboe, E. S., Ward, D. S., Reznick, R. K., Katsufrakis, P. J., Leslie, K. M., Patel, V. L., … Nelson, E. A. (2011). Faculty Development in Assessment: The Missing Link in Competency-Based Medical Education. Academic Medicine, 86:460–467. (pdf provided)
3. Kern DE & Thomas PA (2016). Curriculum Maintenance and Enhancement, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 168-181. (pdf provided**)**
4. McLean, M., Cilliers, F., & Van Wyk, J. M. (2008). Faculty development: Yesterday, today and tomorrow. Medical Teacher, 30:555–584. (pdf provided)
5. Steinert, Y., Mann, K., Centeno, A., Dolmans, D., Spencer, J., Gelula, M., & Prideaux, D. (2006). A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. Medical Teacher, 28: 497–526. (pdf provided)

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 9.1 (non-graded assignment)

The European Resuscitation Council (ERC) offers the Generic Instructor Program which you can find in the indicative answers. Please read the 2-day short course provided by ERC and post a critique of 200 words in the discussion forum. Please use the various frameworks for developing a train the trainer program.

Recommended number of work hours for the student (19 hours)

TITLE: Dissemination of a Curriculum

(10th Week)

Summary

A curriculum might be a part of a School, integrated in the existing curriculum of a School, or be completely independent and be available for subscription. No matter what the aim of the curriculum might be, diffusion of the curriculum to others, including stakeholders and other interested parties maybe beneficial both for the University and the faculty.

Introductory Remarks

Curriculum developers who wish to disseminate work related to their curriculum should start planning for dissemination when they start planning their curriculum (i.e., before implementation). It is important to develop a coherent strategy for dissemination that clarifies the purposes of one's dissemination efforts, addresses ethical and legal issues related to the protection of participants and intellectual property, identifies what is to be disseminated, delineates the target audience, and determines venues for dissemination. One of the main implications of diffusion theory and research is that efforts to disseminate an innovative curriculum should involve more than just communication of knowledge about the curriculum. The dissemination strategy should include efforts to persuade individuals of the need to consider the curricular innovation. One of the first decisions to make when developing plans for disseminating curriculum work is to determine whether the entire curriculum, parts of the curriculum, or curriculum-related work should be disseminated. The curriculum developer can refer to the problem identification and general needs assessment to determine the extent of the need for the curriculum and to determine whether the curriculum truly represents a new contribution to the field. The results of the evaluation of a curriculum will also help determine whether any aspect of the curriculum is worth disseminating.
In the suggested readings this week, you will read of various ways of promoting and disseminating a curriculum. One of the most traditional, but still underused, modes of disseminating medical education work is publication in a print or electronic medical journal or textbook. When a curriculum developer seeks to disseminate a comprehensive curriculum, it may be wise to consider preparation of a book or manual. On the other hand, the format for original research articles can be used to present results of a needs assessment or a curriculum evaluation.

Aims/Objectives

The aims and the objectives of this week's material is to make students to understand and critically evaluate the importance of dissemination of a curriculum

Learning Outcomes

After reading this chapter, the student should be able to:

- Discuss planning of dissemination
- Discuss how to diffuse the innovations
- Describe the various ways a curriculum can be disseminated

Key Words

Planning	Diffusion	Copyright	Ways of dissemination

Annotated Bibliography

- **Basic Sources/Material**

1. Ginossar, T., Heckman, C. J., Cragun, D., Quintiliani, L. M., Proctor, E. K., Chambers, D. A., … Brownson, R. C. (2018). Bridging the Chasm: Challenges, Opportunities, and Resources for Integrating a Dissemination and Implementation Science Curriculum into Medical Education. Journal of Medical Education and Curricular Development, 5: 238212051876187. (pdf provided)
2. Kern DE & Bass EB (2016). Dissemination, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 168-181. (pdf provided)
3. Mauksch, L., Farber, S., & Greer, H. T. (2013). Design, Dissemination, and Evaluation of an Advanced Communication Elective at Seven U.S. Medical Schools. Academic Medicine, 88: 843–851. (pdf provided)

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 10.1 (non-graded)

Post 200 words on the discussion forum discussing the reasons to disseminate part or all of the curriculum you are currently coordinating, or planning to coordinate

Recommended number of work hours for the student (8 hours)

TITLE: Curriculum Development for larger audiences

(11th Week)

Summary

Creating programs leading to awards or certificates is challenging and requires many different skills and involves various stakeholders.

Introductory Remarks

This week's material discusses curriculum development and maintenance for large educational programs, using the six-step model as a framework. In addition to the bedrock of good curriculum design that has evolved from the six-step model, there are unique aspects to the successful design and implementation of larger programs, such as external accreditation systems, curriculum integration and mapping, resource utilization, and succession planning. Compared to a course, award -leading programs require accreditation and because of that, the process can be meticulous and extremely hard to perform. The six-stage approach (Thomas PA, 2016) of the suggested reading provides a framework with which the procedure can be completed using distinct steps, which one come after the other. Curriculum design for award-leading courses is not an easy task and it is usually addressed by extremely well-versed and experienced educators. However, exposure to the complexity of the various elements necessary for the creation of an award-leading program will offer a flavor of the infinite possibilities in the revision of a curriculum. A truly visionary medical education leadership is attuned not only to today's problems but also to anticipated future problems in improving the health of the public. A changing demographic of one's population, the ease of global travel, increasing access to information, and the communication power of social media will demand mastery of new content and skills in the next generation of health providers. The complexity of Step 2 for large programs is increased by the number and diversity of learners, where the challenge is to address a spectrum of learner needs so that each learner has the opportunity for success. In step 3 long, unwieldy lists of learning objectives that are useful neither to learners nor to faculty can result from attempts to reflect all the content in a large program. Different levels of objectives should be written for individual educational events (such as a lecture or simulation activity); for a course, block, or rotation; for a year or milestone; and finally, for summative objectives or competencies of the program. The move to competency-based frameworks in medical education has facilitated articulation of an appropriate level of educational program objectives. The competency domains and milestones serve to communicate the core concepts in these systems, and the entrustable professional activities (EPAs) communicate the assessment plan. Milestones in a program are higher-level integrated learning objectives, defined either by time (such as year) or by level of achievement (such as novice), and describe observable behaviors expected for that milestone. Step 4 encompasses the educational strategy and the educational method when step 3 has been completed. Nothing conveys a stronger message regarding the core values of an educational program than the educational strategies that the program employs.

Choosing educational methods for large programs requires attention to the core values of the program, the needs of learners, the developmental nature of longer programs, the available experiences and faculty expertise, and the feasibility of resources. Step 5 needs extremely careful planning and time to implement. Large, integrated, and longitudinal programs are often described as complex machines with many moving parts. Implementing these curricula requires attention to the many details of these moving parts, as well as appreciation of the coherent whole and its impact on and relation to even larger institutions, such as the overall university or health system or the population served by the graduates of the program. No single person or leadership role can provide adequate oversight of implementation in these complex systems. These programs require effective governance structures. Governance, which is often invisible to the students, has powerful implications for curricular quality and outcomes and needs to be carefully constructed for large, integrated programs so that the governance reflects the core values of the school or program. Continuous quality improvement is vital to a large curriculum, and that role often rests in another peer committee of faculty who oversee student assessments, achievement, and program evaluation. For learner assessment, promotion, and remediation, the program needs clear policies and guidelines. Step 6 addresses the evaluation of learners and curricula. Similarly, large educational programs must have an overall plan for evaluation and must monitor that evaluation in real time. If programs have moved to a competency-based framework, a program will want to track competency development by multiple learners over long time periods, often using a variety of assessments. To do this effectively, educational programs have adopted learning portfolios to track documentation of learner achievement.

Aims/Objectives

The aims and the objectives of this week's material is to make students to understand and critically evaluate the complex structure of an award-leading program, the role of reflective leadership and introduces the concept of curricular mapping

Learning Outcomes

After reading this chapter, the student should be able to:

Key Words

Complexity	Levels of mastery	Entrustable Professional Abilities	Organizational change	Curricular mapping

Annotated Bibliography

- **Basic Sources/Material**

1. Harden RM. The integration ladder: a tool for curriculum planning and evaluation. (2000). Medical Education, 34: 551–557. (pdf provided)
2. Nasca, T. J., Philibert, I., Brigham, T., & Flynn, T. C. (2012). The Next GME Accreditation System — Rationale and Benefits. New England Journal of Medicine, 366: 1051–1056. (pdf provided)
3. Pololi, L. H., Krupat, E., Schnell, E. R., & Kern, D. E. (2013). Preparing Culture Change Agents for Academic Medicine in a Multi-Institutional Consortium: The C - Change Learning Action Network. Journal of Continuing Education in the Health Professions, 33: 244–257. (pdf provided)
4. Skochelak, S. E. (2010). A Decade of Reports Calling for Change in Medical Education: What Do They Say? Academic Medicine, 85:S26–S33. (pdf provided)
5. Thomas PA (2016). Curriculum Development for larger programs, Thomas PA, Kern DE, Hughes MT & Chen BY (Eds), John Hopkins University Press, Baltimore, USA, pp 209-233. (pdf provided)

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 11. (Graded Assignment 35% of the total assignment grade)

As a undergraduate student you have experienced a curriculum as a learner in order to obtain your BSc or MD or DDS or you are teaching/coordinating a curriculum leading to the award of a degree (either post-graduate or undergraduate). Using the curriculum you want to discuss as an appendix in an essay of 3500 words perform steps 3 and 4 of the Kern framework (Thomas PA-2016 of the articles provided) to create a revised curriculum. Take into consideration that Step 1 recent accreditation procedures from the World Federation of Medical Education call for a curriculum reform. The information you have for step 2 is that the learners are all high-school graduates (age 18-20), they all enter the program through a National Board examination, and the targeted learning environment includes classrooms, small group learning spaces, simulation rooms and lecture halls. The mandate is to change the preclinical curriculum without changing the clinical curriculum.

Recommended number of work hours for the student (20 hours)

TITLE: Ethics and Professionalism in all aspects of a medical curriculum

(12th Week)

Summary

Medical professionalism forms a belief system which is used to defend physicians' ethos against counterforces which might threaten the integrity of medical practice. A differentiation between professionalism and ethics is not of mere academic interest. Instead, it is of great practical importance with regard to morally contentious issues in medicine.

Introductory Remarks

The professional as a person is, thereby, often depicted in a rather idealistic manner showing "everything that we admire in our colleagues and strive for in ourselves". Following this image, the professional stands as a solid rock in the center of changing societies and healthcare systems while keeping up with the commitment to serve both the benefit of patients and the welfare of society. In dealing with the topic of professionalism we should be aware of the fact that professionalism has two sides: it forms an important subject of historical and sociological sciences, but, at the same time, is an ideology or belief system in the medical community itself which is used to defend the inherent values of physicians' ethos. There is lack of a clear distinction between "professional" and "ethical" aspects in healthcare. Both sides are typically voiced in one breath when referring to physicians' "ethical and professional values." Training programs and Centers for Ethics and Professionalism aim to ensure healthcare professionals' orientation towards values and provide them with the respective knowledge, skills and attitude. There are several attempts to systematically explain the basis of physicians' professional ethos. Most often it is related to a so-called "internal morality" of medical practice and the inherent goals of medicine such as preventing and curing, relieving pain and disability or helping the patient to live with his disease. Professional ethos is then linked with a virtue-ethical account which highlights character traits indispensable for an attainment of the ends of medicine.

Aims/Objectives

The aims and the objectives of this weeks material is to make students to understand and critically evaluate the definition and importance of ethics and professionalism in healthcare provision and in medical education:

Learning Outcomes

After reading this week's material, the student should be able to:

- Compare and contrast Consequentialist Ethics with Deontology and Virtue Ethics
- Define the elements which constitute professionalism

- Create learning outcomes and ways of implementation of teaching into various healthcare curricula

Key Words

Consequentialist Ethics	Deontology	Virtue Ethics	Integrity	Compassion	Altruism
Excellence	Continuous Professional Improvement	Respect	Communication	Team working	

Annotated Bibliography

- **Basic Sources/Material**

1. Doukas, D. J., McCullough, L. B., & Wear, S. (2012). Perspective Medical Education in Medical Ethics and Humanities as the Foundation for Developing Medical Professionalism. Academic Medicine, 87: 334–341. (pdf provided)
2. Goldie, J., Dowie, A., Cotton, P., & Morrison, J. (2007). Teaching professionalism in the early years of a medical curriculum: a qualitative study. Medical Education, 41: 610–617. (pdf provided)
3. Goold, S. D., & Stern, D. T. (2006). Ethics and Professionalism: What Does a Resident Need to Learn? The American Journal of Bioethics, 6:9–17. (pdf provided)
4. Lehmann, LS; Sulmasy, LS; & Desai, S; for the ACP Ethics, Professionalism and
5. Human Rights Committee (2018). Hidden Curricula, Ethics, and Professionalism: Optimizing Clinical Learning Environments in Becoming and Being a Physician: A Position Paper of the American College of Physicians. Annals of Internal Medicine, 68:506-508. (pdf provided)
6. Mahajan, R. Aruldhas, B.W., Sharma, M., Badyal, D.K., Singh, T. (2016). Professionalism and ethics: A proposed curriculum for undergraduates. International Journal of Applied and Basic Medical Research, 6:157-163. https://pubmed.ncbi.nlm.nih.gov/27563578/
7. Sklar, D.P Association of American Medical Colleges (2017). Professionalism in Medicine and Medical Education, Volume II, Foundational Research and Key findings, Academic Medicine, Washington USA. (e-book available at https://journals.lww.com/academicmedicine/Documents/Professionalism_in_Medicine_and_Medical_Education_Volume_II_eBook.pdf)

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 12.1 (non-graded)

Please watch the following videos:
https://www.youtube.com/watch?v=UC9kSeUnJUI&ab_channel=HealthcareEthicsandLaw In this video the presenters look at consequentialist ethics and in particular the most famous form of it, utilitarianism. We also take a look at examples of it in medical practice and some famous objections to it.
https://www.youtube.com/watch?v=G8TnR8U-w5U&ab_channel=HealthcareEthicsandLaw In this video the presenters look at virtue ethics. Virtue ethics focuses on the character of the moral agent and features heavily in regard to professionalism in healthcare.

In a post of 500 words (references excluded) provide an outline of how you would teach ethics and professionalism in any healthcare curriculum. You should include hidden and clearly stated learning outcomes and provide a few ways to assess your outcomes.

Recommended number of work hours for the student (18 hours)

TITLE: Curricular Mapping

(13th Week)

Summary

A curricular map is an assessment tool that provides a visual and spatial representation of selected curricular elements.

Introductory Remarks

In the mere definition of the curriculum there are 4 different conceptions of curriculum that form a curricular chain of causality. The first is the intended curriculum. The next is the enacted curriculum or what faculty actually "do" in the classroom. The third conception is the learned curriculum or what students experience. The final conception is the assessed curriculum or that for which we actually test or assess competence in the curriculum.
A curriculum map can be thought of as akin to a roadmap of a curriculum, guiding its users – students, faculty members, teachers, and curriculum planners, evaluators and co-ordinators – through the various elements of the curriculum and their interconnections. Curricular elements may include people (learners, teachers), activities (learning and assessment events), courses, outcomes and objectives, learning resources, topics and locations. Electronically speaking, a curriculum map is typically a relational database (or a number of databases that can communicate with one another) that contains information about the curriculum and people, and links between these various elements.
Curricular maps can be used in programmatic assessment to help capture the elements of a curriculum in a way that helps visualize the curriculum, thus providing a basis of curricular analysis that can be used as input for the creation of improvement strategies. Maps can provide data to determine curricular issues such as gaps or overlaps of learning outcomes or content, and they can also be used to track curricular changes over time. Essentially each of the dimensions of curriculum described could be represented in a curricular map to both document the curriculum and to determine concordance between curricular elements. The curricular mapping process can also be used to help programs illustrate or document other Standards-related requirements.

Aims/Objectives

The aims and the objectives of this week is to make students to understand and critically evaluate the definition, importance and creation of curricular maps:

Learning Outcomes

After reading this chapter, the student should be able to:

- Critically compare and contrast the intended, enacted, learned and assessed curriculum
- Implement the five steps of curriculum mapping

Key Words

intended curriculum	enacted curriculum	learned curriculum	assessed curriculum	Planning
Creating the Code	Faculty Input and Data Gathering	Analysis of Map	Implementing the Changes	

Annotated Bibliography

- **Basic Sources/Material**

1. Daley, B. J., & Torre, D. M. (2010). Concept maps in medical education: an analytical literature review. Medical Education, 44: 440–448. (pdf provided)
2. Kelley, K. A., McAuley, J. W., Wallace, L. J., & Frank, S. G. (2008). Curricular Mapping: Process and Product. American Journal of Pharmaceutical Education, 72(5), 100. (pdf provided)
3. Lawrence, C., Mhlaba, T., Stewart, K. A., Moletsane, R., Gaede, B., & Moshabela, M. (2018). The Hidden Curricula of Medical Education. Academic Medicine, 93(4), 648–656. (pdf provided)
4. Plaza, C. M., Draugalis, J. R., Slack, M. K., Skrepnek, G. H., & Sauer, K. A. (2007). Curriculum Mapping in Program Assessment and Evaluation. American Journal of Pharmaceutical Education, 71:20. (pdf provided)
5. Willett, T. G. (2008). Current status of curriculum mapping in Canada and the UK. Medical Education, 42: 786–793. (pdf provided)

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 13.1 (non- graded)

Using the first two years of the undergraduate curriculum you followed as a student, or the curriculum you are teaching coordinating create a curricular map with the following elements: Course name, educational method and assessment method. Post your table in the discussion forum.

Recommended number of work hours for the student (8 hours)

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (e.g. multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

(14th week)

Recommended number of work hours for the student

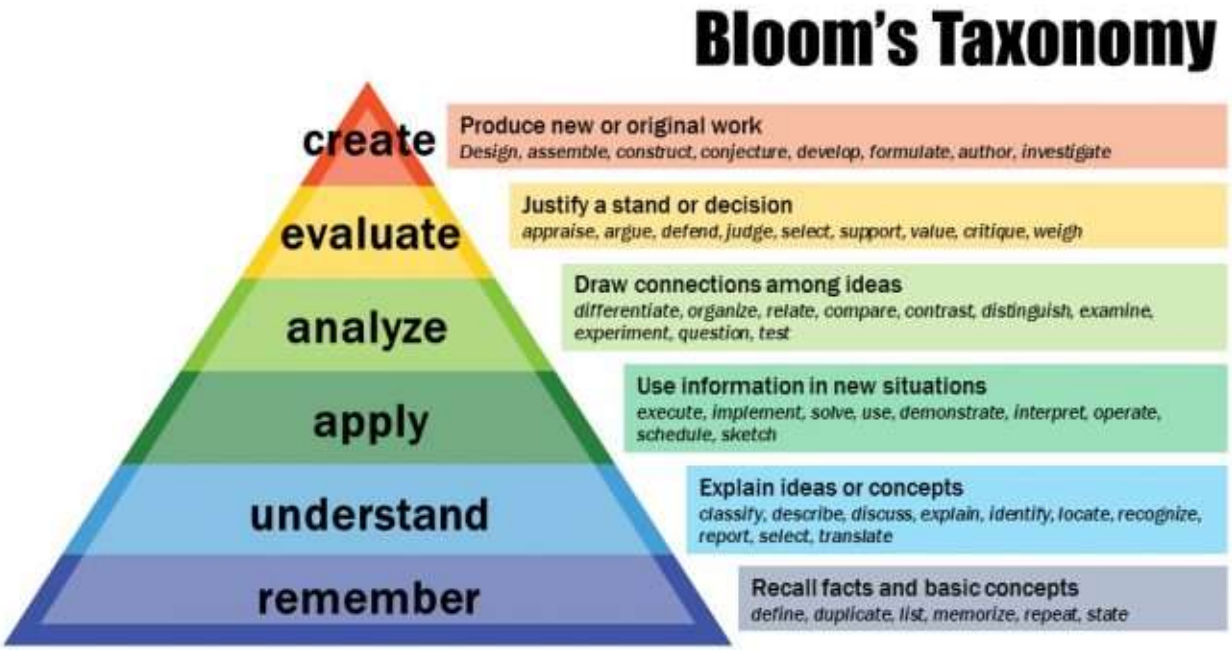
Approximately **60** hours.

INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

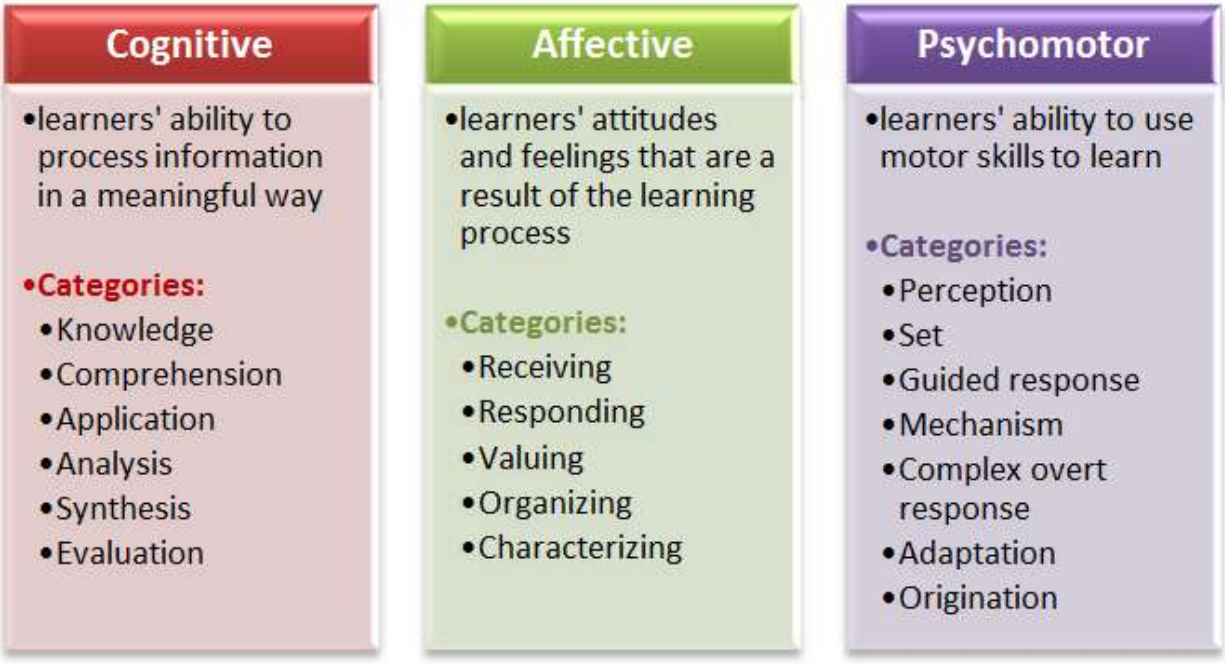
Title: Learning Objectives

(1st Week)

Exercise 1.1 Be sure that you are using the appropriate ACTIVE verbs to address Bloom's taxonomy as shown below



the various domains as shown below



And the SMART acronym for learning outcomes is shown below

Specific	Is there a description of a precise behavior and the situation it will be performed in? Is it concrete, detailed, focused and defined?
Measurable	Can the performance of the objective be observed and measured?
Achievable	With a reasonable amount of effort and application can the objective be achieved? Are you attempting too much?
Relevant	Is the objective important or worthwhile to the learner or stakeholder? Is it possible to achieve this objective?
Time-bound	Is there a time limit, rate number, percentage or frequency clearly stated? When will this objective be accomplished?

Title: Basic Concepts in Medical Curricula design

(2nd Week)

Exercise 2.1

Have you considered the following variables?

1. Student-centered
2. Lack of integration
3. Lack of coordination
4. Lack of student feedback in the improvement
5. Interprofessional issues and communication
6. Student experience

Title: The SPICES model

(3rd Week)

Exercise 3.1 (non-graded)

Use all the elements shown in the following comparative table

The SPICES model and the traditional alternatives

SPICES	Traditional approach
Student centred teaching	Teacher centred teaching
Problem based learning	Information gathering learning
Integrated curricula	Discipline based curricula
Community based learning	Hospital based learning
Electives with a core	Uniform electives
Systematic curricula	Apprenticeship approach

Title: The PRISMS Model

(4th Week)

Exercise 4. This will be a graded assignment and will carry 40% of you total assignment grade

Title: Kern's framework for curriculum development: Problem Identification General Needs Assessment and Targeted Needs Assessment

(5th Week)

Exercise 5.1

Ideal situation

Simulation has been shown to be superior to traditional teaching methods for improving resuscitation performance in the simulation lab as well as in clinical practice and has been associated with better patient outcomes. Simulation was therefore a natural choice as the core instructional method for this curriculum. Additionally, expert consensus has identified specific approaches within simulation that are particularly associated with effective learning. Deliberate practice (DP), a concept originally developed to explain how elite athletes master complex skills, is one such approach. In the DP paradigm, learners strive to attain a well-defined goal through focused practice followed by specific feedback. This feedback informs further practice, which in turn leads to additional feed-back, and the cycle continues in perpetuity until learners achieve mastery. The authors felt that DP was particularly well suited to the goal of enabling the learners to achieve mastery-level performance of key resuscitation skills, and they therefore emphasized this approach in the curriculum.

Exercise 5.2

Targeted Learners

We polled the students informally and found that they had very little confidence in their emergency management skills and rated resuscitation as a major area of need within their curriculum. To quantify students' resuscitation performance, the authors recruited a volunteer cohort of 24 BLS-trained senior medical students to participate in formal simulation-based assessment. Each student participated individually in a standardized high-fidelity simulation scenario depicting a case of acute myocardial infarction complicated by ventricular fibrillation arrest.

Resuscitation performance in this group was far from optimal, with only 45% of students initiating chest compressions within one minute of arrest, 58% placing a cardiac monitor, and 25% initiating ventilation. Seventy-five percent of students defibrillated within three minutes of arrest, but many did so inappropriately, either without apparent knowledge of

the cardiac rhythm or with-out adhering to accepted protocols for shock frequency. These findings confirmed the authors' belief that additional resuscitation education was necessary to ensure medical graduates' competence to provide basic lifesaving care during residency and beyond.

Targeted environment

The curriculum was conducted in a 10,000-square-foot state-of-the-art simulation center featuring high-fidelity human patient simulators and advanced audiovisual technology. Simulations were conducted using Laerdal SimMan 3G and were recorded digitally using SimCapture software. All instructors were board-certified specialists in Emergency Medicine or Anesthesiology / Critical Care Medicine, with specific expertise in resuscitation education.

Title: Kern's framework for curriculum development: Educational Strategies

(6th Week)

Exercise Graded assignment (25%) of the total assignment grade

Title: Kern's framework for curriculum development: Implementation

(7th Week)

Exercise 7.1

In continuation of week's 5 example curriculum, please see the implementation plan here

Implementation

Resources

■ Johns Hopkins Medicine Simulation Center

■ Human patient simulators

■ Durable medical equipment (defibrillator, crash cart, etc.)

■ Consumable supplies (defibrillator pads, bag-valve masks, etc.)

■ Expert faculty educators to precept sessions (4 faculty pre-ceptors, 8 hours/day, for 1 week each year)

■ Technicians to operate simulators and assist with sessions (though, in many cases, faculty operated their own simulators)

Support

■ Salary support for curriculum developers and educator

■ Institutional support for the TTW course in general and for resuscitation content specifically

Administration

■ A single faculty member as director of the resuscitation skills curriculum

■ Administrative staff from the Office of Curriculum for scheduling and communication

■ Simulation staff from the Simulation Center

Introduction

■ No formal pilot of curriculum itself was conducted

■ Targeted needs assessment served as pilot for the assessment tool as well as providing valuable insight for curriculum development.

Title: Kern's framework for curriculum development: Evaluation and Feedback

(8th Week)

Exercise 8.1

Step 6 Evaluation of the existing curriculum

Users

■ Learners themselves use the evaluation data to understand and improve their own performance.

■ Faculty and curriculum developers use the data to understand the strengths and weaknesses of the curriculum and to optimize instructional strategies, in order to maximize educational outcomes and learner satisfaction.

■ Institutional leadership uses the data to document students' attainment of an essential clinical competency and to assess the job performance of the curriculum developers.

■ The data have allowed curriculum developers to present at national meetings and have promoted professional development.

■ Educators from other institutions have used the data, which have been presented in several national meetings, as the data provide evidentiary support for an educational technique that they may find useful in their own settings.

Uses

■ Formative feedback to learners gives them insight into their strengths and weaknesses and helps them to develop learning plans to facilitate future performance improvement.

■ Summative assessment data can be used to determine whether learners achieved the stated learning objectives.

■ Aggregated summative data have allowed faculty to assess the effectiveness of the curriculum and to target improvements appropriately.■ Aggregated formative data have allowed faculty and curriculum developers to understand learners′perceptions of the educational experience.

■ Both types of program-level data have been used to justify allocation of resources to the course, to support applications for promotion and other types of recognition for the curriculum developers, and for dissemination to other educators.

Resources

■The authors were granted institutional support that provided protected time for curriculum development, implementation, and collection of assessment data.

■ Administrative support for collation and analysis of the data was not readily available, which could have been problematic. However, the authors were fortunate to recruit three residents who were interested in the curriculum as an academic project and

assisted with data entry and analysis. Equipment, facilities, and personnel with technical expertise in simulation were available through the institution's Simulation Center.

Evaluation questions

■By the end of the curriculum, what percentage of learners demonstrated correct and timely performance of essential assessment techniques and therapeutic interventions in the set-ting of a simulated resuscitation scenario?

■ When learners did not correctly perform needed assessments and interventions, what were their common errors or misconceptions?

■ What was the perceived effectiveness of the curriculum on the part of learners? What were the strengths and weaknesses of the curriculum?

■"Correct and timely performance" was operationally defined for each "essential assessment technique" and "therapeutic intervention" prior to implementation of the curriculum. Where possible, these definitions were based on accepted national standards (e.g., American Heart Association guidelines).

Evaluation Design

X - - - O design. This approach allowed documentation of learn-ers' proficiency following the intervention. It did not permit exclusion of preexisting proficiency or natural maturation over the course of the observation period. However, as the curriculum was implemented over a very short period and was targeted to novice learners, these were not thought to be major concerns.

Evaluation Methods and Instruments

Direct observation of individual performance in a simulated resuscitation scenario was the principal measurement method. This method had the advantage of allowing the authors to pro-vide specific, direct, formative feedback to each learner. Use of performance checklists that were based on observable behavior allowed a high degree of precision and objectivity in data collection. The main disadvantage of this approach is that it is highly labor-intensive. It is also possible that simulation performance may not be predictive of future "real-life" performance. Development of an appropriate data collection instrument was simplified by the existence of well-documented and universally accepted protocols for resuscitation in cardiac arrest. Content validity was ensured by basing all checklist items on these established proto-cols, and reliability was aided by linking each item to a predefined observable behavior.

Title: Maintenance and enhancement of a Curriculum

(9th Week)

Exercise 9.1 (non-graded)

Day 1

Time		**Learning Outcomes**
8.15 – 8.30	**Faculty meeting- Registration and coffee**	
8:30 – 8:45 15'	**Introduction and welcome CD, Educator**	To introduce the faculty and course objectives which are • Understand the basic principles of adult learning • Critically analyse methods of teaching and assessment • Be able to teach and assess effectively • Be aware of the role of the Instructor.
8:45 – 9:30 45'	**Introduction in mentor groups Equipment familiarization**	- learn how to set up station - become familiar with equipment – know how to use - how to check that equipment works - be able to solve minor difficulties Candidates prepare the station themselves: station setup: tables, chairs Setup manikin, defibrillator, other equipment Learn to work with the simulator, iPad/monitor
9:30 – 10:15 45' Lecture Theatre	**Adult Learning and Effective teaching- Plenary** Educator: Thodoris X.	• Sets the mood, learning climate and goals for the GIC • factors that influence adult learning and teaching • Understand the need of learners (individual differences between candidates) • elements of a teaching session (environment, set, dialogue, closure) • motivation of adult learners effectively • Introduction of core learning methods: assessment, feedback, simulation, skills teaching, small group teaching on GIC
10.15 – 10.30	**REFRESHMENT BREAK**	
10.30 – 11:00 30'	**Skills teaching with formative assessment** NLS Jaw thrust Instructors: Maria, Voula Candidates: Fenya, Stella Discussion: Thodoris	4 step approach is demonstrated. Focus on communication with candidate – give short comments on performance, it is not LC. Just make sure, that FB understood: The point here is that we cannot give the not-achieving candidate exclusive time, all need to practice. Additional coaching is provided by instructor on station or mentor **a**,: perfect – well done

		b: small mistakes, gets corrected – keep it up **c**: does not achieve standard – has to redo it
11:00 – 12.30 **90'**	**Workshop: skills teaching with formative assessment practice.**	10 min: **candidates always role played by faculty** Candidated are Instructors – skills are given 5 min: candidates receive feedback about their performance
12.30 – 13.00 **30'**	**Teaching Scenario Simulations** **Classic ALS scenario, briefing of team** EPALS scenario Instructors: Fenya, Dimitris Candidates: Michalis, David Discussion –Thodoris	• Recognise the important features of role play and scenario in resuscitation teaching • Demonstrate an understanding of the aims of simulation • Demonstrate an awareness of how to facilitate learning during simulation, the roles involved and using the learning conversation
13.00 – 13.45 **45'**	**the Learning Conversation - the ERC feedback strategy** Demonstration and discussion **Same demo group as above** **Discussion ~ educator**	• Describe the principles of effective feedback • Recognise and formulate responsive comments • Conduct the learning conversation • Give team feedback • Give personal feedback
13:45 – 14:30	**LUNCH BREAK 45'**	
14:30 – 15:30 **60'**	**NTS – plenary Interactive discussion and workshop** **Educator** **Workshop ideas**	• Understand importance of NTS for safer patient care • NTS reflects interpersonal and cognitive skills that complement the clinician's technical skills • Critically discuss about NTS - TEAM tool **- short video** (scenario, youtube clips on CRM) **- demo scenario** rehearsed by faculty to be commented by participants
15:30 – 17:15 **105'**	**Workshop: Scenario teaching practice 1. Scenario teaching and role play**	10 to 15 min: **candidates is role played by faculty including LC** GIC-candidate is instructor 5 min: LC for candidates by Instructor Trainer
17:15 – 17:45	**Faculty meeting**	

Day 2

Time		**Learning Outcomes**
08:00 – 08:15	**Mentor mentee time with coffee**	
08:15 – 08:45 30'	**Group dynamics and facilitating small groups – plenary** Demonstrator: Thodoris M (the 4 Ts) Candidates: Andreas, Ioannis Discussion: Thodoris	By the end of this session you should be able to: • Explore strategies for optimising learning in small groups • Demonstrate an understanding of the complexity of group dynamics • Recognise the importance of effective use of questioning
08:45– 10:15 up to 90'	**Workshop: leading a group discussion**	10 min / candidate. • 1 min to prepare - 5 min WS - 3 min FB in front of the whole group

Time		Learning Outcomes
08:00 – 08:15	**Mentor mentee time with coffee**	
10:15 – 10:30	**REFRESHMENT BREAK**	
10:30 – 12:30 120’	Workshop: Scenario teaching practice 2. Scenario teaching and role play	20 min / IP 15 min: : **candidates always role played by faculty** - LI: IPs in turn, leads teaching the group - Candidate: IT 1 5 min: candidates receive feedback about their performance as LI by IT 2
12:30 – 13:15 **45’**	**Principles of assessment in scenario teaching** plenary and demonstration (testing – CAS Test) Demonstration: ALS Scenario Assessors: Ioannis, Sofia Candidate: Thodoris M. Discussion: Thodoris	By the end of the session, candidates will be able to demonstrate: • An understanding of the underlying principles of assessment • Critically discuss the key issues surrounding assessment, especially with regard to making pass/retest/fail decisions and informing candidates of these decisions • An awareness of common methods of assessment • The ability to prepare and perform an assessment **If pass**: congratulations, no comments, no FB **If retest**: sorry, rested, because… only main reasons of retest
13:15 – 13:45		**LUNCH BREAK**
13:45 – 15:15 90’	Workshop: assessment in scenario teaching	**Candidates practice in pairs – 3 scenarios x 30min each** **Instructor 1 is candidate being assessed.** **Instructor 2 observes and gives feedback to the candidates**
15:15 – 15:30	REFRESHMENT BREAK + preparation for lecture practice	
15:30 – 15:50 **20’**	**Lecture Presentation** – **Demonstration of a five minute lecture and effective use of AV aids** Demonstrator: Sofia **Feedback illustrating Learning Conversation: Thodoris**	• Value, advantages and limitations of the lecture • Recognition of what and how you communicate • Value of visual aids when making presentations • Critically observe a 5 minute lecture and identify its principal features and set, dialogue and closure
15:50 – 16:10 **10’ + 10’**	**Faculty meeting Candidate review**	
	The Role of the Instructor	• Discussed the role of the instructor, code of conduct • IP system and criteria • ERC website and CoSy, access to course materials

Time		Learning Outcomes
08:00 – 08:15	**Mentor mentee time with coffee**	
	Discussion ~ Thodoris	
	The role of the Mentor – mentor – mentee meeting candidates to practice in groups with the assigned mentor	Educator - plenary introduction about the importance and meaning of the mentor mentee system. Peer support and feedback in mentor groups - candidates mentor in pairs for real: How are you doing on the course? expectations? problems, issues?
16:30	**Faculty meeting Course review**	

Title: Dissemination of a curriculum

(10th Week)

Exercise 10.1

Please consider the following points. Important tip in your answer is to prioritize or even use one and adequately defend using references of the points below

1. Help Address a current healthcare issue
2. Stimulate change
3. Increase collaboration opportunities
4. Prevent redundant work
5. Promote academically through scholarly activities

Title: Curriculum Development for larger audiences

(11th Week)

Exercise 11. Graded Assignment 35% of the total assignment grade

Title: Ethics and Professionalism in all aspects of a medical curriculum

(12th Week)

Exercise 12.1

See the example of the article Stern, D. T., & Papadakis, M. (2006). The Developing Physician — Becoming a Professional. New England Journal of Medicine, 355: 1794–1799. Compare your setting of the material against the following table

Table 1. Teaching Professionalism.
Setting expectations
White-coat ceremonies
Orientation sessions
Policies and procedures
Codes and charters
Providing experiences
Formal curriculum
Problem-based learning
Ethics courses
Patient–doctor courses
Community-based education
International electives
Hidden curriculum
Role models
Parables
The environment as teacher
Evaluating outcomes
Assessment before entry into medical school (multiple medical interview)
Assessment by faculty
Assessment by peers
Assessment by patients (patient satisfaction)
Multiperspective (360-degree) evaluation

Title: Curricular mapping

(13th Week)

Exercise 13.1

Compare your answer to the following

Appendix 2. Curriculum Map of Required Cases

M-1 Course Legend	M-2 Course Legend	Educational Methods	Evaluation Methods
A=Anatomy	E= Epidemiology	1. Lecture	1. Mult Choice ?'s
Be=Behavioral Sciences	F=Fundamental Clinical Problems	2. Lab Skills	2. Lab Skills
Bc=Biochemistry	H=History/Phys Diag	3. Small Group	3. Sm grp presentations
E=Embryology	I=Imaging	4. OSCE	4. Quiz
G=Genetics	M-Clinical Microbiology	5.Clin Correlations	5.Practice Exam
H=Histology	P=Pathology	6. Demo	6. OSCE
I=Intro to Human Disease	Ph=Pharmacology	7. Web-based	7. NBME Subject Exam
Im=Immuno-Micro	Ps=Psychiatry	8. Case Presentations	8. Precp Eval of Skill
N=Neuroscience	T=Tutorials	9. Patient Work-up	
P=Physiology		10. Independent Learning	
S=Statistics		11. POPs	

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE660 - Leadership in Healthcare & Medical Education

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE660 - Leadership in Healthcare & Medical Education**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☐	Elective ☒	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (15%) , 1 (20%)		
Assessment	Assignments	Final Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Theodoros Xanthos
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING:

INTRODUCTION

Programme Presentation

Program's purpose and objectives:

Healthcare professionals are increasingly required to have formally recognized teaching qualifications. This program is suitable for doctors and other healthcare professionals who are responsible for teaching, assessing and supporting undergraduate students and trainees, either in institutions or in the workplace. The program is designed for busy healthcare professionals, such as GPs, doctors, nurses, healthcare professionals and those with related undergraduate degrees, including pharmacy, and physical therapy.

The MSc Program aims to help students to develop their scholarship and research skills in order to effectively train healthcare professionals of the future. The program offers students an introduction to teaching, learning and assessment for effective teaching both in undergraduate and post-graduate students with the ultimate aim to improve patient safety. The MSc in Medical Education is designed for individuals who are interested in developing a critical knowledge for the effective application of medical education in local and international contexts.

The program fosters advanced skills of comprehension, interpretation, and analysis through courses that include examination of Medical Education Theories and their application into practice. It sensitizes students to the dynamic of infrastructures and learning environments (whether physical or virtual) and concentrates on how new technologies can be used to enhance effective medical education. The program can be offered completely as a taught course, where students successfully succeed in 9 courses (6 compulsory and 3 electives) or 6 compulsory courses and a Thesis

GENERAL OBJECTIVES: The program seeks to:

- broaden opportunities for qualified students for entry into higher level education studies
- to promote professional development and enhance research activity, both for those involved and for the general public
- to cultivate ethically and professionally sound research and practice in Medical education and to contribute to the development of a reflective and analytical attitude towards delivery of medical knowledge with an ultimate goal to improve patient safety
- to cultivate / develop an advanced postgraduate activity that is characterized by intellectual stimulation, is professionally compatible and useful and leads to research activity for the production of new and / or remodeling of existing knowledge, as a basis for decision making and problem solving in issues of medical education

- to broaden research and academic cooperation of all kinds with participants, scholars, educational institutions and academic staff**.**

SPECIFIC OBJECTIVES: More specifically, the program seeks to:

- provide opportunities for MSc students to study in detail topics related to advanced academic studies and the systematic research in the field of Medical Education
- advance MSc students' familiarity with the theories of the area of their research within Education Sciences, epistemological theories in the field of Medical Education, as well as research methods, aiming to further delve into their area of interest viewing it in a broader perspective
- to facilitate MSc those students, who choose the Thesis option, in conducting individual and independent research and producing an academic dissertation at a highly specialized level within the boundaries of their field
- help MSc students develop skills in understanding and using qualitative and quantitative methods and measurements, and using multivariate statistics to draw conclusions and make decisions based on relevant research data
- help MSc students develop the knowledge and skills necessary to use methods and theories of their area in an independent and critical manner, producing new knowledge in Medical Education
- prepare MSc students for new knowledge production or remodeling of existing knowledge, creating the basis for the development of pedagogical / educational theories through applied research
- enable graduates to get a deeper insight into today's complex medical educational environment and apply the knowledge gained to emerge as career leaders of their choice
- Develop the ability to critique and analyze a broad range of materials and communicate ideas and theories effectively.
- Develop advanced written and verbal skills through the composition of thoroughly researched term papers, surveys based on an analysis of previously collected data
- Acquire the ability to work within a team and develop presentation skills.

Presentation of the Course through the Study Guide

Short description & objectives: The purpose of the present course is twofold: Good medical leadership is the key to building high-quality healthcare. However, in the development of medical careers, the teaching of leadership has traditionally not equaled that of technical and academic competencies. As a result of changes in personal standards, the quality of medical leadership has led to variations between different organizations, as well as occasional catastrophic. Facing the challenges of modern healthcare, experts and organizations are demanding physicians have the higher capability for leadership. A report by the Institute of Medicine recommended that academic health centers “develop leaders at all levels who can manage the organizational and system changes necessary to improve health through innovation in health professions education, patient care, and research”.

These leaders need to help “define the future, align people with a vision, and remove obstacles to allow people to see this vision”. The concept of leadership overlaps with two similar terms, management and administration. The former is used widely in Europe and Africa, while the latter is preferred in the USA, Canada, and Australia. Some leadership researchers distinguish them and have suggested leadership is synonymous with change, while management and administration are considered maintenance. The terms “leadership” and “management” are sometimes used interchangeably, but within the healthcare literature, they tend to describe different approaches to how change can be achieved.

The second purpose of the course in to highlight how leadership is essential for medical Educators. Medical educators are involved in a wide range of activities including teaching, facilitating learning, curriculum design and development, assessment, evaluation and managing teams, departments and programs. All these activities require some form of leadership, whether this is leading a team on a project, ensuring that Educators provide the right learning environment on a ward or in clinic or leading the development of a new program or curriculum. So a leader might motivate people by offering rewards for a job well done or imposing sanctions for non-compliance or failing to deliver.

Upon successful completion of this course students should be able to:

- Define Leadership in medical Education
- Critically analyze the characteristics of Medical Educator Leaders
- Compare and contrast the three major leaderships theories: transformational, situational and Servant
- Discuss toxic leadership
- Define the skills of leadership and be able to critically apply these in the setting of Medical Education and in Healthcare
- Discuss the approach for Leadership development (from one-to-one coaching, mentoring, action learning, and seminars to self-directed learning and networking) both in Healthcare and in Medical Education
- Discuss the importance of Experiential Learning for Senior and new leadership roles
- Describe, compare and contrast the National Center for Healthcare Leadership's Health Leadership Competency Model
- Discuss The Medical Leadership Competency Framework (MLCF) developed by the National Health Service

Recommended student work time

Approximately 5 hours (including the study of the Guide)

TITLE:

Defining Leadership Concepts

(1st Week)

Summary .
The definition of leadership is elusive. The diversity of the settings, where a leader is needed has led to the creation of so many definitions in the literature.

Introductory Remarks

Leadership is one of those concepts that are very hard to define. More than several decades ago, Stogdill in1974 affirmed that "there are almost as many different definitions of leadership as there are persons who have attempted to define the concept". The literature confirms that the leadership concept has been evolving in time, and after a long period of considering it as a personal quality, it is now understood, at least by some scholars, that leadership is much more than an individual trait since it is a complex phenomenon in which the followers and the context have a very important role. Silva (2006) proposed a definition of leadership with various implications, as you will read in the readings. The definition is *"Leadership is the process of interactive influence that occurs when, in a given context, some people accept someone as their leader to achieve common goals"*.

There are as many different views of leadership as there are characteristic that distinguish leaders from non-leaders. All contemporary theories can fall under one of the following three perspectives: leadership as a process or relationship, leadership as a combination of traits or personality characteristics, or leadership as certain behaviors or, as they are more commonly referred to, leadership skills. In the more dominant theories of leadership, there exists the notion that, at least to some degree, leadership is a process that involves influence with a group of people toward the realization of goals.

Aims/Objectives

The aim of this week's readings is to familiarize the students with the multi-faceted concept of leadership and to provide insight how this is different in some educational settings.

Learning Outcomes by the end of this session students will be able to:

- Discuss the various definitions of leadership
- Describe the attributes of leadership in Education

Key Words

Passionate	Innovative	Creative	Experimental	Initiates change	Visionary

Annotated Bibliography

Basic Sources/Material

1. Amanchukwu, R.N., Stanley, G.J., Ololube, N.P. (2015). A Review of Leadership Theories, Principles and Styles and Their Relevance to Educational Management. Management, 5: 6-14. (pdf provided)
2. Dimock, C. (2013). Leadership in Learning Centered Schools: Cultural Context, functions and qualities In Leadership in Education, Brundrett, M., Burton, N., & Smith, R. (Eds). EBSCO Publishing : eBook Academic Collection, pp 3-22. (pdf provided)
3. Leithwood, K. (2013). Teacher Leadership: It's nature, development, and impact on schools and students In Leadership in Education, Brundrett, M., Burton, N., & Smith, R. (Eds). EBSCO Publishing: eBook Academic Collection, pp 103-117. (pdf provided)
4. Silva, A. (2016). What is Leadership. Journal of Business Studies Quarterly, 8:1-5. (pdf provided)
5. Summerfield, M.R. (2014). Leadership: A simple definition. The American Journal of Health-System Pharmacy, 71:251-253. (pdf provided)

Supplementary Sources/Material

None

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 1.1 (non-graded)

With your Team, create a concept map of leadership traits or definitions and upload it in the discussion forum.

Exercise 1.2

As a team comment ONE other's team Jpeg in a meaningful and scholarly manner

Recommended number of work hours for the student 15 hours

TITLE:

The main leadership theories

(2nd Week)

Summary

As one would probably assume, the majority of the Leadership literature comes from Scholars from Business Schools. The complexity of the Leadership theories is as complex as the definition of Leadership, as discussed in week 1. This week we will discuss the main theories of Leadership (with the exclusion of Toxic Leadership) in their general concept. In the following weeks, we will proceed into delving in the leadership I the setting of Higher Education and then Medical Education and Medicine. A true Medical Educator Leader, or a true Medical Leader should have a solid understanding of the theories in order to better understand that one size does not fit all, for business, Medical Education and the Healthcare practice.

Introductory Remarks

The theorists from the world of business focus their attention mainly on seven major theories. Seidel, et al (2019) summarizes the most prevalent theories:

Authentic Leadership: It is a process based on both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviours on the part of leaders and followers.

Leader-Member Exchange: It describes the role-making process between a leader and the led as well as their exchange relationship over time. This can be considered mostly as a model more than a theory per se.

Complexity Leadership: Leadership is an emergent, interactive dynamic process that arises from adaptive outcomes. It considers leaders as individuals who act in ways that influence the dynamics and the outcomes.

Distributed Leadership: A dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goal. It involves multiple leaders with distinct but inter-related responsibilities, and both formal and informal leaders may be involved.

Transformational Leadership: It occurs when leaders broaden the interest of their employees, thus generating awareness and acceptance of the purpose and the mission of the group.

Servant Leadership: A servant leader must attend to the needs of followers and help them become healthier, wiser, and more willing to accept their responsibilities. The focus of servant leadership is on others rather than upon self and on the understanding of the role of the leader as a servant.

Situational Leadership: In situational leadership, model is that there is no single ‘best’ style of leadership. Depending on the maturity of the subordinates, a leader should be

task-oriented, or relations oriented. In situational leadership, the style may change continually to meet the needs of others in the organization based on the situation.

Transactional Theory can also be found in the literature also known as managerial leadership, focuses on the role of supervision, organisation, and group performance; transactional leadership is a style of leadership in which the leader promotes compliance of his followers through both rewards and punishments. Unlike Transformational leadership, leaders using the transactional approach are not looking to change the future, they are looking to merely keep things the same. In this respect the managerial leadership will be covered in a separate module.

Aims/Objectives

The aim of this week's readings is to familiarize students with the various Leadership theories which may originate from the world of Business but echo in the Higher Education setting, Medical Education setting and Medical Leadership setting.

Learning Outcomes by the end of this session students will be able to:

- Describe the main leadership theories
- Compare and Contrast the various theories identifying their similarities and significant differences

Key Words

Business leadership model	Servant-leadership	Transformational leadership	Authentic Leadership	Leader-Member Exchange	Situational Leadership	Lean leadership

Annotated Bibliography

- **Basic Sources/Material**

1. Hawkins, C. (2009). Leadership Theories--Managing Practices, Challenges, Suggestions. Community College Enterprise, 15: 39-62. (pdf provided)
2. Seidel, A., Abreu Saurin, T., Luz Tortorella, G., & Marodin, G. A. (2019). How can general leadership theories help to expand the knowledge of lean leadership? Production Planning & Control, 1–15. (pdf provided)
3. Wooi, C.T., Salleh, L.M., Ismail. A.I. (2017). Lessons from the Major Leadership Theories in Comparison to the Competency Theory for Leadership Practice. Journal of Business and Social Review in Emerging Economies, 3:147-155. (pdf provided)

- **Supplementary Sources/Material**

None

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 2.1 (Non-Graded)
Watch he following video about transformational leadership
https://www.youtube.com/watch?v=8HMp56_mu_g&ab_channel=ShawnCarson
And this video on servant leadership
https://www.youtube.com/watch?v=zrxHxGwVEMo&ab_channel=DavidDunaetz
In a post of approximately 500 words compare the 2 theories

Recommended number of work hours for the student 15 hours

TITLE:

Toxic Leader

(3rd Week)

Summary

Toxic Leaders exist and they can be disruptive authoritarian, self-centered. They can cause significant depression (even in clinical terms) to their subordinates. The Literature on business is flooded with examples and recent data show that toxic leaders exist to all Health Care setting and Educational Organizations. As a result, the phenomenon of toxic leadership is examined alone in this week's readings to illustrate a type of leadership which can cause destruction even to huge Organizations.

Introductory Remarks

Recent studies on negative and ineffective leadership focus on understanding leadership behaviors which are harmful to employees as well as for the organizations. Since 1970s, leaders around the management have discussed abusive, authoritative, and narcissistic leadership forms. The leadership terms of authoritative and abusive are the terms that existed in the 1970s and discussions about negative leadership forms have revealed toxic leadership that occurs as a categorical phenomenon. The term of toxic leadership is a multi-dimensional structure that contains bad supervision components such as narcissism, authotarianism, self-promotion and unpredictability. Toxic leaders spread their poison through excessive control. People are rewarded for agreeing with managers and punished for thinking differently in organizations that have toxic leaders. In such an environment, while people who say "yes" get rewarded and promoted to the leadership positions, people who think critically and interrogate are kept away from decision making and action mechanisms. Toxic leaders prevent the development of creativity through their strict mechanism. Secondly, they have no inclination for communication. Toxic leaders increase distrust by isolating people and holding the knowledge under control. Thirdly, they prevent the development of productive relationships. Therefore, people become strangers to each other. Toxic leaders can decide in a very short time and change any decision unexpectedly and without stating a valid reason. While planning, toxic leaders usually do not think the results of decision, generally think that they always do the right thing. Also, because their behaviours are extremely irrelevant with employees and the organization, they influence the climate of the organization in a negative way. Recent research has also shown that toxic leaders had an evident lack of concern for the welfare of subordinates, a personality that negatively affected organizational culture, and a belief by subordinates who felt that their superior's actions were driven primarily by selfish motives and self-interest. Looking at organizations where toxicity exists, things might appear to be normal from outside, but there would be serious trouble within the organization. Feeling of helplessness, reduced autonomy, no opportunity for participation, erratic job situation, reduced efficiency and innovation, lower job satisfaction, psychic and psychosomatic problems such as anxiety, depression, frustration, and stomach problems, are all known symptoms of toxic leader's behavior. Green (2014) asserts that toxic leader

exist and are real in Educational Organization, and there is evidence of Toxic Leadership in all healthcare professions

Aims/Objectives

The aim of the present week is to familiarize students with the notorious toxic leadership, which can be found at almost all healthcare setting and educational organizations.

Learning Outcomes By the end of this session students will be able to

- Define toxic leadership
- Critically analyze the effects of toxic leadership to employees, organizations

Key Words

narcissism	authotarianism	self-promotion	unpredictability	Personnel Reistance

Annotated Bibliography

- **Basic Sources/Material**

  1. Burns, W.A. (2017). A descriptive literature review of harmful leadership styles: Definitions, commonalities, measurements, negative impacts, and ways to improve these harmful leadership styles. Creighton Journal of Interdisciplinary Leadership, 3:33-52. (pdf provided)
  2. Green, J.E. (2014). Toxic Leadership in Educational Organizations Education Leadership Review, 15:18-33. (pdf provided)
  3. Indradevi, R. (2016). Toxic Leadership over the Years – A Review. Purusharta, 9:106-110 (pdf provided)
  4. Kilic, M., Gunsel, A. (2019). The Dark Side of the Leadership: The Effects of Toxic Leaders on Employees. European Journal of Social Sciences, 2: 51-56. (pdf provided)
  5. Lipman-Blumen, J. (2005). Toxic leadership: When grand illusions masquerade as noble visions. Leader to Leader, 36:29-36 (pdf provided)
  6. Milosevic, I., Maric, S., & Loncar, D. (2019). Defeating the Toxic Boss: The Nature of Toxic Leadership and the Role of Followers. Journal of Leadership & Organizational Studies, 154805181983337. (pdf provided)

- **Supplementary Sources/Material**

  None

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 3.1

Lipman-Blumen, who has authored one of the papers in your suggested readings this week, notices that "toxic leadership" is not about run-of-the-mill mismanagement. Rather, it refers to leaders, who, by virtue of their "dysfunctional personal characteristics" and "destructive behaviors" "inflict reasonably serious and enduring harm" not only on their own followers and organizations, but on others outside of their immediate circle of victims and subordinates, as well. Toxic leaders leave their followers and others who come within their sphere of influence worse off than they found them either on a personal and/or corporate basis. Jean Lipman-Blumen is the Thornton F. Bradshaw Professor of Public Policy and Professor of Organizational Behavior at Claremont Graduate University's Peter F. Drucker and Masatoshi Ito Graduate School of Management. Prof. Lipman-Blumen is president of the Connective Leadership Institute, a leadership development, management consulting, and public policy research firm in Pasadena, CA.
Watch the following video
https://www.youtube.com/watch?v=dX2s3uXNnCk&ab_channel=HodosInstitute%5Bex-%D0%92%D0%A8%D0%9B%5D
In a post of 500 words describe the main characteristics of the toxic leader and mainly analyze what type of followers these leaders attract? References are excluded from the word count.

Recommended number of work hours for the student 12 hours

TITLE:

Healthcare educational leadership

(4th Week)

Summary

A healthcare educator is both a Healthcare professional and an Educator. As a result, when Leadership is seen through medical education core values, leadership becomes two-fold. It embraces the notion of leadership in the figure of the educator, the notion of teaching leadership to others (so as to improve patient-centered care), but also the core set of values of the healthcare profession. This provides a unique combination which bridges Leadership with patient care.

Introductory Remarks

Leadership can be seen further as "*the process of influencing others to understand and agree about what needs to be done, how it can be done effectively, and the process of facilitating individual and collective efforts to accomplish the shared objectives*". Therefore, leadership goes beyond vision into values, aims, and goals. Leadership does not start from scratch and has to work within the culture of the organization. It is distinct from the position of authority and takes place every day. It is not the trait of the chosen few nor a once in a life-time opportunity. It is both active and reflective and therefore has to alternate both between participating and observing. Medical education leadership is eclectic and can no longer be hierarchical, top-down dealing just with facts, but has to be the lived experience of the leader. Educational leadership is not just about training but also development. This is not a linear process and there is the need to cultivate the talents and sensibilities through which we can care for patients and create the best future for us all. Leadership influences our thinking, actions and ultimately, these decisions affect our healthcare systems and patient care. This is even more imperative now, as there has been a shift of the hierarchy of "healthcare power" from professionals to patients and relatives. Leadership requires constant reshaping, refocusing, and never being satisfied. Passion and ideas drive entrepreneurs.

Leadership in Medical Education can be perceived through 2 lenses: The creation of Medical Educator Leaders, who shape medical education adding leadership creating future Leaders in the healthcare setting. Under this prism, Leadership in medical education can have a direct effect on the provision of appropriate care to patients and to change the mentality and reshape the provision of healthcare. For educational leaders their professionalism means a set of values, behaviors, and relationships that underpins the trust the public has in the health care workforce. To be a professional the flaws in leadership theory need to be understood. Each health care worker no matter in which team, has an obligation to be patient centered. Leaders need to develop across every level of the organization. Distributed leadership is a responsibility of all members of the organization. The idea that leadership is a senior role and has to deliver a paradigm shift with little accountability to the rest of the organization is probably the biggest heresy of all and drives away the inherent emergent leadership within us all.

Aims/Objectives

The aim of the present module is to allow the students critically analyze the differences between a leader in any other setting versus the Leader in healthcare and to apply these differences in order to understand that different approaches taught in the previous weeks can have an impact on patient care.

Learning Outcomes By the end of this session students will be able to

- Compare and contrast the differences between leaders in other setting and leaders in Medical education and the healthcare setting
- Apply the knowledge of the Leadership theories in the context of medical education and extrapolate the results on patient care

Key Words

Healthcare	Professionalism	Train Medical Leaders	Culture of excellence	Leadership theories	Patient-centered approach

Annotated Bibliography

- **Basic Sources/Material**

1. Bolander Laksov, K., & Tomson, T. (2016). Becoming an educational leader – exploring leadership in medical education. International Journal of Leadership in Education, 20: 506–516. (pdf provided)
2. Bryce, T. (2010). Medical Leadership Is Different, in Effective Medical Leadership (Bryce, T.). University of Toronto Press, Canada, pp: 8-24. (pdf provided)
3. Sandhu, D. (2019). Healthcare educational leadership in the twenty-first century. Medical Teacher: 1–5. (pdf provided)

- **Supplementary Sources/Material**
  None

Assessment 1
This is a graded assignment (40% of the total grade of Assignments)
Using the Leadership theories (including the toxic leadership theory), analyze the core values of a Medical Educator leader and extrapolate the results of the various leadership theories in the provision of patient care. Word count 4000 words excluding references, tables and possible figures.

Recommended number of work hours for the student 20 hours

TITLE:
Creating the team: Faculty development to promote leadership in medical education

(5th Week)

Summary

Medical Education Leaders need to instill Leadership skills to other faculty members in order to form a team who can understand and exercise leadership at the organization and at the same time teach leadership at the curriculum. Courses aiming at faculty development regarding leadership should be tailored made for the audience and the needs of the Organization.

Introductory Remarks

Leadership in Medical Education implies that the ideas of leadership will be disseminated to other faculty members so as to create to team of people who can promote the leadership initiative to the students. So far, we have explored the role of the Leader in the organization and now it is the time to investigate ways we can use to disseminate the leadership perspective in other faculty members, who will then in turn incorporate leadership teaching into any Healthcare program (BSc Nursing, MD, BSc Pharmacy, etc). In order to instill the notion of leadership into other faculty members, faculty development programs focusing on leadership skills and attributes need to be created in all healthcare related schools. These initiatives have shown significant satisfaction of the faculty members, significant diffusion of leadership skills to the students and in addition have led other faculty members to assume leadership positions.

As everything in medicine, the programs of faculty development should be customized for the intended faculty; other types of programmes need to be developed for Junior faculty and other formats might be more appropriate for Senior members of the faculty. Like most teachers in higher and professional education, medical school faculty members are hired more for their content knowledge and skills than for their educational prowess. Because of this emphasis, faculty are sometimes criticized for shortcomings in their teaching performances. There may also be concerns about the availability of educational leadership in areas of curricular reform, outcomes assessment, and academic governance. The prototypical faculty development program is a short, focused series of workshops providing exposure to sound educational principles, teaching techniques, or selected topics, ideally with some opportunity to practice newly acquired skills. If one is concerned with augmenting a broader array of educational skills and promoting leadership in medical education, short-term workshops may be unsuccessful simply because of their narrower scope.

Aims/Objectives

To understand the importance of the creation of faculty development programmes regarding Leadership skills, using different frameworks with different theoretical underpinnings

Learning Outcomes

- Critically analyze the need for teaching faculty leadership
- Construct faculty leadership programs within the organizations

Key Words

Faculty Leadership	Shared Responsibility	Faculty Development	Tailor-made programmes	Dissemination

Annotated Bibliography

- **Basic Sources/Material**

1. Gruppen, L. D., Frohna, A. Z., Anderson, R. M., & Lowe, K. D. (2003). Faculty Development for Educational Leadership and Scholarship. Academic Medicine, 78: 137–141. (pdf provided)
2. Hayden, J. (2017). Tomorrow's leaders – the role of leadership in medical -education and training. Future Hospital Journal, 4: 49–50. (pdf provided)
3. McLean, M., Cilliers, F., & Van Wyk, J. M. (2008). Faculty development: Yesterday, today and tomorrow. Medical Teacher, 30: 555–584.
4. Rosenbaum, M. E., Lenoch, S., & Ferguson, K. J. (2005). Outcomes of a Teaching Scholars Program to Promote Leadership in Faculty Development. Teaching and Learning in Medicine, 17: 247–252. (pdf provided)
5. Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19. Medical Teacher, 34: 483–503. (pdf provided)

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 5.1.

Using the Kerns framework for curriculum development devise the learning outcomes for the current situation:

General needs assessment and problem identification

Several themes emerged from existing literature that will be used in your course development. First, faculty development courses with a leadership focus are most effective when multiple educational strategies are employed especially those using experiences and reflection. Second, there are several overlapping content areas potentially demonstrating agreement in their importance. Most of the content areas are in the "leadership" category are universal to all leadership positions (emotional intelligence, communication, conflict resolution, succession planning as examples), with a few (curriculum governance as an example) being specific skills for academic leaders. Third, try to maximize the crucial, hard to measure, value of peer interaction and understanding the organization more fully. Lastly, these courses suggest the importance

of projects and reflection to make the material immediately tangible to the participants' daily work.

Performing the targeted needs assessment

Faculty showed and described lack of leadership skills and theory of leadership. You conducted a survey of our graduate medical education (GME) residency and fellowship program directors and associate program directors to get quantitative data for the need of such a program. The electronic survey asked about individual faculty member's experience and training (as an academic leader).

Exercise 5.2

Comment meaningfully to ONE of your classmates' posts, using scholarly critique

Recommended number of work hours for the student 12 hours

TITLE:

Empowering the team of new Medical Educational Leaders

(6th Week)

Summary

When new members of the faculty have been trained in Medical Education Leadership, it will be your task to maintain and empower the team. This week we will explore barriers and desirable behaviors which promote team spirit and team sustainability and growth.

Introductory Remarks

The previous week, we have explored how the creation of new Teams of Medical Educator Leaders can be created and recruited. This week we will discuss how a Leader can empower the newly created team of faculty members.

Teamwork is defined *"as a cooperative process that allows ordinary people to achieve extraordinary results*". Research has provided several attributes required for successful teamwork. Many of these attributes have been consistently identified in the literature. These are:

Commitment to team success and shared goals - team members are committed to the success of the team and their shared goals for the project. Successful teams are motivated, engaged and aim to achieve at the highest level;

Interdependence - team members need to create an environment where together they can contribute far more than as individuals. A positive interdependent team environment brings out the best in each person enabling the team to achieve their goals at a far superior level. Individuals promote and encourage their fellow team members to achieve, contribute, and learn;

Interpersonal Skills includes the ability to discuss issues openly with team members, be honest, trustworthy, supportive and show respect and commitment to the team and to its individuals. Fostering a caring work environment is important including the ability to work effectively with other team members;

Open Communication and positive feedback - actively listening to the concerns and needs of team members and valuing their contribution and expressing this helps to create an effective work environment. Team members should be willing to give and receive constructive criticism and provide authentic feedback;

Appropriate team composition is essential in the creation of a successful team. Team members need to be fully aware of their specific team role and understand what is expected of them in terms of their contribution to the team and the project;

Commitment to team processes, leadership & accountability - team members need to be accountable for their contribution to the team and the project. They need to be aware of team processes, best practice and new ideas. Effective leadership is essential for team success including shared decision-making and problem solving.

These generic attributes of a team are further magnified in the field of Medical Education. These attributes need to be imbued into the core of the members of the faculty, who have embarked on the journey of implementing leadership in a medical curriculum. Interprofessional barriers exist, but the shared vision of creating a program for healthcare students, irrespective of the discipline, can unite these faculty members into a powerful team of Medical Educators, who can teach leadership to students.

Aims/Objectives

The aim of the module is to explore how a newly formed team of Faculty members, who have been trained in Leadership can create the team, and will create and implement the leadership program to the undergraduate students, can be empowered and sustained

Learning Outcomes

At the end of this week, the students will be able to:

- Discuss the various elements which can empower and maintain the team
- Compare and contrast the role of the Lead Medical Educator as a facilitator of the team

Key Words

Commitment	Interdependence	Interpersonal Skills	Open Communication	Team Composition	Leadership

Annotated Bibliography

- **Basic Sources/Material**

1. Chin, R. J. (2015). Examining teamwork and leadership in the fields of public administration, leadership, and management. Team Performance Management: An International Journal, 21:199–216. (pdf provided)
2. Curran, V. R., Sharpe, D., & Forristall, J. (2007). Attitudes of health sciences faculty members towards interprofessional teamwork and education. Medical Education, 41: 892–896. (pdf provided)
3. Nurmi, R. (1996), Teamwork and team leadership, Team Performance Management, 2:9-13. (pdf provided)
4. Yang, L.-R., Huang, C.-F., & Wu, K.-S. (2011). The association among project manager's leadership style, teamwork and project success. International Journal of Project Management, 29: 258–267. (pdf provided)

- **Supplementary Sources/Material**
  None

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 6.1
This week's readings have shown the importance of empowering a team of faculty members on Leadership. However, the team may neither grow nor be maintained. What elements do you think may make the team dysfunctional?
This is a Team assignment. The members of the team need to post a common scholarly written post in the discussion forum (300 words, excluding references)

Recommended number of work hours for the student 16 hours

TITLE:

Creating and implementing the Leadership curriculum for students

(7th Week)

Summary.
There is increasing evidence that teaching leadership skills in healthcare students both in undergraduate and post-graduate level improves not only leadership skills, but also teamwork, improves communication, leads to self and team improvement and eventually to improved patient-centered care.

Introductory Remarks

Healthcare systems need effective leadership. It is increasingly recognized as essential for high-quality care, with both theoretical and empirical arguments supporting the involvement of engaged clinicians who build strong, collaborative working relationships throughout all teams and organizations. Healthcare professionals can "learn to lead" and increasingly, leadership is explicitly integrated into the professional standards and training requirements of all healthcare professionals. Ambivalence remains about its place within the curriculum and there is uncertainty about the effectiveness and timing of interventions. There is no "right" or "wrong" way to develop the next generation of medical leaders; it is very much a personal and transformative journey. Despite this, the literature – theoretical, empirical and case study – provides us with indications about how leadership development may be integrated into already crowded undergraduate medical curriculum. a clear focus on leadership development should be established at the earliest stages of medical education, with provision that is accessible, appropriate and adapted according to the student's stage of education. A physician's professional education should include basic concepts of team structure and function and the concepts of effective leadership. The six competencies now used by the Accreditation Council for Graduate Medical Education for residency education include "working within a team" under the content area related to patient care. Till (2017) includes 12 tips to integrate leadership in the curriculum:

1. Understand the evidence, rationale, and outcomes required for leadership development in the undergraduate medical curriculum.
2. Reframe leadership as a core part of a medical professional's identity.
3. Enable an exploration of self.
4. Facilitate leadership development through team working.
5. Cultivate an understanding of the organizations and systems that deliver health and care.
6. Adopt the characteristics of successful program design.
7. Define and map a "core curriculum" in leadership development and provide additional opportunities for those who are more interested.
8. Assess the development of leadership competencies, knowledge, skills, and behaviors.
9. Embrace the hidden-curriculum through near-peer learning.
10. Support specialist faculty to lead the development and integration.

11. Connect and harness the power of networks.
12. Contribute to building the evidence base for integration of leadership development into undergraduate medical programs.

Any Medical Educator who is initiating a Leadership curriculum needs to start from the undergraduate level of training and progress to the post-graduate programs. Sound and strong connections with the theoretical underpinning are essential for the students to understand both the flexibility of Leadership definitions as well as the power they will have to transform organizations and improve patient care.

Aims/Objectives.

To understand and the need for designing and implementation of a leadership curriculum in undergraduate and post-graduate level for healthcare professionals

Learning Outcomes By the end of this session students will learn how to

- Critically discuss the need for leadership development programs in healthcare education
- Construct effective Leadership programs for their students

Key Words

Undergraduate	Postgraduate	Leadership	Transformation	Self-improvement	Team-Improvement

Annotated Bibliography

- **Basic Sources/Material**

1. Çitaku, F., Violato, C., Beran, T., Donnon, T., Hecker, K., & Cawthorpe, D. (2012). Leadership competencies for medical education and healthcare professions: population-based study. BMJ Open, 2(2), e000812. (pdf provided)
2. Mark T. O'Connell, M.T.&. Pascoe, J.M. (2004). Undergraduate Medical Education for the 21st Century: Leadership and Teamwork. Family Medicine 36 :S51-56. (pdf provided)
3. Sadowski, B., Cantrell, S., Barelski, A., O'Malley, P. G., & Hartzell, J. D. (2018). Leadership Training in Graduate Medical Education: A Systematic Review. Journal of Graduate Medical Education, 10: 134–148. (pdf provided)
4. Sultan, N., Torti, J., Haddara, W., Inayat, A., Inayat, H., & Lingard, L. (2018). Leadership Development in Postgraduate Medical Education. Academic Medicine, 1. doi:10.1097/acm.0000000000002503. (pdf provided)

5. Till, A., McKimm, J., & Swanwick, T. (2017). Twelve tips for integrating leadership development into undergraduate medical education. Medical Teacher: 1–7.
6. Webb, A. M. B., Tsipis, N. E., McClellan, T. R., McNeil, M. J., Xu, M., Doty, J. P., & Taylor, D. C. (2014). A First Step Toward Understanding Best Practices in Leadership Training in Undergraduate Medical Education. Academic Medicine, 89: 1563–1570. (pdf provided)
7. Varkey, P., Peloquin, J., Reed, D., Lindor, K., & Harris, I. (2009). Leadership curriculum in undergraduate medical education: A study of student and faculty perspectives. Medical Teacher, 31: 244–250. (pdf provided)

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 7. Graded Assignment 30% of the total assignment grade

In a an essay of 3000 words excluding references you will need to devise the rationale for creating a leadership program for any healthcare related profession. The Leadership module should stand alone or be integrated in the curriculum. Clearly devise learning outcomes in a scholarly manner and attach the program as an appendix. Please note that the Appendix does not count towards your word limit.

Recommended number of work hours for the student 20 hours

TITLE:

Frameworks for Leadership in Medicine

(8th Week)

Summary

The two frameworks provided in this week reading set the tone of 2 continents, Europe and most specifically the United Kingdom and USA. Each framework provides a different insight in Leadership competence.

Introductory Remarks

This week, we will study 2 different frameworks for leadership Competence from 2 different regulating bodies. These frameworks are not the only ones in the world, but they will provide the basis for further analysis of the competencies and the different conceptual works which complement the Leadership competency. Good medical leadership is vital in delivering high-quality healthcare, and yet medical career progression has traditionally seen leadership lack credence in comparison with technical and academic ability. Individual standards have varied, leading to variations in the quality of medical leadership between different organisations and, on occasions, catastrophic lapses in the standard of care provided to patients. As healthcare leaders' roles change, so do the expectations of higher education in preparing future leaders. Subsequent research has also suggested the model can serve well as a "common language" platform onto which leadership models from healthcare management professional associations as well as clinical disciplines can be cross-mapped.

Aims/Objectives

The aim of the current week is to provide students with frameworks used in the United Kingdom and the United States of America to enhance their understanding of the requirements of any Curriculum regarding Leadership in healthcare students.

Learning Outcomes By the end of this session student will learn how to

- To use various frameworks to achieve Leadership competence in Medical education (both undergraduate and post-graduate).
- To effectively reflect on their construction of Leadership curriculum with the aim of self-improvement.

Key Words

Personal Qualities	Working with Others	Managing Services	Improving Services	Setting Direction

Professional & Social Responsibility	Health System Awareness & Business Literacy	Self-Awareness & Self-Development	Transformation	Relations

Annotated Bibliography

- **Basic Sources/Material**

1. Academy for Royal Medical Colleges (2010). Medical Leadership Competency Framework. Enhancing Engagement in Medical Leadership Third Edition.(pdf provided)
2. National Center for Healthcare Leadership (2018). Health Leadership Competency Model 3.0. (pdf provided)

- **Supplementary Sources/Material**
  None

Exercise 8.1
Each student should post a reflection of around 500 words regarding their assignment from week 7. You can use any of the reflection tools. What elements would you improve in your created Leadership curriculum?

Exercise 8.2
Make one meaningful scholar comment in one of your classmates' reflections.

Recommended number of work hours for the student 12 hours

TITLE:

Experiential Learning for Leadership

(9th Week)

Summary

There is little doubt in the existing literature that Leadership skills should be imbedded in the undergraduate and post-graduate, experiential learning in Leadership is still a very "hot" research topic for all disciplines, medical education included. There is theoretical background that experiential learning can improve leadership skills in medicine, but research data are still accumulating on the topic.

Introductory Remarks

Experiential Learning Theory (ELT) has its roots in the experiential works of Dewey, Lewin, and Piaget. Unlike cognitive learning theories, which tend to emphasize cognition over affect, and behavioral learning theories, which do not allow any role for consciousness and subjective experience in the learning process, experience plays a central role in ELT's process. ELT is intended to be holistic adaptive process on learning that merges experience, perception, cognition, and behavior. Previous research has shown that learning styles are influenced by personality type, educational specialization, career choice, current job role and tasks, and cultural influences. ELT defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience. For effective learning to transpire, the learner must go through the entire cycle. The four-stage learning model depicts two polar opposite dimensions of grasping experience–concrete experience (CE) and abstract conceptualization (AC), and two polar opposite dimensions of transforming experience – reflective observation (RO) and active experimentation (AE). Experiential learning is a process of constructing knowledge that involves a creative tension among the four learning abilities. The learner must continually choose which set of learning abilities to use in a specific learning situation. Novices develop into experts by incrementally acquiring skills that depend on accruing experience. Medical Leadership models should therefore show sets of rules guiding novice education, giving way to different rules as the skills hierarchy is scaled. Reflective practice unites discussion of leadership skills with experiential learning. What remains to be answered in the literature in a robust manner is the level of evidence which connects reflective practice with leadership. Some data indicate that experiential learning. Experiential training activities in areas of self-awareness, communication styles, conflict management, feedback, and awareness of group process, to medical leaders in other specialties and at lower and higher levels of training would be valuable. Vehicles should be developed to make such training

easily accessible and appealing to physicians. This would help address the need for effective physician leaders.

Aims/Objectives

The aim of this week's reading is to expose the students to experiential learning and the possible effects of this approach to teaching Leadership.

Learning Outcomes By the end of this session student will learn how to

- Compare and contrast Experiential Learning to the other learning theories in medical education.
- Discuss how experiential learning can be used to teach Leadership in Healthcare.

Key Words

Experiential Learning	Reflection	Leadership	Concrete Experience	Abstract Conceptualization	Active Experimentation

Annotated Bibliography

- **Basic Sources/Material**

1. Andersson, T. (2015). The medical leadership challenge in healthcare is an identity challenge. Leadership in Health Services, 28: 83–99. (pdf provided)
2. Cathcart, E. B., Greensoan, M., & Quin, M. (2010). The making of a nurse manager: the role of experiential learning in leadership development. Journal of Nursing Management, 18: 440–447. (pdf provided)
3. Doughty, R. A., Williams, P. D., Brigham, T. P., & Seashore, C. (2010). Experiential Leadership Training for Pediatric Chief Residents: Impact on Individuals and Organizations. Journal of Graduate Medical Education, 2: 300–305. (pdf provided)
4. Kolb, A. Y., & Kolb, D. A. (2005). Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education. Academy of Management Learning & Education, 4:193–212. (pdf provided)
5. 2. Kolb, A. Y., & Kolb, D. A. (2006). Learning styles and learning spaces: A review of the multidisciplinary application of Experiential Learning Theory in Higher Education, In Learning Styles and Learning, Sims, R.R & Simms, S.J. (Eds), Nova Science Publishers, pp: 45-91. (pdf provided)

6. Yardley, S., Teunissen, P. W., & Dornan, T. (2012). Experiential learning: AMEE Guide No. 63. Medical Teacher, 34: e102–e115. (pdf provided).

- **Supplementary Sources/Material**
  None

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 9.1
You are already familiar with Kolb's reflective cycle and Kolb's learning styles (Diverger, Assimilator, Converger, Accommodator). How would you describe yourself in the frame of Kolb's learning styles and at which point of the reflective cycle you see yourself? How do you think this might help you in developing leadership skills? Post your scholarly analysis in a post of 300 words at the discussion forum.

Exercise 9.2
Comment on one of your classmates' comments in a scholarly manner.

Recommended number of work hours for the student 14 hours

TITLE:

Mentoring and Leadership

(10th Week)

Summary

Mentoring offers many advantages to Healthcare Professionals, whether they are working in the Academia of other Healthcare settings. Leadership develop has shown to improve patient care. By definition, leadership includes professional improvement by self and professional growth. The role of mentoring in developing various skills has been extensively investigated in medicine and several Institutions and Professional Organizations offer mentoring schemes to improve mentees and mentors' satisfaction and improve cognitive and metacognitive processes on leadership for both parties

Introductory Remarks

Mentoring stems from Ancient Greek mythology and was recently re-invented and re-defined as Zone of Proximal Development, as Guided Participation and as Scaffolding. Medicine and mentorship have a long-standing relationship. Mentoring offers benefits to both the mentors and the mentees, including increased professional skills, decreased stress and anxiety, improved insight, greater awareness, and improved self-esteem. Although there are numerous benefits to mentoring, there are several challenges as well, including time constraints, incompatible pairing of mentors and mentees, qualities of mentors, and training of mentors. There are many types of mentorship beyond the traditional hierarchical model. Despite a substantial amount of literature on different mentoring models, effectiveness of peer mentorship for faculty members in academic institutions remains vastly understudied and underreported. Leadership training in academic medicine typically supports training in the skills needed for academic success. Sponsors of these types of programs range from individual institutions to national organizations. The Association of American Medical Colleges (AAMC) offers career-specific and general leadership skills programs for faculty in all stages of their careers and categorize their offerings by career stage and skills to be gained. Expansion of a peer mentoring network to a regional and national level can also take place via engagement with national professional associations. In response to a critical need for increased representation of women and minorities in scientific and clinical leadership, multiple organizations such as the American Academy of Neurology, American Gastroenterology Association, American Society of Bone and Mineral Research, Endocrine Society, American Diabetes Association (ADA), and American Heart Association each have formal Women's Leadership groups and/or diversity programs. For organizations developing middle- and senior-level leaders, theory in the areas of mentoring, leadership development, and management learning can all help inform decisions about how to best develop these individuals. First, given the importance of organizational leaders in helping their employees develop as leaders and their institutions to become industry leaders, the constructs included in mentoring are particularly relevant for this research. As noted

above, mentoring has been described as a developmental relationship that can enhance both individual growth and advancement, and health care leaders can serve as important mentors and role models for employees they hope to develop.

Aims/Objectives.
To describe the concept of mentoring in professional development of the mentee with a special focus on Leadership.

Learning Outcomes at the end of this session students will learn how to

- Define the role of mentoring in the development of mentees' professional qualities.
- Construct concepts of leadership aspects which can be improved with mentoring

Key Words

Zone of Proximal Development	Guided participation	Scaffolding	Self-improvement	Promotion	Leadership

Annotated Bibliography

- **Basic Sources/Material**

1. Clayton, J. K., Sanzo, K. L., & Myran, S. (2012). Understanding Mentoring In Leadership Development. Journal of Research on Leadership Education, 8: 77–96. (pdf provided)
2. Cree-Green, M., Carreau, A.-M., Davis, S. M., Frohnert, B. I., Kaar, J. L., Ma, N. S., … Nadeau, K. J. (2020). Peer mentoring for professional and personal growth in academic medicine. Journal of Investigative Medicine, jim–2020–001391. (pdf provided)
3. Dziczkowski, J. (2013). Mentoring and Leadership Development. The Educational Forum, 77: 351–360. (pdf provided)
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5. Sambunjak, D., Straus, S. E., & Marušić, A. (2006). Mentoring in Academic Medicine. JAMA, 296(9), 1103. (pdf provided)
6. Scheck McAlearney, A. (2005). Exploring mentoring and leadership development in health care organizations. Career Development International, 10: 493–511. (pdf provided)

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities
Assignment. This will be a graded assignment and accounts for 30% of your total assignment grade.
Describe any experience you might have had, or still have as a mentee or as a mentor. How was mentoring used to improve leadership skills, and what skills were developed? Using Kolb's reflective cycle, how would you possibly improve the mentoring you have received or provided?
.

Recommended number of work hours for the student 20 hours

TITLE:

Assessment of Leadership

(11th Week)

Summary

Devising a Leadership program maybe challenging, especially when one has to integrate it within the curriculum to ascertain that leadership is taught in a spiral way, where various topics of leadership are being revisited with increased level of difficulty. Designing an assessment for a delivered leadership curriculum maybe even more challenging, because the existing instruments may overestimate the effect of the teaching intervention.

Introductory Remarks

Kirkpatrick described four increasingly impactful “levels” in evaluating training programs: (a) gauging participant reactions, (b) gauging participant learning, (c) evaluating changes in participant behavior, and (d) measuring organizational impact as a result of participant behavior change. Educators must be aware that when assessing student leadership development, it is critical to differentiate between measuring students’ satisfaction and immediate reaction to the program and assessing learned leadership skills that are applied and practiced by students once a program is over or a course is complete. While having students complete program evaluation forms may tell educators about satisfaction levels or perceived benefits of a specific leadership experience based on students’ immediate self-report data, accurately measuring behavioral and developmental changes in students’ leadership development because of a program or experience is more complex.

Despite the fact that several assessment tools have been developed for various Medical Leadership programs, these can fail to capture the difference between a leader and leadership skills. claiming that leader development focuses on developing individual skills, knowledge, and abilities to enhance human capital, while leadership development requires relationships and interpersonal exchange to build social capital. Based on this distinction, leadership development in higher education should be conceptualized as an “integration strategy” where students learn the skills required for their own individual success in areas such as project management and acting ethically, as well as how to better relate to and connect with others in order to develop organizations and promote transformative change. Rosch & Schwartz (2009) added to the debate that regarding assessment of Leadership, there can be some effects, which can create biases in our measurements. The issues that arise, as you will read from this week’s readings can be classified into 5 categories:

1. Honeymoon Effect
2. Horizon Effect

3. Hollywood Effect
4. Halo Effect
5. Hallmark Effect

These effects need to be taken into consideration when you devise Assessment of Leadership. The possible solutions have been described in the literature for avoiding the various effects which can lead to overestimation of the Intervention.

Aims/Objectives.

The aim of this week's readings is to explore the complexity of assessing leadership in any healthcare curriculum.

Learning Outcomes By the end of this session, students will learn how to:

- Apply the assessment principles to the leadership curriculum.
- Discuss how the various effects may confound the results of the assessment and apply ways to overcome these effects.

Key Words

Assessment principles	Honeymoon Effect	Horizon Effect	Hollywood Effect	Halo Effect	Hallmark Effect

Annotated Bibliography

- **Basic Sources/Material**

1. Rosch, D.M. & Schwartz, L.M. (2009). Potential Issues and Pitfalls in Outcomes Assessment in Leadership Education. Journal of Leadership Education, 8:177-194. (pdf provided)
2. Ross, S.J., Gupta, T.S. & Johnson, P. (2021). Leadership curricula and assessment in Australian and New Zealand medical schools. BMC Medical Education, 21:28. (pdf provided)
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4. Turrentine, C. G. (2001). A Comparison of Self-Assessment and Peer Assessment of Leadership Skills. Journal of Student Affairs Research and Practice, 38: 361–371. (pdf provided)

5. Solansky, S. T. (2010). The evaluation of two key leadership development program components: Leadership skills assessment and leadership mentoring. The Leadership Quarterly, 21: 675–681. (pdf provided)

- **Supplementary Sources/Material**
  None

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 11.1
Using your learning goals described in previous weeks, devise a blueprint for Assessment of Leadership, discussing possible confounding factors and ways to overcome these. (300 words excluding references).

Exercise 11.2
Comment on one of your classmates posts in a scholarly manner

Recommended number of work hours for the student 10 hours

TITLE:
Leadership in Healthcare: The Job

(12th Week)

Summary

Being a Leader in Healthcare is becoming more and more challenging, due to a shift to a patient-centered care, reduced expenses and better patient outcomes. Leadership within any healthcare organization is related to personal attributes and characteristics of the position. On a macro-level, leadership maybe related to the context of healthcare as it is perceived culturally and socially.

Introductory Remarks

Leadership as a concept is often considered from three perspectives: person, position and process. Often the person and positional characteristics are regarded as more important than the healthcare context itself, but this may not be absolutely true.

The person perspective focuses on the characteristics of the leader, qualities that are both innate and learned. Particular qualities such as extraversion, self-confidence, self-awareness and resilience are usually considered important. Recently, it has been suggested that introversion may be a valuable leadership trait as these individuals are more likely to listen to others' concerns. Formal position within an organisation, such as consultant, brings with its authority to lead others. In healthcare, leadership may be reinforced by the prestige of the formal role within the hierarchy. For example, the chief executive, as a consequence of position has the opportunity to exert a greater influence. However, leadership is not only found within senior roles. Within healthcare organisations, there are often questions about leadership across professional and managerial boundaries. For example, an NHS chief executive's authority as leader is complicated by relationships with politicians, who set the policy context, and clinicians on whose expertise healthcare delivery depends. The capacity of these groups to affect the leadership of senior management within the organisation is significant.

In healthcare, leadership may be considered a social process, and people in leadership positions have the opportunity to transform organisations through influence. Studies of clinical leadership recognise the importance of relationship management and the need for emotional intelligence and coaching skills to achieve this. Leadership with authority is also called positional power, often given through other people through election or appointment. This is an important source of leadership in healthcare whether clinical or managerial. However, it is increasingly recognised that it is becoming more difficult for a single person to accomplish the work of leadership, particularly due to the volatility of change in the external environment. Leaders therefore have to lead and react to change with higher levels of uncertainty. If newer ways of working are to be implemented, then some leadership tasks may need to be shared. Examples include cancer collaborative and inter-organisational partnership working. In some circumstances there may be both

individual leadership combined with shared leadership, where teams may have an acknowledged head or formal leader but a number of members in the team may contribute to the work of leadership. In various complex change situations such as restructuring, there may be a 'leadership constellation' whereby the leadership role passes at different phases between different individuals and groups with differing bases of expertise at different times. Another model of shared leadership involves 'distributed leadership'. This approach sees leadership as 'leading others to lead themselves'. It has been argued that the greatest leadership challenge is to enable others to act and build leadership capacity in the organisation. Distributed leadership challenges traditional assumptions that leaders are superior to their followers. When leadership responsibilities are shared across different elements of a task there is new focus on sharing knowledge and power. In this model of leadership the dependence of followers on formal leadership figures decreases and the group becomes more empowered. In healthcare organisations, where healthcare improvement and change are required, distributed leadership by change agents may be of value. Leadership without authority, also called informal leadership has a different set of activities associated with it. Within the realm of healthcare, there are various informal leaders ranging from influential clinicians whose views are highly regarded or frontline staff who may be particularly persuasive with their peers. 'Direct' leadership occurs when the size of the group allows frequent interpersonal contact, often the front line, where the group is used to seeing the leader daily. In the context of healthcare, an example would be the ward sister or consultant in charge of an operating team. In contrast, indirect leadership may be exercised through a chain of command where the relationship is too distant to be based on personal interaction. Effective indirect leaders are also aware of symbolic acts such as time spent on the shop floor to gauge a sense of frontline challenges and tasks.

Aims/Objectives

The aim of this week's reading is to better define the types of Leader in the Healthcare setting.

Learning Outcomes By the end of this session, students will learn how to

- Compare and contrast the several leadership styles on a day-to-day perspective of a leader.
- Apply the models to real-life situations

Key Words

Shared leadership	Distributed Leadership	Collaborative Leadership	Direct Leadership	Indirect Leadership	Organizational change

Annotated Bibliography

- **Basic Sources/Material**

1. Bryce, T. (2010). The Medical Leader's job, in Effective Medical Leadership (Bryce, T.). University of Toronto Press, Canada, pp: 25-49. (pdf provided)
2. Bryce, T. (2010). The Characer of a Leader, in Effective Medical Leadership (Bryce, T.). University of Toronto Press, Canada, pp: 209-220. (pdf provided)
3. Forsyth, C., & Mason, B. (2017). Shared leadership and group identification in healthcare: The leadership beliefs of clinicians working in interprofessional teams. Journal of Interprofessional Care, 31:291–299. (pdf provided)
4. Hargett, C., Doty, J., Hauck, J., Webb, A., Cook, S., Tsipis, N., … Taylor, D. (2017). Developing a model for effective leadership in healthcare: a concept mapping approach. Journal of Healthcare Leadership, Volume 9, 69–78. (pdf provided)
5. Menaker, R. (2009). Leadership Strategies in Healthcare. The Journal of Medical Practice Management, 24: 339-343. (pdf provided)
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- **Supplementary Sources/Material**

1. Trastek, V. F., Hamilton, N. W., & Niles, E. E. (2014). Leadership Models in Health Care—A Case for Servant Leadership. Mayo Clinic Proceedings, 89: 374–381.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 12.1

During this module we have discussed many approached to leadership. However, no matter what type of leadership style anyone wants to exert in his/her setting, any leader should be proactive and reactive. Compare and contrast the proactivity with reactivity in healthcare. Post your comment (400 words excluding references to the discussion forum).

Recommended number of work hours for the student 12 hours

TITLE:

Leadership in Healthcare: The Team

(13th Week)

Summary.

Teamwork in Medicine and healthcare provision becomes more and more important. As with all teams, three elements are equally important: Leadership, communication, co-operation, and followership.

Introductory Remarks.

The literature defines a team as a set of two or more individuals, who must interact and adapt to achieve specific shared, valued objectives. Two aspects of the teams are important: the individual's ability to function as a member of the team and the entire team's ability to function as an efficient collective entity. Several factors, such as task demands, team composition and the organisational context, influence team performance. Medical teams have a variety of tasks and the teams consist of many different team members, changing from task to task and from day to day. This implies that each of the team members should possess general team competencies or generic team skills, which can be transferred from task to task, and from team to team. A prerequisite for participation in team training might be that the individual member has the knowledge and skills to perform as an individual group member. The importance of leadership and train the team leader is emphasized so as to take charge, avoid getting too involved in practical issues, and the ability to step back and have a ''bird's eye'' view on the situation. Equally important is followership, meaning that each team member understands his or her role in the team, ranging from doing as requested to actively participating in problem solving and decision making, and if necessary, decrease the workload on the team leader. The team leader might focus on an incorrect diagnosis and apply the wrong rule (treatment) owing to a fixation error, or be incapacitated, hence everyone in the team should always be alert.

Aims/Objectives

The aim of the present week's readings is to emphasize the team in healthcare

Learning Outcomes By the end of this session students will learn how to

- Critically apply the theories of leadership in the creations of healthcare providing teams
- Discuss the roles of communication and active follower

Key Words

Communication	Leadership	Members	interdisciplinary	multidisciplinary	Shared decision

Annotated Bibliography

- **Basic Sources/Material**

1. Bryce, T. (2010). The Team and Teamwork, in Effective Medical Leadership (Bryce, T.). University of Toronto Press, Canada, pp: 50-61. (pdf provided)
2. Bryce, T. (2010). The Personnel, in Effective Medical Leadership (Bryce, T.). University of Toronto Press, Canada, pp: 62-102. (pdf provided)
3. Hall, P., & Weaver, L. (2001). Interdisciplinary education and teamwork: a long and winding road. Medical Education, 35: 867–875. (pdf provided)
4. Lerner, S., Magrane, D., & Friedman, E. (2009). Teaching Teamwork in Medical Education. Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine, 76: 318–329. (pdf provided)
5. Ostergaard, H. T. (2004). Implementation of team training in medical education in Denmark. Quality and Safety in Health Care, 13: i91–i95. (pdf provided)

- **Supplementary Sources/Material**

None

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 1.1. Now that the module of Leadership has been completed, please write a learning Log for the module, as a team. What have you leant and how has this learning affected your practice? Post your learning log in the discussion forum (500 words excluding references.

Recommended number of work hours for the student 12 hours

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

The Final Exam represents that the student attained all the necessary knowledge and skills of the profession included in the program.

(14th week)

Recommended number of work hours for the student
Approximately 60 hours.

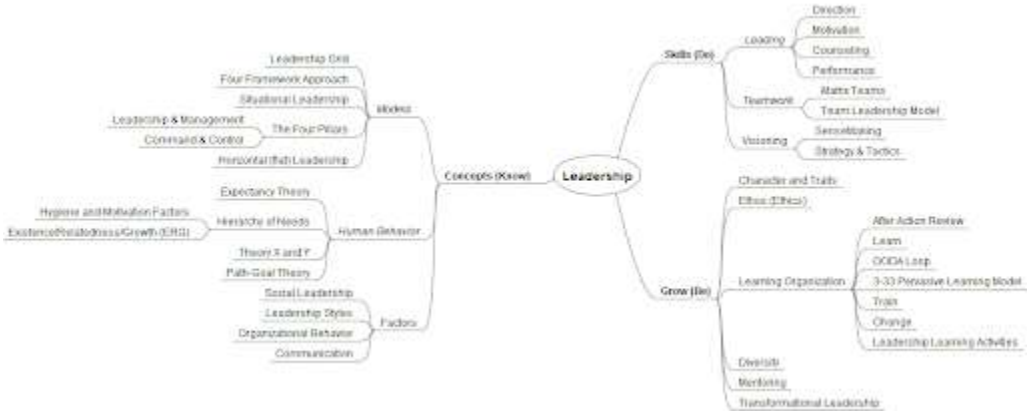
INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

Title: Defining Leadership Concepts

(1st Week)

Exercise 1.1

There are several concept maps for Leadership and no-one holds the absolute truth. Here, please find some examples of concepts maps on leadership, ranging in complexity and design.



Exercise 1.2
Comment in One of the other teams' concept map. Use scholarly analysis including references to support your arguments. NO word limit

Title: The main leadership theories

(2nd Week)

Please see the following table as a comparison

Servant Leaders	Transformational Leaders
Focused on service to followers, customers, and the organization	Focused on the goals of the organization
Influence by serving the needs of others	Influence by modeling
Promote team problem solving	Use persuasion
Individualized development	Promote individualized influence
Motivate by providing autonomy and resources	Motivate with charisma to attain a common goal

Title: Toxic Leader

(3rd Week)

Exercise 3.1

The attributes of the toxic leader are shown as keywords in this week's plan. These leaders tend to be destructive and they people working with them suffer, if they object to their decisions. The people who support their decisions are usually promoted. There is a range of bibliography who taxonomizes the followers these attract. The following figure depicts the situation

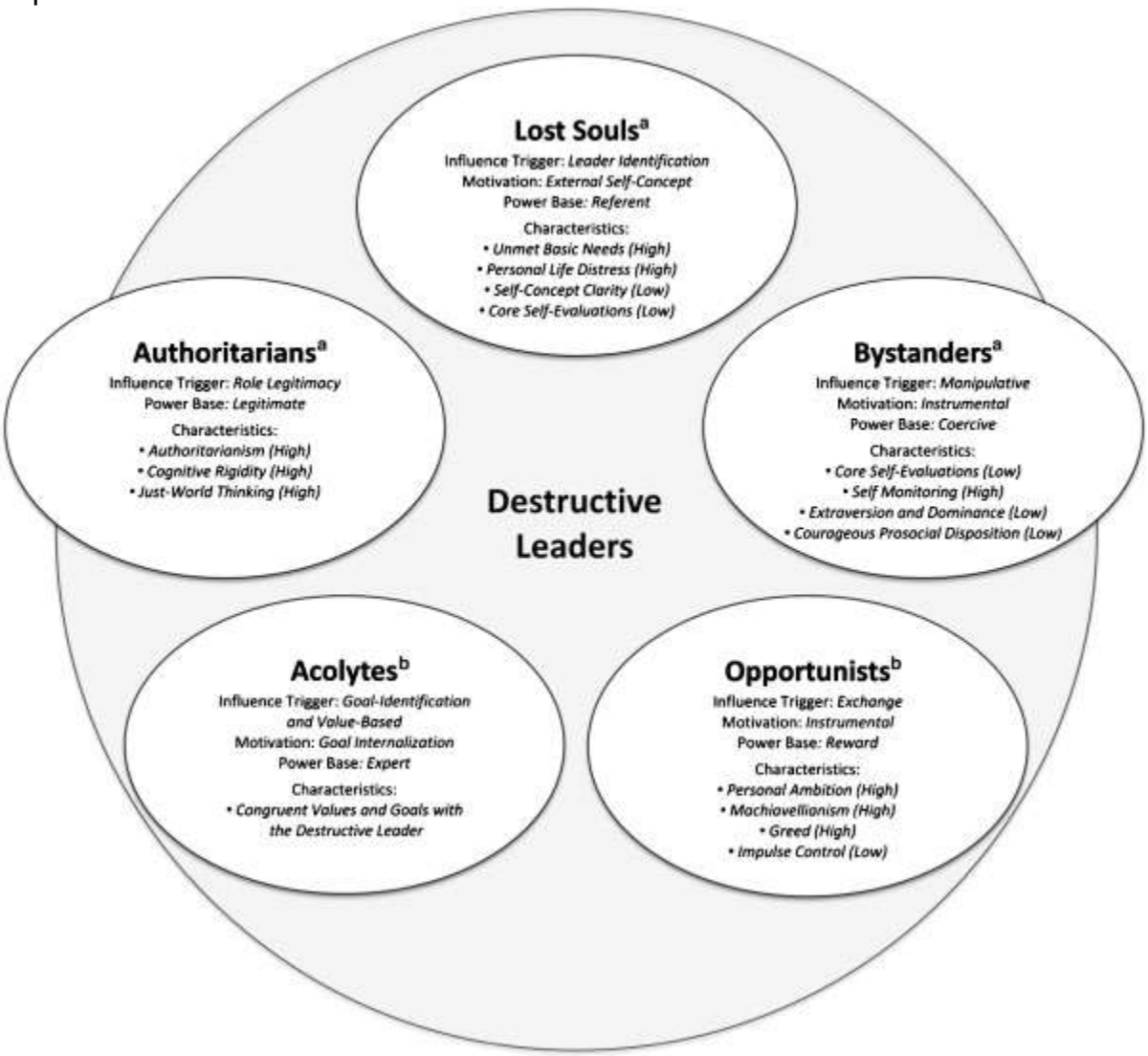


Image from Thoroughgood, C. N., Padilla, A., Hunter, S. T., & Tate, B. W. (2012). The susceptible circle: A taxonomy of followers associated with destructive leadership. The Leadership Quarterly, 23: 897–917.

Title: Healthcare educational leadership

(4th Week)

Assignment 1: This will be a graded assignment (40% of your total assignment grade).

Title: Creating the team: Faculty development to promote leadership in medical education

(5th Week)

Exercise 5.1

Please consider the following learning outcomes. Remember that several other learning outcomes could have been created from the current situation. The main learning outcomes can be seen here:

- Increasing the individual's awareness of and improving their own emotional intelligence,
- being familiar with management of personnel and change within the organization,
- fostering interdepartmental and interhospital networking and problem solving, and
- enhancing the use of core principles and frameworks for managing and leading educational programs.

Exercise 5.2

Using the existing literature comment on the goals of one of your classmates

Title: Empowering the team of new Medical Educational Leaders

(6th Week)

Exercise 6.1

Consider the following points:

1. absence of trust,
2. fear of conflict,
3. lack of commitment,
4. avoidance of accountability
5. inattention to results

6. Mutual accountability can be threatening, if collective goals are ambiguous or unclear

Title:

Creating and implementing the Leadership curriculum for students

(7th Week)

Exercise 7. Graded Assignment (30% of your total Assignments' grade)

:

Title:

Frameworks for Leadership in Medicine

(8th Week)

Exercise 8.1
This is an open reflection exercise for improvement. You can use any of the reflective tools, such as Gibb's reflective cycle, Kolb's cycle, deBono Hats, etc. Find ways you can improve your curriculums now that you have been exposed to the frameworks.

Exercise 8.2
This exercise aims at providing critique in a scholarly manner to your peers. Your comment should be constructive and aims at both providing and receiving effective feedback from peers

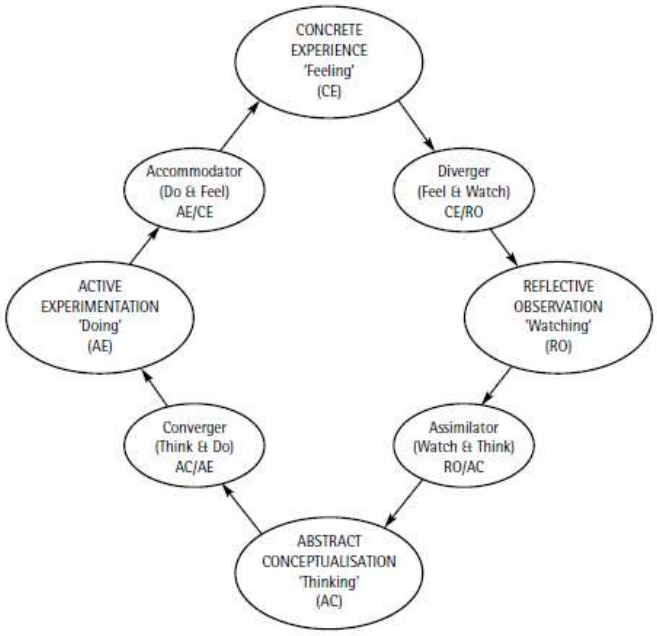
Title:

Experiential Learning for Leadership

(9th Week)

Exercise 9.1

Use this image as a guide:



And this table:

Table 1: Learning Styles Chart.

ACCOMMODATORS	DIVERGERS
Getting things done Initiating tasks Getting personally involved Willing to take risks Strong sense of urgency Needs patience Speed vs. input	Creative Involve others in their process Try to view concrete solutions from different perspectives Do something new just for the sake of it People oriented Can miss the point Difficulty actually making decisions Focus vs. more ideas
CONVERGERS	**ASSIMILATORS**
Makes decisions from alternatives available Move towards decisions very fast Finds practical uses for theories May shut out information that does not fit the solution they develop May not involve others with different views Technical vs. people	Organising and integrating information Planners Creating models Developing theories Slow to make decisions Data vs. people

*Adapted from Kolb: Learning Styles Inventory (2005)

Both are from: Turesky, E.F.& Gallagher, D. (2011). Know thyself: Coaching for leadership using Kolb's Experiential Learning Theory. The Coaching Psychologist, 7: 5-14.

Title:

Mentoring and Leadership

(10th Week)

Exercise 10. This will be a graded assignment (30%) of your total assignment grade**.**

Title:

Assessment of Leadership

(11th Week)

Exercise 11.1
Using the learning outcomes you have created in week 7 create an assessment strategy for these. In your analysis take into consideration, the possible confounding effects mentioned in the introduction of this week's readings.

Exercise 11.2
Provide critique or reflection to one of your classmates' posts. Use scholarly analysis in your post.

Title:

Leadership in Healthcare: The Job

(12th Week)

Exercise 12.1

Use the following as guide:

Consider that in Healthcare, situations appear unexpectedly. An effective leader may need to become reactive in several situations.

Title:

Leadership in Healthcare: The Team

(13th Week)

Exercise 13.1 The learning log is diary of your learning as a team during this module. It is the production of team work and requires effective communication, leadership and active membership and demonstrates what you have achieved and what could be improved

Title:

FINAL EXAM

(14th Week)

The final exam is a composed by the following: multiple choice questionnaire (MCQ), two essay questions along with two digital case scenarios.

Please note: The following questions, essay tasks, and case scenarios are provided here are not to be used or reproduced for any purpose.

The MCQ will have 15 questions with provided four answers per each, where all sessions will be covered. All correct answers must to be marked. The minimum to pass is 70%. Incorrect answers will not have addition of negative points. Time to complete the MCQ is 15 minutes.

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE662-Cultural Competence in Medical Education

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE662-Cultural Competence in Medical Education**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☐	Elective ☒	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (15%), 2 (10%)		
Assessment	Assignments	Final Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Theodoros Xanthos
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING:

INTRODUCTION

Programme Presentation

Program's purpose and objectives:

Healthcare professionals are increasingly required to have formally recognized teaching qualifications. This program is suitable for doctors and other healthcare professionals who are responsible for teaching, assessing and supporting undergraduate students and trainees, either in institutions or in the workplace. The program is designed for busy healthcare professionals, such as GPs, doctors, nurses, healthcare professionals and those with related undergraduate degrees, including pharmacy, and physical therapy.

The MSc Program aims to help students to develop their scholarship and research skills in order to effectively train healthcare professionals of the future. The program offers students an introduction to teaching, learning and assessment for effective teaching both in undergraduate and post-graduate students with the ultimate aim to improve patient safety. The MSc in Medical Education is designed for individuals who are interested in developing a critical knowledge for the effective application of medical education in local and international contexts.

The program fosters advanced skills of comprehension, interpretation, and analysis through courses that include examination of Medical Education Theories and their application into practice. It sensitizes students to the dynamic of infrastructures and learning environments (whether physical or virtual) and concentrates on how new technologies can be used to enhance effective medical education. The program can be offered completely as a taught course, where students successfully succeed in 9 courses (6 compulsory and 3 electives) or 6 compulsory courses and a Thesis

GENERAL OBJECTIVES: The program seeks to:

- broaden opportunities for qualified students for entry into higher level education studies
- to promote professional development and enhance research activity, both for those involved and for the general public
- to cultivate ethically and professionally sound research and practice in Medical education and to contribute to the development of a reflective and analytical attitude towards delivery of medical knowledge with an ultimate goal to improve patient safety
- to cultivate / develop an advanced postgraduate activity that is characterized by intellectual stimulation, is professionally compatible and useful and leads to research activity for the production of new and / or remodeling of existing knowledge, as a basis for decision making and problem solving in issues of medical education

- to broaden research and academic cooperation of all kinds with participants, scholars, educational institutions and academic staff**.**

SPECIFIC OBJECTIVES: More specifically, the program seeks to:

- provide opportunities for MSc students to study in detail topics related to advanced academic studies and the systematic research in the field of Medical Education
- advance MSc students' familiarity with the theories of the area of their research within Education Sciences, epistemological theories in the field of Medical Education, as well as research methods, aiming to further delve into their area of interest viewing it in a broader perspective
- to facilitate MSc those students, who choose the Thesis option, in conducting individual and independent research and producing an academic dissertation at a highly specialized level within the boundaries of their field
- help MSc students develop skills in understanding and using qualitative and quantitative methods and measurements, and using multivariate statistics to draw conclusions and make decisions based on relevant research data
- help MSc students develop the knowledge and skills necessary to use methods and theories of their area in an independent and critical manner, producing new knowledge in Medical Education
- prepare MSc students for new knowledge production or remodeling of existing knowledge, creating the basis for the development of pedagogical / educational theories through applied research
- enable graduates to get a deeper insight into today's complex medical educational environment and apply the knowledge gained to emerge as career leaders of their choice
- Develop the ability to critique and analyze a broad range of materials and communicate ideas and theories effectively.
- Develop advanced written and verbal skills through the composition of thoroughly researched term papers, surveys based on an analysis of previously collected data
- Acquire the ability to work within a team and develop presentation skills.

Presentation of the Course through the Study Guide

Short description & objectives: The purpose of the present course is to educate students on how cultural diversity can alter the way people learn and construct knowledge in Medical Education. The course will also discuss stereotyping in Medical education and how this needs to be eliminated or smoothened when delivering Medical Education. The course will also address how future physicians should interact with the culturally diverse patient population that contributes to their educational experience. Upon successful completion of this course students should be able to:

- discuss intercultural communicative competence

- compare and contrast task design in language and Medical Education (including intercultural problem based learning, integrating intercultural learning with problem based learning scenarios)
- discuss medical talk including intercultural framing and intercultural interactions in Medical settings
- Discuss critical cultural awareness
- describe different perspectives of illnesses and diseases in various cultures
- Describe medical pluralism
- Compare and contrast birth in different cultures
- discuss course design for intercultural language education in medical settings
- understand language and literature in medical education by selecting intercultural resources
- describe the visual arts in medical education

Recommended student work time

Approximately 10 hours (including the study of the Guide)

TITLE:

Definitions of Cultural Competence

(1st Week)

Summary .
Cultural Competence has become important in any aspect of the services we provide, given that globalization and migration create multi-cultural environments where different social, ethnic or even social and religious structures exist.

Introductory Remarks

In societies that are rapidly becoming multicultural, healthcare providers deal increasingly with patients from a variety of ethnic backgrounds. Hence, 'cultural competence' has been suggested as an instrument that can be used to prepare doctors and to support them in dealing with issues such as ethnic diversity. Cultural competence is generally defined as a combination of knowledge about certain cultural groups as well as attitudes towards and skills for dealing with cultural diversity. However, as a concept or strategy, cultural competence is not yet fully developed. The most widely used definition of cultural competence comes from Cross. Cultural competence is defined as a set of congruent behaviors, attitudes, policies, and structures that come together in a system or agency or among professionals and enables the system, agency, or professionals to work effectively in cross cultural situations. Other descriptions of culturally competent practice and research have come from scholars in public health, gerontology, and nursing. The descriptions by these scholars and clinicians offer tangible guidance on how one can achieve the capacity for cultural competence. In these descriptions, skills, attitudes, and values are spelled out in three areas: cultural knowledge, cultural sensitivity, and collaboration with the community to be served. Cultural knowledge means actively learning about the community—its ethnicities, languages, origins, immigration or migration history, acculturation level, economy, sources of income, family and social structures and roles, value systems and beliefs, education levels and literacy, geography, and ecologic environment. Cultural sensitivity includes an ethic or a moral imperative to value and respect the beliefs, norms, and practices of the people to be served. This begins with an awareness of our own cultural beliefs and practices and moves toward being non-judgmental and respectful in dealing with people whose culture is different than our own. Culturally sensitive professionals possess capacities for warmth, empathy, and genuineness. Consequently, they are flexible and skillful in responding and adapting to different cultural contexts and circumstances. Collaboration with the community to be served can mean the people who live within a geographic boundary, the people served by a certain agency or program, or a group of people who have shared identity and experiences, similar beliefs, values, and norms.

Aims/Objectives

The aim if the present week is to expose the students into the various aspects with constitute cultural competence and recognize the need for cultural competence in all aspects of our services, health related included.

Learning Outcomes by the end of this session students will be able to:

- Critically discuss the elements comprising cultural competence in various settings.
- Describe cultural diversity and Self-Assessment.
- Define Cultural Safety
- Apply these concepts at the level of an organization

Key Words

Cultural knowledge	Cultural sensitivity	Communication	Cultural Safety	Cultural Self-Assessment	Cultural Diversity

Annotated Bibliography

Basic Sources/Material

1. Alizadeh, S., & Chavan, M. (2015). Cultural competence dimensions and outcomes: a systematic review of the literature. Health & Social Care in the Community, 24: e117–e130. (pdf provided)
2. Bennett J.M. (2012). The developing art of intercultural facilitation In Building Cultural Competence: Innovative Activities and Models, Berardo, K., & Deardorff, D.K. (Eds), pp: 13-22. (pdf provided)
3. Garneau, A. B., & Pepin, J. (2014). Cultural Competence. Journal of Transcultural Nursing, 26: 9–15. (pdf provided)
4. Garran, A. M., & Werkmeister Rozas, L. (2013). Cultural Competence Revisited. Journal of Ethnic And Cultural Diversity in Social Work, 22: 97–111. (pdf provided)
5. Kirmayer, L. J. (2012). Rethinking cultural competence. Transcultural Psychiatry, 49: 149–164. (pdf provided)
6. Seeleman, C., Suurmond, J., & Stronks, K. (2009). Cultural competence: a conceptual framework for teaching and learning. Medical Education, 43:229–237. (pdf provided)

Supplementary Sources/Material

1. Cross T., Bazron, B., Dennis, K., & Isaacs, M. (1989). Towards a culturally competent system of care, volume I. Washington, DC: Georgetown University Child Development Center, CASSP Technical Assistance Center.
2. Ang, S., & Van Dyne, L. (Eds.) (2008). Handbook on cultural intelligence: Theory, measurement and applications. Armonk, NY: M.E. Sharpe.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 1.1

Cultural competence is a set of congruent behaviors, attitudes and policies that come together in a system, agency or among professionals and enable that system, agency or those professions to function effectively. What elements contribute to a system's, institution's, or agency's ability to become more culturally competent?

Post you answer in the discussion forum. The word limit is 300 words excluding refences.

Exercise 1.2

Respond to one of your classmates posts in a meaningful and scholarly manner.

Recommended number of work hours for the student 15 hours

TITLE:

Cultural Quotient (CQ)

(2nd Week)

Summary

Cultural Quotient is an instrument which aims at improving our understanding of the different cultures effectively. All educators need to take this test and all students involved need to see their score. The instrument provides a starting point to measure whether any cultural intervention in a curriculum improves cultural understanding.

Introductory Remarks

Cultural Quotient (CQ) helps us understand and communicate with people from other cultures effectively. It is one's ability to recognize cultural differences through knowledge and mindfulness and behave appropriately when facing people from other cultures. The cultural intelligence approach goes beyond this emphasis on knowledge because it also emphasizes the importance of developing an overall repertoire of understanding, motivation, and skills that enables one to move in and out of lots of different cultural contexts. Due to the globalization of our world, people of different cultures today live together in communities across our many nations. This presents more opportunities to interact with diverse individuals in many facets and thus, today's workforce would need to know the customs and worldviews of other cultures. Therefore, people with a higher CQ can better interact with people from other cultures easily and more effectively.

The most important reason for understanding CQ is that CQ is a critical capability that enhances effectiveness in culturally diverse situations. For example, CQ (1) enhances sensitivity to cultural differences; (2) reduces use of overly simplistic stereotypes; (3) enhances adjustment and relationships in multi-cultural contexts; and (4) improves decision-making and work performance in multi-cultural contexts.

Aims/Objectives

The aim of this week's reading is to explore the Cultural Quotient, to analyze its strengths and its categorization ability.

Learning Outcomes by the end of this session students will be able to:

- Describe the elements comprising CQ.
- Apply avoidance of stereotypes.
- Describe performance in multicultural contexts

Key Words

Cultural Intelligence Scale	Metacognitive CQ	Cognitive CQ	Motivational CQ	Behavioral CQ	Cultural Literacy

Annotated Bibliography

- **Basic Sources/Material**

1. Ang, S., Van Dyne, L., & Koh, C. (2006). Personality Correlates of the Four-Factor Model of Cultural Intelligence. Group & Organization Management, 31:100–123. (pdf provided)
2. Ang, S., Van Dyne, L., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural Intelligence: Its Measurement and Effects on Cultural Judgment and Decision Making, Cultural Adaptation and Task Performance. Management and Organization Review, 3: 335–371. (pdf provided)
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4. Gozzoli, C., & Gazzaroli, D. (2018). The Cultural Intelligence Scale (CQS): A Contribution to the Italian Validation. Frontiers in Psychology, 9:1183. (pdf provided)
5. Ng, R. (2013). Cultural Intelligence. The Encyclopedia of Cross-Cultural Psychology, 310–313. (pdf provided)

- **Supplementary Sources/Material**

1. Earley , P. C. , & Ang , S. (2003). Cultural intelligence. Stanford, CA: Stanford University Press.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 2.1

All healthcare professionals need to be able to understand their cultural ability using the 4 dimensions of the CQ. In a post of 400 words (references excluded), personally reflect on the various dimensions of CQ and apply this reflection to avoidance of stereotypes. Post your work in the discussion forum.

Exercise 2.2

Provide constructive critique on your classmates' post applying the theory of social transformation as described by Bourdieu

Recommended number of work hours for the student 15 hours

TITLE:

Intercultural Competence Model

(3rd Week)

Summary

In order to be culturally competent, traits, attributes and capabilities need to be present at the same time. These can only be developed if intercultural sensitivity has taken place.

Introductory Remarks

There is consensus that intercultural competence refers to an individual's ability to function effectively across cultures. Intercultural competence unfortunately does not just happen for most; instead, it must be intentionally addressed. A framework is a necessary tool to address the issue. The framework should not be perceived as a snapshot, but rather as a life-long process. Critical reflection becomes a powerful tool in the process of intercultural competence development. Intercultural competence does not happen in a vacuum, so it is important to be aware of the context in which this competence is occurring, and in particular, in the interaction itself. Attitudes are at the foundation of intercultural competence development. One way to move individuals toward these attitudes is by challenging their assumptions. The Observe, State, Explore, Evaluate (OSEE) tool can be an option. What we see and experience with intercultural competence are the external outcomes: behavior and communication that is effective and appropriate. It is important to stress the implications of effective and appropriate behavior and communication: Effectiveness can be determined by the individual, while the appropriateness can only be determined by the other person, with appropriateness being directly related to cultural sensitivity.

Intercultural traits. Just as personality traits refer to enduring personal characteristics that determine a stable pattern of cross-situational behaviors, intercultural traits refer to enduring personal characteristics that determine an individual's typical behaviors in intercultural situations. Examples of intercultural traits include open-mindedness, dissimilarity openness, tolerance of ambiguity, cognitive complexity, flexibility, quest for adventure and emotional resilience.

Intercultural attitudes and intercultural worldviews. By contrast, intercultural attitudes and intercultural worldviews focus on how individuals perceive other cultures or information from outside their own cultural worlds. One may have positive or negative attitudes toward other cultures or intercultural interactions. Individuals who are highly culturally competent have positive attitudes toward intercultural contact.

Intercultural capabilities. Intercultural capabilities emphasize what a person can do to be effective in intercultural interactions. Examples include showing knowledge of other cultures/countries, metacognitive, motivational, and behavioral cultural intelligence, linguistic skills, social flexibility, adaptability to communication and cultural tuning in terms of holistic concern, collaboration, and learning.

Intercultural sensitivity can be defined as a forerunner in attitude to successful intercultural relations and a predictor of cultural adequacy. Intercultural sensitivity can be defined as the quality that affects intercultural communications where the people are willing to grasp, accept, and appreciate cultural differences or to try to define cultural sensitivity as being able to accommodate worldviews that are focused on ethnicity and deal with differences in culture.

Aims/Objectives

The aim of this week's reading is to introduce the basic notions of an Intercultural Competence Framework

Learning Outcomes By the end of this session students will be able to

- Compare and Contrast Cross-Cultural Competence and Cultural Intelligence.
- Compare and Contrast Intercultural Capabilities, Intercultural Traits and Attitudes
- Apply this knowledge to critically self-reflect regarding their own intercultural competence

Key Words

Cross-Cultural Competence	Cultural Intelligence	Intercultural Capabilities	Intercultural Traits	Intercultural Attitudes	Emotional Resilience

Annotated Bibliography

- **Basic Sources/Material**

1. Deardorff D.K. (2012). Introduce Core Concepts, In Building Cultural Competence: Innovative Activities and Models, Berardo, K., & Deardorff, D.K. (Eds), pp: 45-80. (pdf provided)
2. Leung, K., Ang, S., & Tan, M. L. (2014). Intercultural Competence. Annual Review of Organizational Psychology and Organizational Behavior, 1: 489–519. (pdf provided)
3. Segura-Robles, A., & Parra-González, M. E. (2019). Analysis of Teachers' Intercultural Sensitivity Levels in Multicultural Contexts. Sustainability, 11: 3137. (pdf provided)

- **Supplementary Sources/Material**

1. Knowles, M. S. (1975). Self-directed learning: A guide for learners and teachers. Englewood Cliffs, NJ: Prentice Hall.
2. Deardorff, D. K. (Ed.). (2009). The SAGE handbook of intercultural competence. Thousand Oaks, CA: Sage.

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 3.1

In the reference Deardorff D.K. (2012). Introduce Core Concepts, In Building Cultural Competence: Innovative Activities and Models, Berardo, K., & Deardorff, D.K. (Eds), pp: 50, complete the questionnaire and calculate the number. Do not post this number in the discussion forum.

Exercise 3.2

Post your reflection, based on activity 3.2 (300 words excluding references), on situations requiring intercultural competence and consider what helped make you more appropriate and effective in your interactions.

Exercise 3.3

This is an optional assignment, which can be emailed directly to the instructor, who will provide feedback and you will not be graded. In the reference Deardorff D.K. (2012). Introduce Core Concepts, In Building Cultural Competence: Innovative Activities and Models, Berardo, K., & Deardorff, D.K. (Eds), pp: 60 and Complete OSEE tool on the following situation: You treat a patient who does not make eye contact with you.

Recommended number of work hours for the student 14 hours

TITLE:

Intercultural communication

(4th Week)

Summary

Intercultural communication in healthcare and in Medical Education requires effective intercultural awareness, intercultural sensitivity and intercultural effectiveness. Appropriate intercultural communication remains central in the current holistic and patient-centered model of care in the globalization era.

Introductory Remarks

The gradual increase in cultural diversification that currently takes place – as it also has been in the past, and the fact that people from different groups must live together has given birth to the notion of "intercultural communication". Intercultural communication is the process of interaction between patients and healthcare professionals from different cultural backgrounds that is based on an understanding of their respective cultures. Intercultural communication is the basis of a competent intercultural care. Intercultural communication competence needs to be improved so that cultural differences of interacted individuals from different cultures can be recognized, respected, handled with toleration, and effective communication in diverse cultural settings may be established. Improving intercultural communication competence follows certain stages. Intercultural awareness is acquired in the first stage, intercultural sensitivity in the second and intercultural effectiveness in the third. Healthcare professionals should be sensitive towards cultural differences and take such differences into account in their practices to ensure that patients receive a holistic and high-quality care. Free movement of people across countries in our globalizing world makes the culturally competent approach necessary for meeting the requirements of individuals who need health care. With intercultural communication competence, the quality-of-care steps up, patient safety is ensured, an effective communication is established between the patient and healthcare professionals, work stress of caregivers decreases, and their knowledge and skills improve, while satisfaction perceived by recipients of care increases. Literature shows that doctor-patient communication and patients' perceptions of quality of care are influenced by the patient's cultural views and language proficiency. Patients whose ethnic origins and cultural backgrounds are different from their doctor's, evaluate the received care less positively than patients with the same background, mainly because of communication problems resulting in lower mutual understanding and less satisfaction.

Aims/Objectives

The aim of the present module is to introduce the elements of intercultural communication and to ascertain that students are aware of the processes required to achieve effective communication.

Learning Outcomes By the end of this session students will be able to

- Enhance understanding of effective intercultural communication.
- Discuss the importance of cultural knowledge when caring for patients.
- Apply intercultural communication skills as core concepts core concepts that underpin cultural care.

Key Words

Intercultural Awareness	Intercultural Sensitivity	Intercultural Effectiveness	Holistic	Patient-Centered	Satisfaction

Annotated Bibliography

- **Basic Sources/Material**

1. Deardorff D.K. (2012). Understand Differences, In Building Cultural Competence: Innovative Activities and Models, Berardo, K., & Deardorff, D.K. (Eds), pp: 81-117. (pdf provided)
2. Michalski, K., Farhan, N., Motschall, E., Vach, W., & Boeker, M. (2017). Dealing with foreign cultural paradigms: A systematic review on intercultural challenges of international medical graduates. PLOS ONE, 12(7), e0181330. (pdf provided)
3. Paternotte, E., van Dulmen, S., Bank, L., Seeleman, C., Scherpbier, A., & Scheele, F. (2017). Intercultural communication through the eyes of patients: experiences and preferences. International Journal of Medical Education, 8: 170–175. (pdf provided)
4. Rubtsova, A. (2019). Socio-linguistic innovations in education: productive implementation of intercultural communication. IOP Conference Series: Materials Science and Engineering, 497, 012059. (pdf provided)
5. Tuohy, D. (2019). Effective intercultural communication in nursing. Nursing Standard, 34: 45–50. (pdf provided)

- **Supplementary Sources/Material**

Assessment 1
This is a graded assignment (30% of the total grade of Assignments)
Transcultural nursing is based on the ‘theory of cultural care diversity and universality’, which contends that care and culture are interrelated within nursing. Despite the fact that the concept of transculturality has evolved from nursing, all healthcare providers are supposed to be able to provide culturally competent communication. In an essay of 3000 words (excluding references, tables and figures) describe any experience you had

either as a healthcare provider with a foreigner, or as a patient in a foreign country. What elements of communication would you improve to improve satisfaction either as a healthcare professional or a patient?

Recommended number of work hours for the student 20 hours

TITLE:
Ethnic and racial discrimination

(5th Week)

Summary

A significant element of cultural competence in the lack of discrimination because of race or ethnicity. Recent studies highlight the fact that stereotypes do not have to be consciously endorsed to produce discrimination; people often respond automatically-frequently without awareness- to others' race or ethnicity. This lack of cultural competence can result in biases, medical errors and poor quality of care.

Introductory Remarks

Discrimination is, by definition, a lack of cultural competence. Despite of all the efforts that have been made with aspects of cultural competence in various medical educational curricula, racial and ethnic discrepancies still exist in healthcare settings. These discrepancies lead to a significant increase in mortality, low satisfaction, inequalities in the receipt of care, etc. Latinos, and American Indians report and have more health problems than do Whites. Minorities also suffer much higher mortality rates than do Whites for many conditions. The mortality rate is 50% higher for Blacks than for Whites for strokes, prostate cancer, and cervical cancer. Moreover, the gap in mortality rates between Blacks and Whites for several illnesses (heart disease, female breast cancer, and diabetes) has significantly widened in recent years. Recent theoretical developments concerning the complex and subtle nature of racial and ethnic bias offer insights into current disparities in health care. Psychologists have traditionally focused on processes common to bias toward various groups, but emerging trends emphasize important distinctions. In particular, the content of stereotypes differs systematically across groups, and consequently people's emotional prejudices and behavioral responses vary across ethnic groups. Moreover, prejudice and stereotypes do not have to be consciously endorsed to produce discrimination; people often respond automatically-frequently without awareness- to others' race or ethnicity, activating stereotypical beliefs, emotional prejudices, and discriminatory tendencies.

Aims/Objectives

To understand the importance of discrimination because of race or ethnic background, which is still evident in the provision of healthcare. A second aim of the present module is to ascertain that healthcare professionals refrain from eliciting stereotypes in the provision of care.

Learning Outcomes

- To discuss the context and dimensions of racial and ethnic discrimination
- To apply the knowledge of the current discrepancies in the provision of healthcare to Medical Education, so as to improve future behaviors.

Key Words

Lack of Cultural Competence	Low quality care	Increased Mortality	Active Discrimination	Passive Discrimination

Annotated Bibliography

- **Basic Sources/Material**

1. Dovidio, J. F., & Fiske, S. T. (2012). Under the Radar: How Unexamined Biases in Decision-Making Processes in Clinical Interactions Can Contribute to Health Care Disparities. American Journal of Public Health, 102: 945–952. (pdf provided)
2. Nunez-Smith, M., Pilgrim, N., Wynia, M., Desai, M. M., Jones, B. A., Bright, C., … Bradley, E. H. (2009). Race/Ethnicity and Workplace Discrimination: Results of a National Survey of Physicians. Journal of General Internal Medicine, 24: 1198–1204. (pdf provided)
3. Shavers, V. L., Fagan, P., Jones, D., Klein, W. M. P., Boyington, J., Moten, C., & Rorie, E. (2012). The State of Research on Racial/Ethnic Discrimination in The Receipt of Health Care. American Journal of Public Health, 102: 953–966. (pdf provided)
4. Shavers, V. L., Klein, W. M. P., & Fagan, P. (2012). Research on Race/Ethnicity and Health Care Discrimination: Where We Are and Where We Need to Go. American Journal of Public Health, 102: 930–932. (pdf provided)
5. Sorkin, D. H., Ngo-Metzger, Q., & De Alba, I. (2010). Racial/Ethnic Discrimination in Health Care: Impact on Perceived Quality of Care. Journal of General Internal Medicine, 25: 390–396. (pdf provided)
6. Stepanikova, I., & Oates, G. R. (2016). Dimensions of Racial Identity and Perceived Discrimination in Health Care. Ethnicity & Disease, 26: 501. (pdf provided)

- **Supplementary Sources/Material**
  None

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 5.1.

In your post of approximately 400 words excluding references please indicate which factors can contribute to ethnic discrepancies in health care provision. Please provide a personal experience with an immigrant and reflect on how you treated this patient in any healthcare setting.

Exercise 5.2

Respond meaningfully and in a scholarly manner in One of your classmates' posts.

Recommended number of work hours for the student 17 hours

TITLE:

Social and Cultural Discrimination

(6th Week)

Summary

Social discrimination remains a significant contributor to the persistent negative health outcomes experienced by minority populations. Social discrimination is defined as the differentiating treatment of an individual based on their actual or perceived characteristics (e.g., age, gender, income status, or medical condition).

Introductory Remarks

Although there have been widespread improvements in the delivery of health care over the last decade, social discrimination remains a significant contributor to the persistent negative health outcomes experienced by minority populations. Social discrimination is defined as the differentiating treatment of an individual based on their actual or perceived characteristics (e.g., age, gender, income status, or medical condition). In the healthcare setting, this manifests in the opinions, beliefs, behaviors, and attitudes of clinicians, significantly impacting certain disadvantaged populations. For example, healthcare provider bias as a form of social discrimination can be as understated as withholding a full range of treatment options from certain patients based on their conscious or unconscious provider beliefs that these patients are less likely to accept or adhere to certain therapies. Health-compromising outcomes associated with social discrimination include heightened physical stress responses, poor compliance with medical treatment, patient disengagement, and healthcare avoidance behaviors, which all contribute to the higher morbidity and mortality rates found among minority populations compared to non-Hispanic Whites. social discrimination is a prominent health risk factor associated with a variety of objective clinical disease outcomes, including cardiovascular disease, hypertension, low birth weight, incident asthma, incident breast cancer, and all-cause mortality. Understanding the causal mechanisms underlying inequities in health care is imperative to achieving equitable health care, and the utility of this study may inform and change practices that impede access to care due to perceived discrimination. It is notable that previous healthcare discrimination studies and measures have often focused on instances of general discriminatory experiences without refinement of context, and, in the cases where healthcare discrimination has been explored, lifetime and singular instances of interpersonal discrimination have almost exclusively been the focus. Consequently, efforts to eliminate healthcare inequities are hindered by the lack of a full understanding of patients' perceptions of discriminatory behaviors. Specifically, understanding how, when, and where patients perceive they are being treated unfairly within medical settings, whether these instances occur at the intrapersonal, interpersonal or systemic levels, and the impact of each level of discrimination on health care is essential to identifying targets for interventions that ensure equitable access to health care for all individuals.

Aims/Objectives
The aim of the week's readings is to further investigate the discrimination in the provision of healthcare in relation to social and cultural characteristics.

Learning Outcomes

At the end of this week, the students will be able to:

- Discuss Social discrimination in healthcare
- Compensate the perceived discrepancies to equal provision of healthcare

Key Words

Social Discrimination	Health Care	Minority Health	Chronic Conditions	Delivery of Healthcare	Disparities

Annotated Bibliography

- **Basic Sources/Material**

1. Arrey, A. E., Bilsen, J., Lacor, P., & Deschepper, R. (2016). Perceptions of Stigma and discrimination in Health Care settings towards Sub-Saharan African Migrant Women living with HIV/AIDS in Belgium: a qualitative study. Journal of Biosocial Science, 49: 578–596. (pdf provided)
2. Ayhan, C. H. B., Bilgin, H., Uluman, O. T., Sukut, O., Yilmaz, S., & Buzlu, S. (2019). A Systematic Review of the Discrimination Against Sexual and Gender Minority in Health Care Settings. International Journal of Health Services, 002073141988509. (pdf provided)
3. Kydd, A., & Fleming, A. (2015). Ageism and age discrimination in health care: Fact or fiction? A narrative review of the literature. Maturitas, 81: 432–438. (pdf provided)
4. Nguyen, T. T., Vable, A. M., Glymour, M. M., & Nuru-Jeter, A. (2017). Trends for Reported Discrimination in Health Care in a National Sample of Older Adults with Chronic Conditions. Journal of General Internal Medicine, 33: 291–297. (pdf provided)
5. Patel, P. (2017). Forced sterilization of women as discrimination. Public Health Reviews, 38: 15. (pdf provided)
6. Quinn, K., Dickson-Gomez, J., Zarwell, M., Pearson, B., & Lewis, M. (2018). "A Gay Man and a Doctor are Just like, a Recipe for Destruction": How Racism and Homonegativity in Healthcare Settings Influence PrEP Uptake Among Young Black MSM. AIDS and Behavior. doi:10.1007/s10461-018-2375-z. (pdf provided)
7. Rodriguez, A., Agardh, A., & Asamoah, B. O. (2017). Self-Reported Discrimination in Health-Care Settings Based on Recognizability as Transgender: A Cross-Sectional Study Among Transgender U.S. Citizens. Archives of Sexual Behavior, 47: 973–985. (pdf provided)

- **Supplementary Sources/Material**

  None

Weekly Self-Assessment & Interactive Exercises/Activities
Assignment. This will be a graded assignment counting for 25% of your total assignment grade. From your personal experiences in your country's healthcare setting, are there discrepancies in healthcare provision, based on ethnic social and cultural factors? How can you compensate for these discrepancies at the level of your Organization?
.

Recommended number of work hours for the student 20 hours

TITLE:

Ethnocentrism

(7th Week)

Summary.
Ethnocentrism is the belief that one's own way of life or culture is superior to others. "Ethnocentrism is the view that 'our' ways of doing things are ordinary and better and that other approaches are in some way inferior. Ethnocentrism can result in alienation of other cultures in the healthcare settings and lead to disparities and misdiagnoses.

Introductory Remarks

In continuation of previous weeks elements on discrimination, we move to Ethnocentrism, which constitutes a separate element of cultural competence. Ethnocentrism is the belief that one's own way of life or culture is superior to others. "Ethnocentrism is the view that 'our' ways of doing things are ordinary and better and that other approaches are in some way inferior. One's own group or society seems normal, while another might seem peculiar. The implicit notion here is that what is normal for us is preferable in general and what is unfamiliar is less good. Ethnocentrism is problematic for many reasons. First, just because something is normal and familiar does not make it any better. Second, ethnocentrism prevents people from respecting one another. Many Westerners view illness as a chance event or as a result of lifestyle choices, but it is important to realize that this way of thinking is not universal. A view commonly held abroad is that disease results from fate, punishment of sin, sorcery, or other supernatural cause. To quote Wagner at al (1994I in their article "Folklore of Blindness."

> *"The folktales of India, Europe, Africa, and North America all tell of people being blinded for such transgressions as perjury, theft, rape, incest, adultery, abduction, and murder. In some cases, the sin being punished was committed by a distant relative… This belief is evident even today. For example, a highly educated woman of Italian descent stated her firm belief that her young son's visual impairment was caused by the sins of her robber-baron forebears. Occasionally, newly blind clients report the belief that visual impairment is a test by the powers that be that they must pass."*

It is easy to see how patients will fail to seek medical treatment if they believe that the cause of their disease is supernatural. Thus, it is helpful to understand the cultural beliefs that surround disease and medicine, as this will facilitate communication and understanding with local patients.

On the opposite side, the ethnocentrism of health care providers has been reported to contribute to patient alienation, inadequate treatment, and misdiagnosis. Some investigators have proposed that ethnocentrism impairs one's capacity to provide culturally appropriate care.

Aims/Objectives.

The aim of this week's readings in for the students to explore the concept of Ethnocentrism as another independent, but closely associated factor of cultural competence.

Learning Outcomes By the end of this session students will learn how to

- Discuss the association of Ethnocentrism with the value of human life.
- Apply the knowledge of Ethnocentrism to construct the concept of acculturation.

Key Words

Alienation	Disparity	Discrepancy	Misdiagnosis	Error	Stereotype

Annotated Bibliography

- **Basic Sources/Material**

1. Anderson, L. M., Scrimshaw, S. C., Fullilove, M. T., Fielding, J. E., & Normand, J. (2003). Culturally competent healthcare systems. American Journal of Preventive Medicine, 24: 68–79. (pdf provided)
2. Capell, J., Dean, E., & Veenstra, G. (2008). The Relationship Between Cultural Competence and Ethnocentrism of Health Care Professionals. Journal of Transcultural Nursing, 19: 121–125. (pdf provided)
3. Maxwell, A., & Shields, T. (2014). The Fate of Obamacare: Racial Resentment, Ethnocentrism and Attitudes about Healthcare Reform. Race and Social Problems, 6: 293–304. (pdf provided)
4. Nameni, A. (2020). Research into Ethnocentrism and Intercultural Willingness to Communicate of Iraqi and Iranian Medical Students in Iran. Journal of Intercultural Communication Research: 1–25. (pdf provided)
5. Pratto, F., & Glasford, D. E. (2008). Ethnocentrism and the value of a human life. Journal of Personality and Social Psychology, 95: 1411–1428. (pdf provided)
6. Ribeiro, A. A., Arantes, C. I. S., Gualda, D. M. R., & Rossi, L. A. (2017). Historical and cultural aspects of the provision of care at an indigenous healthcare service facility. Ciência & Saúde Coletiva, 22: 2003–2012. (pdf provided)

- **Supplementary Sources/Material**

  None

Weekly Self-Assessment & Interactive Exercises/Activities

Exercise 7.1

We are already familiar with the concept of Ethnocentrism and the fact that its lack can lead to lack of cultural competence in any healthcare setting. What are your beliefs on acculturation? In a post of 300 words excluding references describe what acculturation is and how it can be applied in your own setting and upload it in the relative discussion forum thread.

Exercise 7.2

Discuss in a scholarly manner one of your classmate's posts.

Recommended number of work hours for the student 12 hours

TITLE:

Stereotyping

(8th Week)

Summary

Stereotyping is very common error in healthcare provision and in healthcare delivery, resulting from implicit bias. The phenomenon has been examined in Education and in Medical Education, professional societies still struggle with sex stereotyping in various professions.

Introductory Remarks

Stereotype threat is the unpleasant psychological experience of confronting negative stereotypes about race, ethnicity, gender, sexual orientation, or social status. Stereotype threat theory and research provide a useful lens for understanding and reducing the negative health consequences of interracial interactions for African Americans and members of similarly stigmatized minority groups. Interaction quality affects how well patients understand information presented during visits, the amount of pertinent information they later recall, their satisfaction with their treatment, and their adherence to the recommended treatment regimen. When interactions between care providers and their patients are stressful, unpleasant, or disrespectful, patient health often suffers. Research demonstrates the existence of unconscious or unintentional bias on the part of health care providers toward cultural minorities and show its contribution to racial disparities in health care outcomes. Interactions between patients and health care providers may induce stereotype threat, a phenomenon shown by extensive psychological research to generate negative effects in interpersonal contexts, including the classroom and the workplace. Stereotype threat appears to impair performance by inducing physiological stress and by prompting attempts at both behavioral and emotional regulation—all of which, independently or in concert, have the effect of consuming cognitive resources needed for intellectual functioning. Stereotype threat may influence what patients share with their providers. Studies show that worries about confirming stereotypes significantly influence how individuals present themselves. Moreover, because stereotype threat engenders mistrust, minority patients may hear, understand, and recall information and feedback, yet discount it because it is seen as biased or threatening.

Stereotypes do not only exist in racial, sexual or gender status of healthcare provision, but they are also evident in port-graduate and even undergraduate training. Stereotyping is one of the elements which inhibit or completely halts cultural competency and as a result they need to be addressed and eliminated as possible early in all Healthcare providers training.

Aims/Objectives
The aim of this week's readings is to familiarize students with their own intrinsic biases and the stereotypes they may have form their cultures. Stereotyping is a major inhibitor for the development of cultural competence.

Learning Outcomes By the end of this session student will learn how to

- Discuss how stereotyping can inhibit culturally competent delivery of healthcare.
- Apply the knowledge to address avoidance of stereotyping in all levels of Healthcare Education.

Key Words

Implicit Bias	Treatment Choices	Healthcare Provider-patient interaction	Errors	Stigma	Self-Stereotyping

Annotated Bibliography

- **Basic Sources/Material**

1. Carpenter, J. (1995). Doctors and Nurses: Stereotypes and Stereotype Change in Interprofessional Education. Journal of Interprofessional Care, 9: 151–161. (pdf provided)
2. Greenberg, C. C., & Greenberg, J. A. (2020). Gender Bias and Stereotypes in Surgical Training. JAMA Surgery. doi:10.1001/jamasurg.2020.1561. (pdf provided)
3. Harendza, S., & Pyra, M. (2017). Just fun or a prejudice? – physician stereotypes in common jokes and their attribution to medical specialties by undergraduate medical students. BMC Medical Education, 17: 128. (pdf provided)
4. Ibaraki, A. Y., Hall, G. C. N., & Sabin, J. A. (2014). Asian American cancer disparities: The potential effects of model minority health stereotypes. Asian American Journal of Psychology, 5(1), 75–81. (pdf provided)
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7. Puddifoot, K. (2019). Stereotyping Patients. Journal of Social Philosophy, 50: 69–90. (pdf provided)
8. Sabin, J.A., P. Rivara F.P. & Greenwald, A.G. (2008). Physician Implicit Attitudes and Stereotypes about Race and Quality of Medical Care, Medical Care, 46: 678-685. (pdf provided)

- **Supplementary Sources/Material**
  None

Weekly Group Assignment This counts for 20% of your total assignment grade.
Team Assignment. Reflect as a team and list possible stereotypes regarding patients. Critically reflect on your own intrinsic biases resulting in stereotypes and as a Team find ways to amend them. Word limit is 2000 words excluding references.

Recommended number of work hours for the student 20 hours

TITLE:

Cultural Diversity in Health Care

(9th Week)

Summary

Cultural Diversity in Health Care and recognition of the need for diversity is imperative in the both the patients but also for the creation of teams who may consist of members of different background. Diversity means appreciating the differences between people and treating people's values, beliefs, cultures and lifestyles with respect. In a health and social care environment, it's important that equality and diversity are at the heart of what you do.

Introductory Remarks

The need for cultural competence is increasingly recognized by health-care providers and health-related organizations globally. The social ideology of a melting pot has been replaced by recognizing that people deserve respect within their cultural framework and as individuals. The literature on health and health-care disparities across ethnic, social, and economic groups continues to demonstrate compelling evidence for health-care providers and health-care organizations to be attentive to cultural diversity and inclusion as well as cultural competency. Major goals that impact on health disparities, with culture being one force to help eliminate them, are to (a) attain high-quality, longer lives free of preventable disease, disability, injury, and premature death; (b) achieve health equity, eliminate disparities, and improve the health of all groups; (c) create social and physical environments that promote good health for all; and (d) promote quality of life, healthy development, and healthy behaviors across all life stages. Health-care providers who understand their own cultures and their patients' cultural values, beliefs, and practices are in a better position to interact with their patients and provide culturally acceptable care that increases opportunities for health promotion and wellness; illness, disease, and injury prevention; and health maintenance and restoration. To this end, health-care providers need both cultural general and specific cultural knowledge. The more one knows about a cultural group, the more targeted will be the assessment and interventions. Without specific knowledge of cultural groups for whom they provide care, health-care providers might not know what questions to ask to provide culturally competent care. However, any generalization made from aggregate data about the behaviors of a cultural group or individual is almost certain to be an oversimplification; within all cultures are subcultures, ethnic groups, and individuals who do not adhere to all the values of their dominant culture and vary according to variant cultural characteristics as identified later in this chapter. Subcultures, ethnic groups, and ethnocultural populations are groups of people who have experiences different from those of the dominant culture with which they identify.

Aims/Objectives

The aim of this week's readings is to acquaint students with the concept of cultural diversity in the provision of healthcare. By understanding the need of cultural diversity in healthcare, future medical educators can design effective culturally competent curricula.

Learning Outcomes By the end of this session student will learn how to

- Discuss how cultural diversity provision results in improved outcomes and in improved health promotion.
- Discuss promotion of quality of life through cultural diversity

Key Words

Culture	Race	Cultural Awareness	Cultural Sensitivity	Cultural Competence

Annotated Bibliography

- **Basic Sources/Material**

1. Campinha-Bacote, J., (January 31, 2003). "Many Faces: Addressing Diversity in Health Care". Online Journal of Issues in Nursing, 8: Manuscript 2. Available: www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume82003/No1Jan2003/AddressingDiversityinHealthCare.aspx
2. Gambino, K. M., Frawley, S., & Lu, W.-H. (2019). Working Together. Nursing Education Perspectives, 1. doi:10.1097/01.nep.0000000000000488. (pdf provided)
3. Gomez, L. E., & Bernet, P. (2019). Diversity improves performance and outcomes. Journal of the National Medical Association. doi:10.1016/j.jnma.2019.01.006. (pdf provided)
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5. Spector, R. E. (2002). Cultural Diversity in Health and Illness. Journal of Transcultural Nursing, 13: 197–199. (pdf provided)
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- **Supplementary Sources/Material**

  None

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 9.1
Relating to healthcare, diversity education is a term synonymous with labels such as “cultural competence”; “equality, diversity, and inclusion”; and “unconscious bias.” The assortment of vocabulary for these types of educational teaching reveals the lack of consensus concerning the “correct” terminology. Several theoretical frameworks have been developed toward broader conceptualizations of culture and the introduction of the term “diversity.”. In a post of 500 words excluding references describe these frameworks and post it in the discussion forum.

Recommended number of work hours for the student 12 hours

TITLE:

Doctor-Patient Communication associated with culture

(10th Week)

Summary

Talk is a key ingredient in effective medical care. The talk that occurs in medical visits encompasses the manifest content of doctors' diagnoses and patients' questions as well as the deeper structure of patients' fears, physicians' unspoken, but unreasoningly communicated, assumptions; and the dynamic flow of nonverbal expressions-frowns, grimaces, smiles, and head nods. These aspects should be taken into consideration when we address the issue of a physician-patient interaction.

Introductory Remarks

As individualized and emotional as doctor-patient communication can be, it always takes place in a larger society, in which institutional norms, economic realities, and sociopolitical forces impinge powerfully and subtly on physicians and patients. These social forces lead to five different levels of meaning that are played out in doctor-patient communication. The first level is ideological or taken-for-granted beliefs that are prevalent within society. These include assigning status, marginalization, and privilege. The second level is sociopolitical, which focuses on grouping people into broad social categories and relying on these stereotypes when communicating. The third is the institutional/professional level, the domain of health care corporations and professional medical organizations. This level focuses on how elite status and privileged economic positions are interwoven within the nexus of the health system. The fourth, the ethnocultural/familial level, considers how the values and beliefs of different cultures can result in conflicts regarding health care. The final level, interpersonal, focuses on what individual patients and doctors bring to the health care relationship. Beneficent communication between doctor and patient depends on the development of congruence between the patient's need to relate the story of his or her illness and the physician's need to listen, diagnose the problem, and prescribe appropriate treatment options. An important factor in the negotiation of congruence between doctor and minority patient is language. Communication can be hampered if doctor and patient use different terminology to express problems or come from different linguistic cultures. Two key language issues are relevant to the study of interracial aspects of physician-patient interaction. One is the nature of interaction during the primary care interview and the other, a long-standing sense of mistrust that often enters into interracial communication in health care settings. Another concern that may have interracial dimensions is a sense of mistrust and uncertainty exhibited by Black patients as they receive and act on medical information. This can also influence the trajectory of doctor-patient communication.

Aims/Objectives.
This week's readings will guide the student through the elements necessary for adequate culturally competent patient-doctor communication.

Learning Outcomes at the end of this session students will learn how to

- Effectively analyze the components of a physician-patient communication
- Explore the boundaries of cultural competence in patient communication
- Apply their assumptions into analyzing patient outcomes, based on physician-patient communication

Key Words

Cultural Humility	Doctor-patient communication	Ideological	Sociopolitical	Ethnocultural	Patient Adherence

Annotated Bibliography

- **Basic Sources/Material**

1. Ahmed, R., & Bates, B. R. (2017). Patients' fear of physicians and perceptions of physicians' cultural competence in healthcare. Journal of Communication in Healthcare, 10: 55–60. (pdf provided)
2. Baugh, A.D., Vanderbilt, A.A. & Reginald F. Baug, R.F. (2020). Communication training is inadequate: the role of deception, non-verbal communication, and cultural proficiency. Medical Education Online, 25:1, 1820228. (pdf provided)
3. Gidron Y. (2019) Doctor-Patient Communication and Increasing Patient Adherence. In: Behavioral Medicine. Springer, Cham, pp:41-57. (pdf provided)
4. Lazcano-Ponce, E., Angeles-Llerenas, A., Rodríguez-Valentín, R., Salvador-Carulla, L., Domínguez-Esponda, R., Astudillo-García, C. I., … Katz, G. (2020). Communication patterns in the doctor–patient relationship: evaluating determinants associated with low paternalism in Mexico. BMC Medical Ethics, 21(1). doi:10.1186/s12910-020-00566-3. (pdf provided)
5. Magaña, D. (2019). Cultural competence and metaphor in mental healthcare interactions: a linguistic perspective. Patient Education and Counseling. doi:10.1016/j.pec.2019.06.010. (pdf provided)
6. Stubbe, D. E. (2020). Practicing Cultural Competence and Cultural Humility in the Care of Diverse Patients. FOCUS, 18: 49–51. (pdf provided)

- **Supplementary Sources/Material**
  None

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 10.1
In the following publication Aston (2003) proposes that race and ethnicity affect communication patterns which result in differences in health outcomes. To what extent do you believe that minority patient-physician communication influence key health events? Post you answer of 400 words in the discussion forum.
Ashton, C. M., Haidet, P., Paterniti, D. A., Collins, T. C., Gordon, H. S., O'Malley, K., et al. (2003). Racial and ethnic disparities in the use of health services: Bias, preferences, or poor communication? Journal of General Internal Medicine, 18:146-152.

Recommended number of work hours for the student 16 hours

TITLE:

Working with Interpreters

(11th Week)

Summary

Working with interpreters is an important aspect of culturally competent communication, especially when language barriers become extremely significant. In order to provide effective patient care, you need to effectively communicate with your patient. Despite the fact that in the past, the Healthcare sector relied on family members to act as interpreters, several studies have shown that use of non-certified medical interpreters can result in miscommunication and lead to serious adverse outcomes.

Introductory Remarks

Language barriers can cause serious issues with any healthcare professional and his/her patients. The most important response to the language gap in patient care has been the introduction of medical interpreters, bilingual individuals whose clinical role is to facilitate communication between patients and health care workers. As interpreters become more prevalent in clinic work, earlier practices of enlisting family members or bilingual hospital workers to provide translation, once the norm, are now seen as unethical and clinically unsound. For helping patients with limited native language ability, having medical interpreters on call is crucial. But interpreting unfolds between active participants in a communicative moment, drawing on skills different from those used for static translation. And medical interpreting has a specific set of concerns: what if someone's health—or even life—is at immediate risk? As with any aspect of the medical field, the last thing anyone wants is a measure of uncertainty. For these reasons, certified medical interpreters are always preferable to an untrained person who happens to speak the needed language. They are familiar not only with terminology, but also how to handle everything from doctor–patient confidentiality to family interactions. Even healthcare professionals who do possess language skills often cannot simplify concepts for laypeople across language boundaries as effectively. And beyond conveying information and putting patients in a stressful situation at ease, there carry legal and ethical implications. Recent studies have found that interpreters actively and systematically intervene in provider–patient interactions to achieve effective, ethical, and culturally sensitive care. As a member of a team, the medical interpreter cannot be perceived as a tool or an instrument liaising the provider of care with the patient. All elements of effective teamwork are necessary for effective communication of the healthcare provider to the interpreter. Trust that an accurate interpretation has occurred is necessary between any healthcare provider and a medical interpreter. Since 2009, the USA National Board of Certification for Medical Interpreters has helped thousands of interpreters further their careers through its excellent credentialing program, by which professional medical interpreters demonstrate they have met nationally set standards to ensure patient safety and compliance with federal guidelines and requirements.

Aims/Objectives.

The aim if this week's readings is for students to explore working with professional medical interpreters. To this end, the unit explores the professional interpreter roles in the provision of culturally competent care.

Learning Outcomes By the end of this session, students will learn how to

- Discuss the necessities of using a professional medical interpreter
- Apply the role of the professional medical interpreter as a culture breaker, a patient advocate and a clarifier
- Apply teamwork, when collaborating with professional medical interpreters

Key Words

Professional Interpreters	Culturally competent care	Neutrality	Completeness	Accuracy	Culture brokers

Annotated Bibliography

- **Basic Sources/Material**

1. Brandl, E. J., Schreiter, S., & Schouler-Ocak, M. (2019). Are Trained Medical Interpreters Worth the Cost? A Review of the Current Literature on Cost and Cost-Effectiveness. Journal of Immigrant and Minority Health. Doi:10.1007/s10903-019-00915-4. (pdf provided)
2. Dysart-Gale, D. (2005). Communication Models, Professionalization, and the Work of Medical Interpreters. Health Communication, 17: 91–103. (pdf provided)
3. Himmelstein, J., Wright, W. S., & Wiederman, M. W. (2018). U.S. medical school curricula on working with medical interpreters and/or patients with limited English proficiency. Advances in Medical Education and Practice, 9: 729–733. (pdf provided)
4. Hsieh, E., & Kramer, E. M. (2012). Medical interpreters as tools: Dangers and challenges in the utilitarian approach to interpreters' roles and functions. Patient Education and Counseling, 89: 158–162. (pdf provided)
5. Jacobs, B., Ryan, A. M., Henrichs, K. S., & Weiss, B. D. (2018). Medical Interpreters in Outpatient Practice. The Annals of Family Medicine, 16: 70–76. (pdf provided)
6. Juckett, G.& Unger, K. (2014). Appropriate Use of Medical Interpreters. American Family Physician, 90: 476-480. (pdf provided)

7. Tonkin, E. (2017). The Importance of Medical Interpreters. American Journal of Psychiatry Residents' Journal, 12: 13. (pdf provided)

- **Supplementary Sources/Material**
  None

Weekly Self-Assessment & Interactive Exercises/Activities
Exercise 11.1
Watch the following video from Stanford School of Medicine
https://www.youtube.com/watch?v=Uhzcl2JDi48&ab_channel=CharlesLiao
What errors might occur when working with a professional medical interpreter?

Recommended number of work hours for the student 15 hours

TITLE:
Creating a cultural competence curriculum

(12th Week)

Summary

Providing high quality care to socially and culturally diverse populations is challenging. Many organizations concerned with quality and equity in health care have called for physician training in cross cultural communication as one strategy for ensuring patient-centered health care for all, but little is known about how to effectively and sustainably integrate such teaching into the medical school curriculum.

Introductory Remarks

Providing high quality care to socially and culturally diverse populations is challenging. Difficulties may arise from the diversity of patients' health beliefs, values, preferences behaviors and healthcare needs and from the challenges of communicating effectively across language and cultural differences. Communication barriers complicate the task of identifying and responding effectively to patients' needs and expectations.

Many organizations concerned with quality and equity in health care have called for physician training in cross cultural communication as one strategy for ensuring patient-centered health care for all (General Medical Council and Postgraduate Medical Education and Training Board, 2005; National Quality Forum (NFQ), 2009; The Joint Commission, 2010). Both the EU and the WHO Regional Office for Europe have called for cultural competence training of health professionals as part of a broad strategy to tackle health inequities and ensure quality health care for increasingly diverse populations (Council of Europe, 2011; World Health Organisation, 2010).

This has resulted in a number of organizations developing principles and standards for cultural competence training of physicians, less is known about how to effectively and sustainably integrate such teaching into the medical school curriculum. Difficulties include a lack of clarity on what should be taught and when, a lack of institutional leadership and support for cultural competence teaching, a lack of faculty development for cultural competence teaching and a lack of evaluation of the effectiveness of such teaching.

These difficulties are common to medical curriculum change in general, and recommendations of the International Association for Medical Education (AMEE) for integrating professionalism into the curriculum seem equally relevant for cultural competence: agree on learning objectives, structure the curriculum to integrate learning across all years, develop a curriculum framework that takes into consideration different learning models, ensure adequate role modeling, and assess trainee learning.

Faculty development, in particular, has been touted as an instrument of curricular and institutional change and may be an effective strategy for effectively and sustainably integrating cultural competence into the medical and reaching those medical teachers

who still see cultural competence as a “politically correct irrelevance that is simply common sense”.

Aims/Objectives

The students will apply all the elements of cultural competence, or lack of, in the creation of a culturally competent curriculum.

Learning Outcomes By the end of this session, students will learn how to

- Synthesize the elements of cultural competence in medical curricula

Key Words

Cultural Competence	Undergraduate	Post graduate	Curriculum	Integration	Learning outcomes

Annotated Bibliography

- **Basic Sources/Material**

1. Constantinou, C. S., Papageorgiou, A., Samoutis, G., & McCrorie, P. (2018). Acquire, apply, and activate knowledge: A pyramid model for teaching and integrating cultural competence in medical curricula. Patient Education and Counseling, 101: 1147–1151. (pdf provided)
2. Enciso, J. M. (2020). Teaching culturally competent healthcare in neonatal-perinatal medicine. Seminars in Perinatology, 44: 151239. (pdf provided)
3. O’Sullivan, H., van Mook, W., Fewtrell, R., & Wass, V. (2012). Integrating professionalism into the curriculum. Medical Teacher, 34: 155–157. (pdf provided)
4. Rapp, D. E. (2006). Integrating cultural competency into the undergraduate medical curriculum. Medical Education, 40: 704–710. (pdf provided)
5. Seeleman, C., Suurmond, J., & Stronks, K. (2009). Cultural competence: a conceptual framework for teaching and learning. Medical Education, 43: 229–237. (pdf provided)
6. Sorensen, J., Norredam, M., Dogra, N., Essink-Bot, M.L., Suurmond, J. & Allan Krasnik, A. (2017). Enhancing cultural competence in medical education. International Journal of Medical Education, 8:28-30. (pdf provided)
7. Worden, M. K., & Ait-Daoud Tiouririne, N. (2018). Cultural competence and curricular design: learning the hard way. Perspectives on Medical Education, 7: 8-11. (pdf provided)

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities

Assignment. This will be a graded assignment carrying 25% of your total assignment grade. You will work in Teams and the submission will be a team assignment In 2500 words (excluding references) develop the rationale of a culturally competent curriculum, discuss ways of integrating the curriculum into an existing medical curriculum. Be sure to address the following points:

- agree on learning objectives,
- structure the curriculum to integrate learning across all years,
- develop a curriculum framework that takes into consideration different learning models,
- ensure adequate role modeling, and
- assess trainee learning.

Recommended number of work hours for the student 20 hours

TITLE:

Tool for Assessing Cultural Competence Training (TACCT)

(13th Week)

Summary.

Introductory Remarks.

Aims/Objectives

Learning Outcomes By the end of this session students will learn how to

Key Words

Annotated Bibliography

- **Basic Sources/Material**

3.

- **Supplementary Sources/Material**

Weekly Self-Assessment & Interactive Exercises/Activities
Assignment This is a graded assignment and accounts for 50% of your total assignment grade

Recommended number of work hours for the student 20 hours

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

The Final Exam represents that the student attained all the necessary knowledge and skills of the profession included in the program.

(14th week)

Recommended number of work hours for the student
Approximately 60 hours.

INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

Title:

Definitions of Cultural Competence

(1st Week)

Exercise 1.1

- Consider the following points:
- Valuing diversity
- Having the capacity for cultural self-assessment
- Being conscious of the dynamics inherent when cultures interact
- Having institutionalized culture knowledge
- Having developed adaptations to service delivery reflecting and understanding of cultural diversity

Exercise 1.2

Meaningfully respond to one of your classmates' posts. Remember that Cultural Competence is not personal preferences, but rather, a perception that not all cultures are similar and not all cultures react in the same manner.

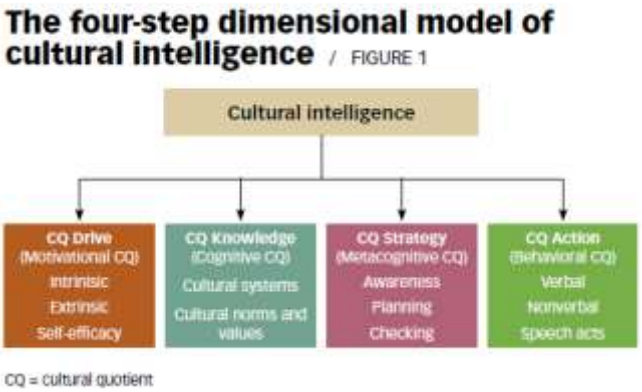
Title:

Cultural Quotient

(2nd Week)

Exercise 2.1

For the four-dimension reflection use this image as a guide



Exercise 2.2

Bourdieu works on education focused on the role that secondary and tertiary education play in reproducing social and cultural classification and stratification.

Bourdieu identifies the problem of stereotypes and for this reason he proposes the concepts of:

Cultural capital—A form of value associated with culturally authorised tastes, consumption patterns, attributes, skills and awards. Within the field of education, for example, an academic degree constitutes cultural capital.

Habitus—A concept that expresses, on the one hand, the way in which individuals 'become themselves'—develop attitudes and dispositions—and, on the other hand, the ways in which those individuals engage in practices.

Title:

Intercultural Competence Model

(3rd Week)

Exercise 3.1
Use the tool to calculate you Intercultural Competence in an arithmetic manner.

Exercise 3.2
This is a critical reflection exercise based on how you scored in the tool above. An important element is to consider in your reflection, not only on what developed your cultural competence, but also how you can continue your development in areas you scored the lowest.

Exercise 3.3
Consider the following points:
• The person is shy.
• The person is trying to hide something.
• The person does not want to be called on or singled out.
• The person is blind.
• The person considers it impolite to make direct eye contact.

Title:

Intercultural communication

(4th Week)

Assignment 1: This will be a graded assignment, which accounts for 30% of your total assignment grade.

Title:

Ethnic and racial discrimination

(5th Week)

Exercise 5.1

In your answer, you might want to address the following issues:

1. Cooperation (high low)
2. Warmth (high low)
3. Type of discrimination

Please look into this table by Dovidio, J. F., & Fiske, S. T. (2012). Under the Radar: How Unexamined Biases in Decision-Making Processes in Clinical Interactions Can Contribute to Health Care Disparities. American Journal of Public Health, 102: 945–952.

TABLE 1—Stereotype Content Model Quadrants Illustrating Implicit Biases and Discrimination Arising From Group Stereotypes

Stereotype Contents	Low Competence/Status	High Competence/Status	Type of Discrimination
High warmth/cooperation	Irish immigrants, Italian immigrants, older people, disabled people, effeminate gay men, housewives (pity, sympathy)	Middle-class Whites, Christians, heterosexuals, Canadian immigrants, third-generation immigrants, closeted gay men (pride, admiration)	Active help/protect
Low warmth/cooperation	Poor Blacks, undocumented immigrants, Latinos, poor Whites, homeless people, drug addicts, rough-trade gay men (disgust, contempt)	Black professionals, Asian immigrants, Jewish Americans, outsider entrepreneurs, lesbians, professional women, gay male professionals (envy, jealousy)	Active harm/attack
Type of discrimination	Passive harm/neglect	Passive help/association	

Note. Row (warmth) and column (competence) headers indicate the stereotype content reported for societal groups listed. Perceived cooperation predicts warmth, and perceived status predicts competence. Placement of groups derived from cluster analyses of surveys of how adults view groups in society. Emotions in parentheses are most commonly reported as directed toward those groups. Behavioral tendencies directed toward each quadrant appear at the end of each row and column, creating mixed behavior in the bottom right and top left quadrants. *Source.* Fiske et al.,[25] Cuddy et al.,[26] Clausell and Fiske,[27] Harris and Fiske,[28] and Russell and Fiske.[29]

Exercise 5.2

In a scholarly manner respond to any of your classmates' posts, provide your own reflections if a personal experience has been described. Would you have dealt with it in a different manner?

Title:

Social and Cultural Discrimination

(6th Week)

Assignment. This will be a graded assignment counting for 25% of your graded assignments.

Title:

Ethnocentrism

(7th Week)

Exercise 7.1

Consider the following: The concept of acculturation is a rather new idea that encompasses cultures intermixing, which results in learning the beliefs and perspectives of the dominant culture while still keeping their personal and original culture alive. Through acculturation, people can still hold onto their original beliefs and cultural practices pertaining to language, values, belief systems, and behavior while adapting to the dominant culture. This concept allows people to come together as a whole and permits the survival of many different cultures. This concept is much more appealing, morally right, and just, rather than essentially losing one's own original culture to learn another. All of these concepts and ideas such as: culture, ethnocentrism, assimilation, and acculturation play a pivotal role in the ethics of healthcare and if not managed properly, can lead to numerous damaging effects throughout society as a whole.

Exercise 7.2:

In your replies, what other approaches would you have taken in your classmates' personal post?

Title:

Stereotyping

(8th Week)

Assignment: Graded Group Assignment, counting for 20% of your total assignment grade.

Title:

Cultural Diversity in Health Care

(9th Week)

Exercise 9.1

Consider the following:

Cross-cultural efficacy model asserts that neither the caregiver's nor the patient's culture offers a preferred view. The framework describes clinical encounters as a "tri-cultural" interaction, where the culture of the patient, healthcare provider, and the organization coexists.

The cultural sensibility model focuses on encouraging healthcare professionals to understand their own sense of self and how this affects their perceptions of others.

The intercultural maturity model refers to an individual's ability to internalize, interpret, and make sense of an experience. It is also developmental in accounting for the growth of increased capacity in one's ability to construct meaning in a more adaptive way over time. This model recognizes that achieving competence in cross-cultural settings is not an endpoint but a developmental process that adopts a continual cyclic practice.

Title:

Doctor-Patient Communication associated with culture

(10th Week)

Exercise 10.1

Few studies link these variables. There is suggestive evidence from research that examines differences in medical outcomes when patients and doctor are from different racial or ethnic groups (race discordant) as opposed to when they are from the same racial or ethnic group (race concordant). Studies show that racial concordance between patient and doctor promotes satisfaction with care; conversely, when African American patients have White doctors, they are less satisfied with their medical care, rate their visits as less participatory, and are less likely to use needed medical services than when they are treated by Black physicians. It is presumed that perceived and actual dissimilarities in cultural values reduce the development of congruence between doctor and patient in explanations of illness and recommendations for treatment. Cultural dissimilarity may impair communication effectiveness, which in turn reduces patient compliance.

Title:

Working with Interpreters

(11th Week)

Exercise 11.1

The common errors are listed here by Juckett, G.& Unger, K. (2014). Appropriate Use of Medical Interpreters. American Family Physician, 90: 476-480.

Interpreters

Error	*Correction*
Addressing the interpreter directly	Speak directly to the patient
Allowing the interpreter to dominate the conversation or answer for the patient	Insist on sentence-by-sentence interpretation and direct communication with the patient
Discussing multiple complex issues	Limit the key points to three or fewer
Permitting side conversations	Insist on sentence-by-sentence interpretation
Relying on one's own inadequate language skills	Use a qualified professional interpreter whenever possible
Seating the interpreter far away from the patient	Seat the interpreter next to or slightly behind the patient
Using an interpreter to witness a consent form	Use a noninvolved party to witness the consent
Using family or friends as interpreters	Use a qualified professional interpreter whenever possible
Using third-person statements (e.g., "tell her," "he said")	Use first-person statements ("I" statements)

Title:

Creating a cultural competence curriculum

(12th Week)

Assignment. This will be a Team graded assignment, counting for 25% of your total assignment grade.

Title:

Tool for Assessing Cultural Competence Training (TACCT)

(13th Week)

Assignment. This will be a graded assignment.

Title:

FINAL EXAM

(14th Week)

The final exam is a composed by the following: multiple choice questionnaire (MCQ), two essay questions along with two digital case scenarios.

Please note: The following questions, essay tasks, and case scenarios are provided here are not to be used or reproduced for any purpose.

The MCQ will have 15 questions with provided four answers per each, where all sessions will be covered. All correct answers must to be marked. The minimum to pass is 70%. Incorrect answers will not have addition of negative points. Time to complete the MCQ is 15 minutes.

THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

European University Cyprus

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE664-Management in Medical Education and Higher Education Settings

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE664-Management in Medical Education and Higher Education Settings**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☐	Elective ☒	
Number of Teleconferences	Total: Upto 6	Face to Face: -	Teleconferences: Upto 6
Number of Assignments	2 (25%)		
Assessment	Assignments	Written Examination	
	50 %	50 %	
Number of ECTS Credits	10		

Study Guide drafted by:	Pieris Chouridis
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

Management in Medical Education and Higher Education Settings

CONTENTS

1ST TELECONFERENCE/GROUP CONSULTATION MEETING:

INTRODUCTION

Programme Presentation

- **Short description & objectives**

The Distance Learning program is specifically designed to be very flexible, giving the opportunity to students to choose two or more areas of concentration rather than concentrate on only one. It provides students with theoretical as well as practical medical management skills in accounting, finance, human resource management strategy, management and marketing, as well as offering insight into the medical industry and their broader health care and regulatory environments. The program also offers students the chance to develop their own critical evaluation and critical thinking as well as areas of study that meet their specific career goals.

GENERAL OBJECTIVES:

The aim of the course is to train students in the development and implementation of development/transformation plans and programmes in educational institutions and the system of higher education and in medical education. The course offers an in-depth study of the concepts and approaches of modern general and strategic management applied to higher education institutions and approaches to the implementation of key processes of university management and management in a Medical School.

SPECIFIC OBJECTIVES:

Upon successful completion of this course students should be able to:

- Evaluate the main management functions and their application in the Higher Education and Medical Education settings
- Discuss the various management theories and evaluate how those Higher Education and Medical Education settings
- Discuss the concept of performance management in Higher Education and Medical Education with relevant measurements
- Discuss managerial and organizational values at an international level
- Discuss the various layers of management in the medical education setting and the healthcare setting
- Discuss ethical considerations in organizations
- Identify and evaluate possible improvements in Higher Education and Medical Education settings
- Discuss the main approaches to competitive advantage and their application based on environmental dynamics

Presentation of the Course through the Study Guide

- **Short description and context areas of study.**

The course is designed to provide a general understanding of the science, theory and principles of management and how they relate to the practice of managing. Above all, to address the needs of individuals learning how to manage effectively in the contemporary competitive environment. The basic managerial functions of planning, organizing, leading, and controlling are examined in depth.

The context of this module is consist on three main streamlines as follows:

Nature of Management, Importance, Environment and the Challenge:

- The Management Functions; Management At Different Levels; Managerial Skills; Basic Schools of Management Thought; the Systems Approach to Management; Contingency Approach; the External and Internal Environment; Importance of Culture; Organizational and Social
- Responsibility and Business Ethics in Management.

Strategy:

- Developing companies vision; Business model; source of competitive advantages; Five Forces and generic strategies (positioning); High-velocity environments and agility (dynamic capabilities); Leadership; Organizational Ambidexterity; Types of strategic change;

Process improvement and quality management:

- Process and operation management; Value stream map; Quality management concepts, tools and techniques; Project management;
- Recent developments and contemporary issues pertaining to the subject-matter of the course.

Recommended student work time

Approximately 5 hours (including the study of the Guide)

TITLE: Introduction: The Management Process

(1st Week)

Summary

In this introductory chapter, students will explore the concepts of management, managerial skills, managerial functions, the roles managers play and organizations in today's dynamic medical and medical education environment.

Introductory Remarks

A career in medical management has its rewards, benefits, and privileges. It is at the same time a great challenge in today's competitive and demanding world. Getting things done through the efforts of other people, as a great pioneer said is the essence of management.

Students are introduced to the four principal functions of management – planning, organizing, leading and controlling. The three types of roles (interpersonal, informational, and decisional) from the famous study of Henry Mintzberg are then explained through definitions and examples. The whole picture is completed by explaining the three skills (technical, human, conceptual) required by a manager.

Finally, we should understand that if the above are performed in the best way possible then organizational goals are achieved effectively and efficiently, a goal of every organization out there. Effectiveness is about 'doing the right thing' and efficiency refers to 'doing things right'. Students should be able to differentiate between the two by the end of the first chapter.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- Importance of managers in an organization
- Roles and skills of managers
- Functions of management
- Importance of skills and functions at various levels
- The difference between effectiveness and efficiency in management

Learning Outcomes

After reading this chapter, the students should be able to:

- Explain why managers are important to organizations.
- Describe the functions, roles, and skills of managers.

- Describe the factors that are reshaping and redefining the manager's job.
- Explain the value of studying management.

Key Words

Managerial Functions	Managerial Roles	Managerial Skills	Effectiveness and Efficiency

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 1.1(non-graded)

Is your course instructor a manager? Discuss in terms of managerial functions, managerial roles, and skills.

Recommended number of work hours for the student: 8 hours

TITLE: History of Management Thought

(2nd Week)

Summary

In this chapter, students will take a trip back in time to see how the field of study called management has evolved. What they are going to find out is that today's medical managers still use many elements of the historical approaches to management.

Introductory Remarks

The purpose of this chapter is to help us see how the modern field of management has evolved since the start of the Industrial Revolution. Although the historical aspects of this development may be interesting, it is what we can learn from our management predecessors that is of main focus here. Understanding the past and adapting in a business world that is changing faster than ever before is of vital importance for a manager and organizations.

The chapter gives a short overview of the three historical perspectives or viewpoints on management – classical, behavioral, and quantitative. It then describes the three principal contemporary viewpoints – systems, contingency, and quality-management.

Students have to finally understand that although the practice of management can be an art, it is also a science where it can be approached deliberately, rationally and systematically.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- The evolution of management.
- The importance of visiting the past.
- The various viewpoints or schools of thought in management.
- The latest concepts in management.

Learning Outcomes

After reading this chapter, the students should be able to:

- Describe some early management examples.
- Explain the various theories in the classical approach.
- Discuss the development and uses of the behavioral approach.
- Describe the quantitative approach.
- Explain the various theories in the contemporary approach.

Key Words

Industrial Revolution	Classical Viewpoint	Behavioral Viewpoint	Quantitative Viewpoint	Contingency, Systems, Qualitative

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 2.1(non-graded)

a. Explain why studying management history is important.
b. What is a bureaucracy? Do bureaucracies still exist today?

Recommended number of work hours for the student: 8 hours

TITLE: External Environment and Organizational Culture

(3rd Week)

Summary

Managers must realize that organizational culture and organizational environment have important implications for the way an organization is managed. Both organizational culture and external forces that can shape an organization are explored in this chapter in order to gain a better understanding of the complexities presented by internal and external environments.

Introductory Remarks

This chapter sets the stage for understanding the new world in which managers must operate. Managers do not make decisions in a vacuum. The chapter begins by describing the community of stakeholders that managers have to deal with – first the internal stakeholders (of employees, owners and directors), then the external stakeholders in two kinds of environments (task and general).

In dealing with employees the concept of organizational culture has to be clearly understood by students. Identifying and even changing cultural values, beliefs and norms is of major importance in today's changing world.

Finally, students should realize that certain strategies such as buffering, smoothing, rationing and forecasting can be used in dealing with changes and complexities of the external environment. Favourability influence through different methods is also an alternative.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- The various forces and elements in the external environment a manager faces.
- The characteristics and importance of organizational culture.
- The way to change organizational culture.
- The strategies for organizational adaptation.

Learning Outcomes

After reading this chapter, the students should be able to:

- Describe the constraints and challenges facing managers in today's external environment.
- Discuss the characteristics and importance of organizational culture.
- Describe current issues in organizational culture.

Key Words

Task Environment	General Environment	Organizational Culture	Adaptation Strategies

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 3.1 (graded - 10%) (500 words limit, single-spaced)

Consider a medical related organisaton that you frequently interact (for example, a hospital, Diagnostic center,) and review three aspects of the general and three aspects of the task external environment discussed in class. Create a list of these elements or factors in the external environment and provide examples and explanations of the way they could affect the management of the organisation you have selected. Finally, observe and identify the business climate/culture in the two cases, compare, contrast and discuss.

Recommended number of work hours for the student: 8 hours

TITLE: Ethical Behavior and Social Responsibility in Management

(4th Week)

Summary

In this chapter, we try to understand the importance it for organizations and managers to be socially responsible and ethical. Students will look at what it means to be socially responsible and ethical and what role managers play in both, from the medical and non medical prospective.

Introductory Remarks

Clearly understanding the meanings and implications of social responsibility and ethics is of utmost importance in management and organizations today.

The social context in which corporate and managerial decisions and actions occur is dynamic and complex. Thus, to understand the meanings of social responsibility and business ethics is to recognize that they change with time and circumstance. For this to be accomplished a thorough examination of society's expectations for corporate and managerial behaviour changing of medical ethics is needed.

The chapter also provides guidelines by which managers can determine socially and ethically responsible behaviour. Managers must be cognizant of the necessity to create organizational procedures, policies and mechanisms that encourage disclosure of unethical behaviour. These procedures and mechanisms set by organizations are discussed in detail.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- The significance of ethical management
- Principles to follow before any decision
- Mechanisms for following and monitoring ethical behaviour
- The concept of social responsibility and social responsiveness

Learning Outcomes

After reading this chapter, the students should be able to:

- Discuss what it means to be socially responsible and what factors influence that decision.
- Discuss the factors that lead to ethical and unethical behavior.
- Describe management's role in encouraging ethical behavior.
- Discuss current social responsibility and ethics issues.

Key Words

Ethics and Management	Social Responsibility	Mechanisms for Ethical Behavior	Social Responsibility Issues	Stakeholders

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 4.1 (non-graded)

What are some problems that could be associated with employee whistle-blowing for (a) the whistle-blower and (b) the organization? Is it that easy for someone to blow the whistle and should an organization take it so light?

Recommended number of work hours for the student: 8 hours

TITLE: The Decision-Making Process

(5th Week)

Summary

In this chapter, students will explore the importance of decision-making to managers and learn how to make effective decisions.

Introductory Remarks

The focus of this chapter is the decision-making aspects of planning. Planning in many respects, is decision making and before proceeding to the details of planning where objectives and strategies will be determined it is required for students to understand the process of decision making as well as other important issues of the topic at hand.

Managers at all levels make decisions and whether they like it or not they are evaluated and rewarded on the basis of the importance, numbers, and results of their decisions. The quality of the decisions that managers reach is the yardstick of their effectiveness and of their value to the organization.

Therefore, a detailed explanation of the steps followed in decision-making, the types of decisions they will be making and the conditions and biases they will be facing is the focus of this chapter. Finally, techniques utilized by managers are explored.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

The systematic approach to decision-making

The conditions and biases faced in decision-making

The various techniques suggested by experts in decision-making

Learning Outcomes

After reading this chapter, the student should be able to:

- Describe the eight steps in the decision-making process.
- Explain the four ways managers make decisions.
- Classify decisions and decision-making conditions.
- Describe how biases affect decision making.
- Identify effective decision-making techniques.

Key Words

Decision Making	Types of Decisions	Decision Making Biases	Decision Making Techniques

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**

None

Self-Assessment Exercises/Activities

Exercise 5.1 (Non-graded)

a. Explain the two types of problems and decisions. Contrast the three decision-making conditions (certainty, risk, uncertainty).

b. What is big data? How can organizations effectively use big data to improve decision making? Should managers be cautious in using big data?

Recommended number of work hours for the student (8 hours)

TITLE: Fundamentals of Planning and Strategic Management

(6th Week)

Summary

In this chapter, students begin the study of the first of the management functions: planning. Planning is important because it establishes what an organization is doing. They will look at how managers set goals as well as how they establish plans. Also, they will explore an important part of the planning that managers do: developing organizational strategies. Every organization has strategies for doing what it is in business to do. In addition, managers must manage those strategies effectively.

Introductory Remarks

Planning is essential if organizations are to achieve effective levels of performance. The ability or inability of a firm to adapt to change is often linked directly to its planning system. Planning is about the future and focuses on what is to be accomplished and how. Therefore, it is important for students to understand its significance, nature and details.

In this chapter, the process of planning (vision, mission, goals and plans) is explained. Once the process is well grasped, the students are exposed to the concept of strategic management. The necessary phases with their steps are explained and then a look at the various strategies used at different levels of a company (corporate, business and functional) are seen and analysed.

Identifying the organisation's competitive advantage in a dynamic and very competitive environment cannot be achieved without some serious analysis and planning.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

The importance of planning and strategic management
The process of planning
Establishment of a mission statement and the necessary ingredients
Effective goal setting and the various types
The phases in strategic planning
Corporate, business and functional strategies

Learning Outcomes

After reading this chapter, the student should be able to:

- Define the nature and purposes of planning.
- Classify the types of goals organizations might have and the plans they use.

- Compare and contrast approaches to goal-setting and planning.
- Discuss contemporary issues in planning.
- Define strategic management and explain why it's important.
- Explain what managers do during the six steps of the strategic management process.
- Describe the three types of corporate strategies.
- Describe competitive advantage and the strategies organizations use to get it.

Key Words

Planning	Mission	Goals	Strategies

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**
  NONE

Self-Assessment Exercises/Activities

Exercise 6.1(non-graded)

a. If planning is so crucial, why do some managers choose not to do it? What would you tell these managers?

b. Describe the three major types of corporate strategies and how the TOWS matrix is used to develop and manage those corporate strategies.

Recommended number of work hours for the student: 8 hours

TITLE: Fundamentals of Organizing and Structure

(7th Week)

Summary

Once managers are done with planning then they need to begin to “work the plan.” The first step in doing involves designing an appropriate organizational structure. This chapter covers the decisions involved with designing this structure. It also addresses the issue of structure with an emphasis on the new designs that companies are implementing to deal with an increasingly competitive environment that focuses on efficiency.

Introductory Remarks

The way firms are organized can influence their ability to succeed. Therefore, managers should possess an understanding of key elements of organization and a knowledge of how different approaches to organizing can help companies accomplish their goals.

Strategies cannot be implemented successfully if the wrong tasks are assigned to the wrong employees. As managers, we have to clarify who is supposed to do a particular job or perform a task (responsibility), and who is accountable to whom. We then have to group people into units, departments and divisions. Concepts like unity of command, span of management and decentralization for efficiency in operations are explained.

Finally, we look at some general guidelines managers can use when designing organizations and various alternatives in design. They can range from classical to neoclassical, from mechanistic to organic.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- Key elements, concepts and principles in organizing
- The two main categories of structures
- Traditional vs modern type of structures used by organizations

Learning Outcomes

After reading this chapter, the student should be able to:

- Discuss major concepts and principles in organizing.
- Contrast mechanistic and organic structures.
- Discuss the contingency factors that favor either the mechanistic model or the organic model of organizational design.
- Describe traditional organizational designs.
- Discuss organizing for flexibility in the post-crisis era.

Key Words

Organizational Structure	Responsibility, Authority, Delegation, Accountability	Centralization vs Decentralization	Functional, Divisional, Matrix Structures

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**

None

Self-Assessment Exercises/Activities

Exercise 7.1 (non-graded)

What is a matrix structure? What are the two structures from which it is formed? What are the advantages and disadvantages of this type of structure? How can the major disadvantage of conflict be resolved. Please, discuss.

Recommended number of work hours for the student (8 hours)

TITLE: Human Resources Management

(8th Week)

Summary

The chapter is about finding people to fill the jobs that have been created. That's where human resource management comes in. It is an important task that involves getting the right number of the right people in the right place at the right time. Also, a look at other human resource management functions like training, evaluation, compensation and others are examined.

Introductory Remarks

To meet the challenges of managing, managers must understand the potential of human resources and then secure, retain and develop these resources. Any unit or department involves the accomplishment of objectives through use of the skills and talents of people. An organization can only be as effective as the people who operate it.

Once the vital importance of people in an organization is understood, the functions of HRM with the methods and techniques used for each are then analysed and explained. They include planning with the development of job descriptions and specification, recruitment, selection, evaluation and finally compensation.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- The importance of the most important asset of any organization – people.
- The functions of human resource management (planning, recruitment, selection, training and development, evaluation, compensation and effective relationships).

Learning Outcomes

After reading this chapter, the student should be able to:

- Explain the importance of the human resource management and the human resource management process.
- Discuss the tasks associated with identifying and selecting competent employees.
- Understand how to write effective job descriptions.
- Understand how to become a good interviewer.
- Explain how companies provide employees with skills and knowledge.
- Developing Knowledge Map and strategy.
- Describe strategies for retaining competent, high-performing employees.
- Discuss contemporary issues in managing human resources.

Key Words

Human Resource Management	HR Planning	Recruitment and Selection	Training and Development	Performance Evaluation and Compensation

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 8.1 (non-graded)

Describe the different performance appraisal methods and briefly discuss the external environmental factors that most directly affect the HRM process.
Develop a strategic knowledge gap analysis.

Recommended number of work hours for the student (8 hours)

TITLE: Motivation

(9th Week)

Summary

The following chapter is about motivation in the workplace. Motivating and rewarding employees is one of the most important and challenging activities that managers do. To get employees to put forth maximum work effort, managers need to know how and why they are motivated. Therefore, the chapter discusses the most related motivational theories necessary so that students get a holistic picture of how people are motivated.

Introductory Remarks

To understand why people do things an understanding of human motivation is needed. As managers, we should learn to recognize what factors are important to employees and what they value at work.

The chapter examines how to motivate people to perform well. The need-based theories of Maslow, Herzberg and McClelland are first examined and understood through practical examples and then the process theories of goal-setting, expectancy and equity are explained.

Finally, an attempt is made through careful steps of how to put all the theories together for a better understanding of how to motivate employees at work.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- The nature and simple process of motivation
- Classical theories of motivation
- Cognitive theories of motivation
- The blending of classical and modern for understanding human behavior and motivation

Learning Outcomes

After reading this chapter, the student should be able to:

- Define motivation.
- Compare and contrast early theories of motivation.
- Compare and contrast contemporary theories of motivation.
- Discuss current issues in motivation.

Key Words

Motivation	Needs	Needs Theories	Cognitive, Process Theories

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 9.1 (graded 40%)

A report/assignment on selection and motivation at work

- The assignment should be approximately 5000 words.
- The assignment must be typed in a normal type and font (Arial or Times New Roman, size 12, double space) and presented in an orderly fashion. All references/bibliography should be included at the end of your assignment. Points will be lost for poor presentation.
- This is an individual assignment.
- The assignment must be submitted electronically in the official platform.

  - You are asked to interview two managers about how they select and motivate employees and then prepare a report made up of the following pages and sections.

  1. Cover page
  2. Table of contents
  3. Introduction (you can include here what the report is about, how you proceeded with your investigation, some of the major findings, the managers you have interviewed and their companies)
  4. Findings (report the findings of your interviews in an organized way and without expressing your opinion. You can also report any problems stated by managers.)
  5. Comparison with common/popular selection methods and motivational theories. (Visit textbooks and journals and identify the methods and theories that the managers are using in practice and elaborate. Feel free here, to express your opinion on wrong application by managers or variations to the methods)

6. Suggestions (what would you suggest for improvement after you have visited the methods and theories of experts and compared them with the results you have gathered?)
7. Conclusion
8. Bibliography/Sources

Recommended number of work hours for the student (19 hours)

TITLE: Leadership

(10th Week)

Summary

Leaders in organizations make things happen. Therefore, the chapter examines what makes leaders different as well as the most appropriate style of leadership needed for certain situations.

Introductory Remarks

Organizations require effective leadership to survive and prosper. Under the guidance of capable leaders, the potential of human resources is developed and magnified. Leadership is more complex than most people think and as a skill it should be carefully studied, examined and practiced.

Students should understand that they could learn how to provide capable leadership needed by organizations. A close examination of the characteristics of effective leaders and a good understanding of the different styles of leadership, which can be used pertinent to a situation, might be of great help to students who aspire to become effective leaders.

Influencing and motivating employees and communicating a vision is of utmost importance for someone to become and effective leader/manager.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- The characteristics of effective leaders
- Importance of managers being effective in leadership also
- Early as well as contemporary approaches in leadership

Learning Outcomes

After reading this chapter, the student should be able to:

- Define leader and leadership.
- Compare and contrast early theories of leadership.
- Describe the three major contingency theories of leadership.
- Describe contemporary views of leadership.
- Discuss contemporary issues affecting leadership.

Key Words

Leadership Characteristics	Early Theories of Leadership	Contemporary Theories of Leadership	Effective Leadership Styles

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 10.1 (non-graded)

What does each of the four theories on leadership behavior say about leadership and why is trust between leaders and employees important? How can a leader build trust?

Recommended number of work hours for the student (8 hours)

TITLE: Communication

(11th Week)

Summary

In the following chapter the role, importance and process of communication are examined. Managers are concerned with two types of communication: interpersonal and organizational. Students will look at both in this chapter and the role they play in a manager's ability to be efficient and effective.

Introductory Remarks

Communication is one of the major ingredients of the manager's job. Without communication, nothing would ever be done in organizations. It is what binds an organization together, as both a one-way and a two-way process, and as a means for coordinated action in organizations.

It is important also to understand that communication involves understanding the numerous barriers (different perceptions, language differences, noise, emotionality, inconsistency) of it and knowing how to overcome them. Other than the formal, vertical and horizontal communication flow in organizations, students should be shown also the existence of the informal, grapevine communication network.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- Importance of effective communication
- Nature and process of communication
- Types and challenges of communication
- The way communication flows in organizations
- Modern methods of communication

Learning Outcomes

After reading this chapter, the student should be able to:

- Define the nature of communication.
- Describe methods and challenges of interpersonal communication.
- Explain how communication can flow most effectively in organizations.
- Describe how the Internet and social media affect managerial communication and organizations.
- Summarize communication issues in today's organizations.
- Discuss how to become a better communicator.

Key Words

Communication	Communication Process	Communication Challenges	Communication Flow	Methods in Communication

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

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  Pearson Education, latest edition

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 11.1 (non-graded)

Explain and discuss in detail communication flow, the three common communication networks, and how managers should handle the grapevine. Should they take this informal network seriously?

Recommended number of work hours for the student (8 hours)

TITLE: Fundamentals of Control

(12th Week)

Summary

Managers must monitor whether goals that were established as part of the planning process are being accomplished efficiently and effectively. That's what they do when they control. Appropriate controls can help managers look for specific performance gaps and areas for improvement.

Introductory Remarks

Holding themselves together with the traditional methods of control in a very dynamic global environment is not an easy task for companies anymore. Students have to realize that control systems are designed to eliminate idiosyncratic behaviour and keep employees directed toward achieving the organization's goals.

The basic control process of setting performance standards, measuring performance, comparing performance with standards and taking corrective action is thoroughly explained to students, steps involved in the design of any control system.

The chapter proceeds with an explanation of budgets as a control device and the way to interpret financial ratios and other financial controls as standards against which to evaluate performance.

Finally, students explore the procedures for implementing effective control systems.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- Significance of the control function
- The control process
- The methods and mechanisms used by organizations to measure performance

Learning Outcomes

After reading this chapter, the student should be able to:

- Explain the nature and importance of control.
- Describe the three steps in the control process.
- Explain how organizational and employee performance are measured.
- Know how to be effective at giving feedback.
- Describe tools used to measure organizational performance.
- Discuss contemporary issues in control.

Key Words

Control	Methods of Control	Methods and Mechanisms of Control

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

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  Pearson Education, latest edition

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 12.1 (non-graded)

a. Why is control important to customer interactions?

b. “Every individual employee in an organization plays a role in controlling work activities.” Do you agree with this statement, or do you think control is something that only managers are responsible for? Explain.

Recommended number of work hours for the student (8 hours)

TITLE: International Management

(13th Week)

Summary

The chapter examines international management from a global perspective. After indicating the major differences and changes in global markets it attempts to relate management issues to be faced by an international manager as he or she faces increased global competition.

Introductory Remarks

Students have to understand environmental differences as a company faces global competition and the way they can affect a firm when it decides to do business in a foreign country. In the political and legal environment, foreign countries have numerous laws that apply to foreign investors, and not many of them are favorable. In the cultural environment, language and gestures are two important areas of cultural difference that a firm must learn about and deal with on an on-going basis. In the economic environment, differences include average incomes, tax structures, inflation rates, and even currency exchange rates.

Understanding of major trends seen in the global markets and the role played by WTO and major economic integrations should be indicated. Students should be shown the way most firms enter the international market and the various types of transactions such as exporting, licensing and franchising, management contracts and turnkey operations and foreign investments.

Finally, it has to be realized that intense global competition is expected to intensify and that a firm should have a clear understanding of all the changes that take place globally and learn how to deal with it.

Aims/Objectives

The aims and the objectives of this chapter is to make students to understand and critically evaluate the following concepts:

- The nature of international management
- The global trends and differences in business around the world
- The impact of global changes on managerial decisions

Learning Outcomes

After reading this chapter, the student should be able to:

- Understand how the field of business has evolved into a truly global one.
- Identify some of the major changes in international markets.

- Examine and understand the way cultural, legal/political, economic and other environmental differences and changes can have an impact on managerial decisions.
- Identify some definite problem areas that must be considered before a domestic firm becomes a multinational corporation.

Key Words

International Management	Globalization Trends	International Environmental Differences

Annotated Bibliography

- **Basic Sources/Material**

  Gareth R. Jones and Jennifer M. George :
  CONTEMPORARY MANAGEMENT, McGraw Hill, latest edition.

  Stephen P. Robbins and Mary Coutler: MANAGEMENT,
  Pearson Education, latest edition

- **Supplementary Sources/Material**

NONE

Self-Assessment Exercises/Activities

Exercise 13.1 (non- graded)

Contrast multinational, multidomestic, global, and transnational organizations and commend on the managerial implications of a borderless organization?

Recommended number of work hours for the student (8 hours)

FINAL TELECONFERENCE/GROUP CONSULTATION MEETING

During this final teleconference, students are informed about the format of the final exam (e.g. multiple-choice questions, short or long answers, case studies, etc.) and if the exam will be open-book or not.

TITLE:

FINAL EXAM

(14th week)

Recommended number of work hours for the student

Approximately **60** hours.

INDICATIVE ANSWERS FOR SELF-ASSESSMENT EXERCISES

Title: Introduction: The Management Process

(1st Week)

Exercise 1.1

Course instructors (in contrast to individuals who hold positions such as department head) are not usually classified as managers. In most situations, a course instructor does not fall within the definition of a manager when utilizing managerial functions, mainly because students are clients rather than employees. In some cases, an instructor has little input about course content or how it should be taught. In these instances, the instructor makes few managerial decisions.

In terms of managerial roles, course instructors may be involved in some ways in the interpersonal, informational, and decisional roles. For example, a course instructor could be seen as a liaison (interpersonal role), a monitor and disseminator (both informational roles), and a disturbance handler and negotiator (both decisional roles).

Regarding managerial skills, course instructors certainly need technical skills—knowledge about the latest research and conceptual developments in a particular discipline. They also need significant human skills as they interact with their students. To a limited extent, the instructor utilizes conceptual skills as courses are planned or as departmental curriculums are debated.

Title: History of Management Thought

(2nd Week)

Exercise 2.1

a. While the study of management history reviews the work of experts in the past, from a practical side, it shows the techniques and implementations that companies are using today. For example, the principles learned from Scientific Management are still used today in manufacturing. Assembly line layouts, work processes, and compensation plans in modern organizations are modifications of the foundation laid by men and women like Taylor. The same is true for the work of Weber, Fayol, and more recently Deming. The organizations we work in today are the result of an evolution of management concepts, not something completely new.

b. Max Weber described the bureaucracy a form of organization characterized by division of labor, a clearly defined hierarchy, detailed rules and regulations, and impersonal relationships. While Weber recognized that the “ideal bureaucracy” didn’t exist in reality, it provided a basis for understanding how work could be dome in large groups. Weber’s “ideal type” still describes many contemporary organizations.

Title: External Environment and Organizational Culture

(3rd Week)

Exercise 3.1 (graded)

Title: Ethical Behavior and Social Responsibility in Management

(4th Week)

Exercise 4.1

The whistleblower might find that peers, managers, and other company employees ostracize him or her. For example, the whistleblower may encounter difficulty in accomplishing tasks and/or obtaining needed resources while remaining employed at the organization.

The organization itself may struggle with a tarnished reputation if the whistle-blowing incident becomes public. Other employees may watch to see what happens and how the organization treats whistleblowers. A pattern for future ethical or unethical behavior can be set by the organization's response to a whistleblower.

Title: The Decision-Making Process

(5th Week)

Exercise 5.1

a. Programmed decisions are repetitive decisions that can be handled by a routine approach and are used when the problem being resolved is straightforward, familiar, and easily defined (structured). Nonprogrammed decisions are unique decisions that require a custom-made solution and are used when the problems are new or unusual (unstructured) and for which information is ambiguous or incomplete. Certainty is a situation in which a manager can make accurate decisions because all outcomes are known. Risk is a situation in which a manager can estimate the likelihood of certain outcomes. Uncertainty is a situation in which a manager is not certain about the outcomes and can't even make reasonable probability estimates.

b. Big data refers to the vast amount of quantifiable information that can be analyzed by highly sophisticated data processing. Big data gives decisions makers powerful tools to help them make decisions. However, it's important that managers approach big data with a degree of caution keeping in mind that while big data provides information on correlations between variables it does not explain which correlations are meaningful.

Title: Fundamentals of Planning and Strategic Management

(6th Week)

Exercise 6.1

a. Managers may choose not to devote time to planning because they do not know how to plan or feel that they do not have the necessary time. Others may say that planning is a waste of time that the future is going to happen whether or not they plan. However, these reasons do not discount the importance of planning. Every manager should engage in planning.

b. A growth strategy is when an organization expands the number of markets served or products offered, either through current or new businesses. The types of growth strategies include concentration, vertical integration (backward and forward), horizontal integration, and diversification (related and unrelated). A stability strategy is when an organization makes no significant changes in what it's doing. Both renewal strategies—retrenchment and turnaround—address organizational weaknesses that are leading to performance declines. The TOWS matrix is a way to analyze a company's strategic options by looking at a business's internal and external critical factors.

Title: Fundamentals of Organizing and Structure

(7th Week)

Exercise 7.1

A matrix structure is just what the name implies. It is a matrix of a functional structure and a divisional structure. The x axis consists of the functional departments while the y axis consists of project managers. The matrix is filled in by functional personnel who are assigned to both functional managers and project managers. These groups make up what are called cross functional teams.
The main advantage of the matrix structure is that the communication barriers that exist in a functional organization, often call the functional chimney problem, are eliminated by the cross functional teams. This allows for open communication and decision making at the lowest possible level.
The main disadvantage of the matrix structure is that the team members report to two managers, a functional manager and a project manager, and may get caught in a squeeze if the two managers are in conflict with each other.
The solution to this problem is a strong general manager who can resolve the conflict.

Title: Human Resources Management

(8th Week)

Exercise 8.1

A written essay appraises performance through a written description of an employee's strengths and weaknesses, past performance, and potential. Critical incidents are used to appraise performance by focusing on the critical job behaviors. In this technique, the appraiser writes anecdotes to describe what the employee did that was especially effective or ineffective. The use of graphic rating scales is one of the oldest and most popular performance appraisal methods. This method appraises performance using a rating scale on a set of performance factors. The graphic rating scales list a set of performance factors; the evaluator goes down the list and rates the employee on each factor, using an incremental scale. Using behaviorally anchored rating scales (BARS) is an appraisal approach that appraises performance using a rating scale on examples of actual job behavior. BARS combines major elements from the critical incident and graphic rating scale approaches. The appraiser rates an employee according to items along a scale, but the items are examples of actual behavior on the job rather than general descriptions or traits. Multiperson comparison appraises performance by comparing it with others' performance. Management by objectives (MBO) is another mechanism for appraising performance. It is often used to assess the performance of managers and professional employees. 360 degree feedback appraises performance by using feedback from supervisors, employees, and coworkers.

The external environmental factors that affect HR include economic conditions, unionization, the legal environment, and demographic trends.

Title: Motivation

(9th Week)

Exercise 9.1 (graded)

Title: Leadership

(10th Week)

Exercise 10.1

The University of Iowa Studies explored three styles of leadership: autocratic, democratic, and laissez-faire. Initial results found that a democratic style leader was more effective. However, later studies had mixed results. When group member satisfaction was examined, it was found that a democratic style was more effective than an autocratic one. The Ohio State Studies found that a leader who was high in both initiating structure and

consideration sometimes achieved high group task performance and high group member satisfaction, but not always. The University of Michigan Studies presented two dimensions of leadership: employee orientation and production orientation. Researchers concluded that leaders who were employee-oriented were able to get high group productivity and high group member satisfaction. Finally, the Managerial Grid attempted to categorize various leadership behaviors. Ultimately, the grid offered no answers to the question of what made a manager an effective leader; it only provided a framework for conceptualizing leadership style.

Trust refers to a belief in the integrity, character, and ability of a leader. When an employee trusts his or her leader, he or she is willing to be vulnerable to the leader's actions confident in their belief that the leader will not compromise their rights and interests. Building trust requires the leader to be fair and open, speak their feelings, be truthful, show competence and consistency, and maintain confidences. Research shows that trust between leaders and followers is significantly related to positive job outcomes.

Title: Communication

(11th Week)

Exercise 11.1

Communication in an organization can flow downward, upward, laterally, and diagonally. The three communication networks include the chain, in which communication flows according to the formal chain of command; the wheel, in which communication flows between a clearly identifiable and strong leader and others in a work team; and the all-channel, in which communication flows freely among all members of a work team. Managers should manage the grapevine as an important information network. The negative consequences of rumors can be minimized by communicating openly, fully, and honestly with employees.

Title: Fundamentals of Control

(12th Week)

Exercise 12.1

a. Control is important to customer interactions because employee service productivity and service quality influences customer perceptions of service value. Organizations want long-term and mutually beneficial relationships among their employees and customers.

b. Every individual employee plays a role in controlling the quality of goods and services produced by their company, particularly in organizations where employees have been empowered by management. Even in organizations where employees have not been extensively empowered, employees play a role in

measuring, comparing, and correcting performance. In any case, managers remain responsible for establishing and maintaining standards, approaches, and guidelines for measuring, comparing, and correcting the work of the organization.

Title: International Management

(13th Week)

Exercise 13.1

A multinational corporation (MNC) refers to a broad group of organizations and refers to any type of international company that maintains operations in multiple countries. The types of MNC vary with respect to the degree to which they decentralize decision-making across countries in which they operate. One type of MNC is a multidomestic corporation, which decentralizes management and other decisions to the local country. A global company is a MCN that centralizes its management and other decisions in the home country. This type of company takes a worldview of operations, seeking to maximize efficiency by producing goods that have a global appeal. Finally, the transnational company eliminates artificial geographical barriers and seeks the best possible arrangement without regard to the country to maximize efficiencies and competitive advantage.

In a borderless organization, artificial geographic borders do not separate functions, divisions, or activities. The managerial implications of such an organization are that it is infinitely more flexible in its ability to respond to changing marketplace conditions. However, this type of organization is much more difficult to control.

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European
University Cypru

FORM: 200.1.3

STUDY GUIDE

COURSE: MDE670-Master Thesis

Course Information

Institution	**European University Cyprus**		
Programme of Study	**Medical Education (M.Sc.)**		
Course	**MDE670-Master Thesis**		
Level	Undergraduate ☐	Postgraduate (Master) ☒	
Language of Instruction	English		
Course Type	Compulsory ☐	Elective ☒	
Number of Teleconferences	Total: NA	Face to Face: -	Teleconferences: NA
Number of Assignments	1 (85%)		
Assessment	Written Thesis	Oral Examination	
	85 %	15 %	
Number of ECTS Credits	30		

Study Guide drafted by:	Theodoros Xanthos
Editing and Final Approval of Study Guide by:	Theodoros Lytras Konstantinos Giannakopoulos

1. INTRODUCTION

Program's purpose and objectives:

Healthcare professionals are increasingly required to have formally recognized teaching qualifications. This program is suitable for doctors and other healthcare professionals who are responsible for teaching, assessing and supporting undergraduate students and trainees, either in institutions or in the workplace. The program is designed for busy healthcare professionals, such as GPs, doctors, nurses, healthcare professionals and those with related undergraduate degrees, including pharmacy, and physical therapy.

The MSc Program aims to help students to develop their scholarship and research skills in order to effectively train healthcare professionals of the future. The program offers students an introduction to teaching, learning and assessment for effective teaching both in undergraduate and post-graduate students with the ultimate aim to improve patient safety. The MSc in Medical Education is designed for individuals who are interested in developing a critical knowledge for the effective application of medical education in local and international contexts.

The program fosters advanced skills of comprehension, interpretation, and analysis through courses that include examination of Medical Education Theories and their application into practice. It sensitizes students to the dynamic of infrastructures and learning environments (whether physical or virtual) and concentrates on how new technologies can be used to enhance effective medical education. The program can be offered completely as a taught course, where students successfully succeed in 9 courses (6 compulsory and 3 electives) or 6 compulsory courses and a Thesis

GENERAL OBJECTIVES: The program seeks to:

- broaden opportunities for qualified students for entry into higher level education studies
- to promote professional development and enhance research activity, both for those involved and for the general public
- to cultivate ethically and professionally sound research and practice in Medical education and to contribute to the development of a reflective and analytical attitude towards delivery of medical knowledge with an ultimate goal to improve patient safety
- to cultivate / develop an advanced postgraduate activity that is characterized by intellectual stimulation, is professionally compatible and useful and leads to research activity for the production of new and / or remodeling of existing knowledge, as a basis for decision making and problem solving in issues of medical education
- to broaden research and academic cooperation of all kinds with participants, scholars, educational institutions and academic staff**.**

SPECIFIC OBJECTIVES: More specifically, the program seeks to:

- provide opportunities for MSc students to study in detail topics related to

advanced academic studies and the systematic research in the field of Medical Education

- advance MSc students' familiarity with the theories of the area of their research within Education Sciences, epistemological theories in the field of Medical Education, as well as research methods, aiming to further delve into their area of interest viewing it in a broader perspective
- to facilitate MSc those students, who choose the Thesis option, in conducting individual and independent research and producing an academic dissertation at a highly specialized level within the boundaries of their field
- help MSc students develop skills in understanding and using qualitative and quantitative methods and measurements, and using multivariate statistics to draw conclusions and make decisions based on relevant research data
- help MSc students develop the knowledge and skills necessary to use methods and theories of their area in an independent and critical manner, producing new knowledge in Medical Education
- prepare MSc students for new knowledge production or remodeling of existing knowledge, creating the basis for the development of pedagogical / educational theories through applied research
- enable graduates to get a deeper insight into today's complex medical educational environment and apply the knowledge gained to emerge as career leaders of their choice
- Develop the ability to critique and analyze a broad range of materials and communicate ideas and theories effectively.
- Develop advanced written and verbal skills through the composition of thoroughly researched term papers, surveys based on an analysis of previously collected data
- Acquire the ability to work within a team and develop presentation skills.

Presentation of the Course through the Study Guide

Short description & objectives: Conduct an independent investigation at postgraduate level into an area of Medical Education

- Critically review primary and secondary sources, combine and synthesize material in the field of Medical Education
- Employ research methods appropriate for the selected topic under investigation.
- Apply abilities as researcher and academic, to bring a research project from conception to completion
- Demonstrate advanced expertise in a sub-field of Medical Education
- Produce research work at postgraduate level on a particular Medical Education.

Recommended student work time Approximately 10 hours (including the study of the Guide)

2. THESES COMMITTEES

COMMITTEE OF MASTER THESIS OF THE DEPARTMENT

The Committee of Master Thesis of the Department comprises of the member of the faculty supervising the student and 2 other members of the faculty either from the Department of Medicine, or the School of Medicine or from another School or other University based on the area of expertise and the proposed topic. These Committees will be sanctified by the Department Council and the School Council when faculty members of another department, School, University compose the committee of Master Thesis. The purpose of the Committee is to address issues regarding the review of the "Master Thesis Writing Guide", examine important issues arising from the execution of the Thesis by students, such as violation of academic ethics and morals (e.g. plagiarism) or other issues not foreseen or covered by this version of the Master Thesis Writing Guide, and inform students on current developments.

3. RIGHT TO CONDUCT A MASTER THESIS

Only students who have successfully completed at least 60 ECTS course work with GPA greater than 1.95/4 are entitled to apply for the assignment of a Master Thesis topic.

4. DETERMINATION OF THE THESIS TOPIC - THESIS SUPERVISION - STUDENT GUIDANCE

The supervision of the Thesis is undertaken by the Department's teaching personnel amongst holders of PhD. The responsibility for the allocation of the Theses per Supervisor lies with the Committees of Master Theses of the Department of Medicine. Each member of the teaching personnel undertakes the supervision of a maximum of five (5) Theses of the Program per academic year. The maximum number of Theses allocated per Supervisor is determined by the needs of the Program and of the Department in general and may vary.

APPOINTMENT OF THE SUPERVISOR

The Supervising member of the Thesis is appointed by the Program Coordinator in collaboration with the Chair of the Department of Medicine and the Dean of the School of Medicine within 10 working days from the expiry of the deadline for the submission of applications. The criteria for the selection of the Supervising Professor are his subject area and research interests. Any preferences of the student for a specific supervisor are taken into consideration. Following the announcement of the Supervisors by the Program Coordinator, students must contact their Supervisors to specify and analyse the topic of the Master Thesis they have undertaken and proceed to the preparation and presentation of their research proposal.

CHANGE OF THE SUPERVISOR

Once a Supervisor has been designated, he/she may not change without the prior submission of a justified request to the Program Coordinator. In this case, the deadline for the Thesis completion is extended up to 3 months.

5. SUPERVISION – EXECUTION OF THE MASTER THESIS STUDENT SUPERVISION – GUIDANCE

During the execution of the Thesis, the student has weekly 30-60 minute meetings with his/her Supervisor, as determined between them (either in person or by teleconference), in order to receive feedback on the progress of the Thesis, plan together the next stages of execution and verify his/her progress. They may also communicate through other electronic means or in any other way as determined by the Supervisor. At the initial meeting, the time frames for the progress of the Thesis are set and discussed and the skeleton to be followed by the student for the completion of the Thesis is defined.

Collaboration between the student and the Supervisor is essential and plays a key role in his/her final grade. If more than three weeks elapse without any contact between the student and the Supervisor, the latter reports the incidence to the Program Coordinator and the student is called to justify this lack of contact in writing. If such justification is deemed inadequate, the Supervisor has the right to terminate the supervision, in which case it is considered that the student has failed the course and receives an "**F**" (Fail) grade. Students have the obligation and must submit to their Supervisor parts of their Thesis at regular intervals in accordance with the set time frame. The delivery of the completed Thesis to the Supervisor, before or after the deadline for submission, without previous submission and correction by the Supervisor in parts, will not be accepted and the Thesis will be rejected, resulting in the student's failure.

6. ANNOUNCEMENT – ALLOCATION OF THESIS TOPICS

The topics of the Theses are posted by the Program Coordinator on the online course platform, together with the respective application forms. Once the topics are posted, the Program Coordinator notifies the students using their University email address, they choose the topic that interests them and submit it online within the prescribed time frames announced at the same time as the topics.

APPLICATIONS FOR UNDERTAKING A MASTER THESIS TOPIC

During the summer of the semester preceding the semester in which the Thesis course is offered, applications are accepted on the online course platform by students who satisfy the criteria to conduct a Thesis, in view of undertaking a relevant topic.

CHOICE OF TOPICS

The Students state on the standardized form, on a priority basis (up to 3 (three) Thesis titles from amongst the announced topics. Students also have the right to submit up to one topic which interests them and is not included in the aforesaid list. It is noted that a proposed topic not included in the list will be approved only in case of expression of interest to supervise the topic in question by a member of the Department's academic personnel. **NO** application for a topic proposed by a student will be accepted unless the Supervisor sends his/her agreement in writing (mail) to the coordinator of the Program.

ALLOCATION OF A THESIS TOPIC

After the expiry of the deadline for the submission of topics by the students, the Program Coordinator along with the Chair of the Department of Medicine and the Dean of the School meet and examine the applications, allocating students to Supervisors. As a rule, for applications submitted within the deadline, topics and Supervisors are assigned on a priority basis in accordance with the following criteria:

The overall grade of each student (GPA)

The availability of Supervisors.

For example, in case 2 (two) or more students happen to have chosen the same topic, priority is given to the student who has submitted his/her application within the deadline. In case two or more students have chosen the same topic and have both submitted their application within the deadline, the topic is allocated to the student with the highest overall grade (GPA) up until the third year of studies. Finally, topics proposed by a Supervisor are allocated to students up until the maximum number of Theses that he/she can supervise. When this number is reached, interested students are obliged to choose any other topic from amongst those remaining available on the list. It is the Department's intention to satisfy the interests of all students, however for various reasons this may not be possible. As a result, a new topic and type of Thesis may be assigned to students.

MODIFICATION – CHANGE OF THESIS TOPIC

Following the allocation of the Thesis topic, no modification is permitted without the prior submission of a well-substantiated application to the Program Coordinator, on condition that serious reasons for doing so apply. Applications by students for the modification of topics are accepted within a period of up to **30 days** from the allocation of the Thesis topic and they must necessarily be signed by both the student and his/her Supervisor.

7. FINALISATION OF THESIS TOPIC AND PROTOCOL ASSESSMENT

Within two months from the announcement of the Supervisors and the finalization of the topic, students are obliged to submit the Master Thesis protocol. If they fail to do so, the Thesis is cancelled and the student is marked with an "**F**" (fail) and submits a new application for Thesis in the following semester in which the course is available.

The Committee consisting of the program Coordinator, the Chair of the Department and the Dean of the Department assesses the titles and the proposals of the Theses and if the proposed topic satisfies the requirements (relevant to the corresponding Program, in line with the scientific requirements of the Program and not executed in the past – at least 5 years must have elapsed from the approval of a similar topic) then the topic of the Thesis can be approved. In case the above-named officials find that the topic does not meet the requirements of the Program, the Program Coordinator informs the student and the Supervisor and grants them an additional period of 10 working days to submit a new or modified title and a new proposal. If at the end of the foreseen time frame, the student has not submitted the title and the proposal, the topic is not allocated, and the student fails the course.

8.STRUCTURE OF THESIS PROPOSAL – PROTOCOL

The primary concern of the Supervisor and the student is to submit to the Program Coordinator the final title and a brief proposal on the approach of the topic they intend to address.

The proposal will cover, as a minimum, the following sections:

STRUCTURE OF PROPOSAL – PROTOCOL FOR RESEARCH THESIS

Title (up to 20 words)

The title must be clear and concise and present the substance of the study to be pursued.

Abstract (200-300 words**)**

Brief summary of the purpose, significance and methodology of the study without including bibliographical references, illustrations and tables. It outlines all the main points of the study, allowing the reader to form a comprehensive view of the proposed work. Apart from the introduction, the abstract is drafted in the future tense as it describes something to be conducted in the future.

The abstract has the following structure:

Introduction: Summary of the bibliographical review of the topic in 2-3 sentences.

Purpose: It states the purpose of the research work in 1-2 sentences.

Sample and Method: Reference to the sample of the research and the place where it will be conducted (without disclosing the identity of the location) as well as to the methodology used for data collection.

Keywords: 3-6 keywords which must correspond to the international lexicography terms used by Index Medicus (MeSH).

Introduction (2-4 pages)

Theoretical background

General and brief presentation of the topic. Concepts are clarified and relevant definitions are described.

Description of the problem

Description of the problem giving rise to the research questions.

Existing knowledge

Summary of the existing knowledge which is only directly related to the research questions and the variables of the study. References to general studies which do not support the hypotheses, or the research design of the study should not be cited. For each study, the student should include 2-3 sentences on the design, key findings and main conclusions, without going into great detail or making extensive references to a specific study. Care is taken to link these studies both between them and with the question under investigation. At the end of this section, reference must be made to what previous studies have not answered, where lies the innovation of the specific study and what gap it aspires to fill.

Purpose and specific objectives (0.5 page)

Purpose

The general purpose is stated in one sentence. The next sentence offers an analysis of the purpose with reference to the specific variables and the research question to be approached.

Specific objectives

Brief reference to numbered specific objectives of the study, i.e. the specific hypotheses and research questions to be examined. Reference to the specific variables and the relations or differences to be studied.

Innovation of research proposal – Enhancement of existing knowledge – Added value and benefit (0.5 – 1 page)

This section states why the proposed study is important for the population under review, how it will contribute to the promotion of the discipline with new knowledge and its significance for the practice and/or theory of the discipline, with special reference to the specific subject area of the Program of Studies for which the Thesis is conducted.

Methodology (2 – 4 pages)

This section includes a description of the methods and means to be used to achieve the study's purpose and objectives.

Research design

e.g. cross-sectional study or prospective study or case-controls study or randomised, experimental double-blind study or qualitative design, e.g. focus groups, or mixed methods approach.

Material

a. **Sample of participants**

   Reference to the sampling strategy and the size of the sample, the method of approach and the process of informed consent. Criteria of inclusion to the protocol and exclusion from the study.

b. **Tools**

   Description of the tools used for measuring the variables, justification and psychometric features. Reference to the empirical evidence of their validity and reliability.

Data collection method

Brief but accurate description of all the procedures to be followed, from the commencement of the study to the completion of data collection. Special emphasis is given to ethical and moral issues, e.g. how the secrecy and anonymity of participants will be safeguarded.

Statistical analysis and data processing

Brief but accurate description of all the statistical tests to be used with reference to the specific hypotheses and/or research questions.

Limitations and weaknesses of the study

Brief description of any problems in the design, the hypotheses, the sampling and the methods which cannot be improved due to practical reasons (limited time or financial resources).

Ethical issues (1 paragraph)

Possible benefits for the participants and process of informed consent. A protocol may need to be submitted to the National Bioethics Committee, the Office of the Commissioner for Personal Data Protection and other possible officials.

Referencing

List of the bibliographical references used in the drafting of the protocol in accordance with the referencing system of Harvard Anglia Ruskin University or of the American Psychological Association or the Vancouver System. What ever referencing system the student decides to use, it has to be consistent throughout.

Time frame (Table)

The time sequence and the time frames within which the various activities of the research work will be conducted.

Annexes

i. Informed consent form
ii. Questionnaires/Scales
iii. Approvals from competent organisations (if obtained)

(**Attention:** In drafting the protocol, the present and future tenses must be used).

9. STRUCTURE OF PROPOSAL – PROTOCOL FOR SYSTEMATIC REVIEW

Title (up to 20 words)

The title must be clear and concise and present the substance of the study to be pursued. The words “Systematic Review” must be stated at the end.

Abstract (200-300 words)

Brief summary of the purpose, significance and methodology of the study without including references, illustrations and tables. It outlines all the main points of the study, allowing the reader to form a comprehensive view of the proposed work. Apart from the introduction, the abstract is drafted in the future tense as it describes something to be conducted in the future.

The abstract has the following structure:

Introduction: Summary of the bibliographical review of the topic in 2-3 sentences.

Purpose: Purpose of the paper in 1-2 sentences

Methodology: Description of the search strategy and more specifically reference to the database(s) used in the search for articles, the keywords to be used in the search and also their combination. Finally, a clear statement for the inclusion or exclusion criteria of a study from the review needs to be added.

Keywords: 3-6 keywords which must correspond to the international lexicography terms used by Index Medicus (MeSH).

Introduction (2-4 pages)

Theoretical background

General and brief presentation of the topic. Concepts are clarified and relevant definitions are described.

Existing knowledge

Summary of existing knowledge (since at this stage no comprehensive analysis of the bibliography has been conducted) and presentation of what is generally known from studying the bibliography to this day on the topic in question. For each study, include 2-3 sentences on the design, key findings and main conclusions, without going into great detail or making extensive references to a specific study. Care is taken to link these studies both between them and with the question under investigation.

Description of the problem

Explanation of the need to conduct a review of the research bibliography on the specific topic (e.g. summary of existing scientific knowledge, identification of contradictions or gaps in the bibliography).

Purpose and specific objectives (0.5 page)

Clear statement of the purpose and specific objectives of the review.

Enhancement of existing knowledge – Added value and benefit (0.5 – 1 page)

This section states why the proposed study is important for the population under review, how it will contribute to the promotion of the discipline with new

knowledge and its significance for the practice and/or theory of the discipline, with special reference to the specific subject area of the Program of Studies for which the Thesis is conducted.

Methodology (2 – 4 pages)

This section includes a description of the methods and means to be used in order to achieve the study's purpose and objectives.

Description of the search strategy

Description of the search strategy, in other words:

a. The database(s) in which the articles will be searched,
b. The keywords to be used in the search, as well as their combination.

Your search strategy will be presented in a table (see Table 1 for a relevant example) – It is not necessary to include in the protocol the number of articles you have identified.

<u>Points requiring attention</u>:

a. The bibliographical review must be conducted in valid online databases, e.g. MEDLINE, PubMed, Scopus, etc.
b. In the keywords avoid the use of sentences.

Study inclusion – exclusion criteria

Presentation of the criteria for the inclusion or exclusion of a study from the review. These criteria may include the type of the study, the characteristics of the participants, the location where the study has been conducted, the variables under review, the measurement tools, etc.

The strategy to be followed for the number of studies which will be checked and assessed against the fulfillment of the inclusion criteria in order to be included in the review will be presented in an indicative flow chart (see Illustration 1).

Methodological assessment of the included studies

Specify any assessment of the methodological quality of the included studies that may affect the cumulative evidence (e.g. Newcasle-Ottawa scale, STROBE checklist of items that should be included in reports of cross-sectional studies etc).

References

List of the bibliographical references which have been used in the drafting of the protocol in accordance with the referencing system of the Harvard Anglia Ruskin University or of the American Psychological Association or Vancouver referencing system. The student needs to be consistent in the use of the chosen referencing system.

Time frame

Presentation of the time sequence and the time frames within which the specific activities of the research will be conducted.

Annexes

Table with the search strategy and the keywords to be used and flow chart presenting the results of the search strategy.

(**Attention:** In drafting the protocol, the present and the future tenses must be used. In case the student wishes to carry out a systematic review, consult the separate file titled Structure of systematic review).

Table 1: Search strategy and keywords to be used in the identification of studies investigating the relationship between central obesity and dementia

	Keywords	Number of identified articles
Constructivism in skill teaching	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	
#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #9		
Learning styles	10.	
	12.	
	13.	
	14.	
#11 OR #12 OR #13 OR #14		
Research design of the study (for quantitative studies)	16. cohort	
	17. prospective	
	18. longitudinal	
	19. follow-up	
	20. incidence	
	21. risk	
	22. rate	
#16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22		
#10 AND # 15 AND # 23		

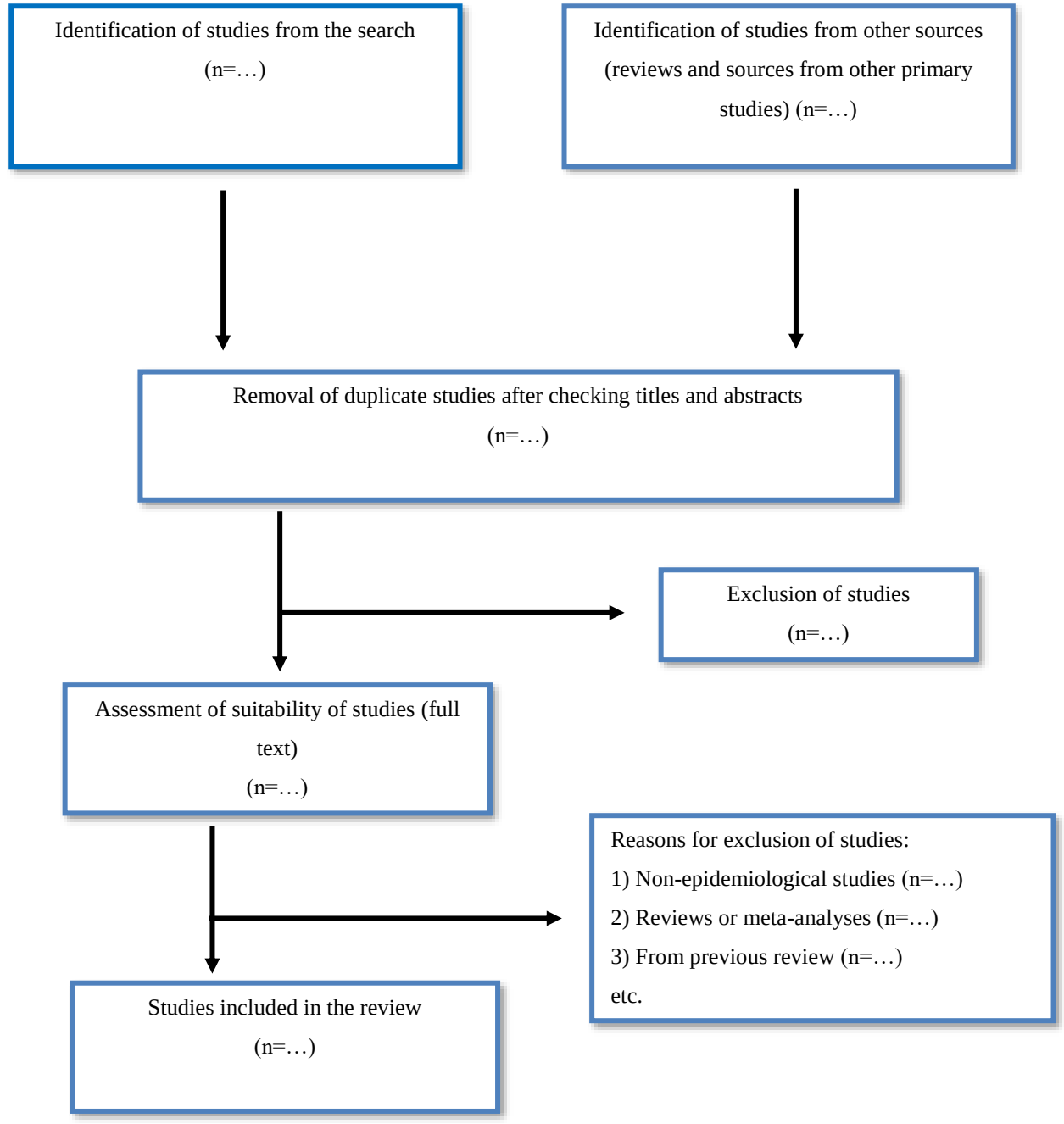

Illustration 1: Methodology to be used for the final selection of the studies to be reviewed (PRISMA FLOWCHART).

10. PROCESS OF PROTOCOL SUBMISSION

Following the finalization of the topics, the Supervisor confirms the commencement of his/her collaboration with the students, in order to launch the drafting of the protocol. The first student-supervisor or supervisor-student communication takes place. The protocol is prepared and submitted by the student.

As soon as the student and the supervisor finalize the text of the protocol, they submit it via the e-learning platform.

Following the submission, the Program Coordinator confirms that s/he has received the file and that it satisfies the specifications of these. A two-member committee is appointed and along with the Supervisor comprise the 3 member steering committee for the specific Master Thesis.

Thereafter, in case of major revisions, a new deadline is granted for the re-submission of the protocol, otherwise the student adopts the recommended suggestions / amendments to the protocol, provided the supervisor agrees. These are checked under the responsibility of the supervisor and immediately afterwards the student can begin to work on the Thesis.

11. DURATION OF EXECUTION OF THE THESIS

As a rule, the total duration of the execution of the Thesis is one (1) academic semester. As stated above, during the first two months of the semester the protocol is prepared, and the student drafts the introductory part of the Thesis (formal submission is not required). Then follows the execution and drafting of the Thesis. This can be extended up to 2 additional academic semesters in case of non-completion. In this case, the student receives an "**I**" (Incomplete). If, after the end of the two subsequent semesters, the Thesis has not been completed, the student receives an "F" (Fail) and enrolls again for the course in the next semester in which it is offered.

The ECTS academic units for the declaration of the Thesis are granted to the student in one semester only, and specifically in the semester in which the Thesis is declared. In case of failure, the student must enroll again in the course and will be granted the ECTS units again. The student is also granted the credit units corresponding to the course.

12. ASSESSMENT OF THESIS

The final deadline for the submission of the Final Thesis to the proposer for preliminary check, and provided the corrections of the various sections have been made during the supervision of the Thesis in the semester of execution, is set at two weeks before the end of the normal duration of semester courses (Fall, Spring). The process preceding the presentation is set out in the time frame below.

	Time frame	**Prior to the Presentation ***		
		Round 1	**Round 2**	**Round 3**
		Spring	Fall	Summer**
1	Dispatch of Final Thesis by the student to the Supervisor	5 weeks	5 weeks	4 weeks
2	Dispatch of the Thesis back to the student and final corrections.	4 weeks	4 weeks	3 weeks
3	Submission of Thesis by the student	3 weeks	3 weeks	2 weeks
4	Corrections and marking by Member 2 (Chair of the Committee for each Thesis) and member 3 and dispatch of comments and grade to the proposer and the professor in charge 1. If the Chair of the Committee fails to send comments, this amounts to positive acceptance of the Thesis as is (without this releasing the Chair from the obligation to send a grade)	2 weeks	2 weeks	1 week
5	The student makes any changes and corrections to the Thesis based on the feedback and thereafter submits the final text to the Supervisor for purposes of final confirmation. 1. If the student fails to make any changes / corrections / improvements, the supervisor may decide either to accept the Thesis as is or reject it with an F grade (Fail).	10 days	10 days	5 days

6	The Supervisor reads the final text, marks it and grants the student the final approval that the Thesis is ready.	7 days	7 days	3 days
7	The student completes the Thesis (if necessary) and submits for archiving.	5 days	5 days	2 days
8	The student proceeds to the oral defense of his/her Thesis.	Day of the presentation	Day of the presentation	Day of the presentation

* Public holidays are not taken into consideration in the above time frame.

As a rule, the Theses are presented in the week following the end of the final June examinations (for submission in the Spring Semester) or the week after the end of the final January examinations (for submission in the Winter Semester) or the week after the end of the final July examinations (for submission in the Summer Semester).

SUBMISSION OF THESIS FOR CORRECTIONS

In case the Thesis is not delivered within the set time frame, the process of assessment and presentation is postponed, automatically and without derogations, until the next academic semester (Fall, Spring or Summer), again subject to the set time frames.

The Thesis is delivered online (MS Word<20Mb file) and via the online platform. It is pointed out that the student can **in no case submit** the text in print form as this does not facilitate the follow-up of the corrections and comments, whilst resulting in unnecessary and needless financial cost.

The correction and marking of the single text of the Thesis by the members of the Committee will take place as follows:

i. **Member A (Chair of the Committee):** Within 1 week from receiving the Thesis.
ii. **Member B (member of the steering committee):** Within 1 week from receiving the Thesis
iii. **Member C (Supervisor):** Within 2 days from receiving the Thesis.

The written text of the Thesis is corrected electronically using the “Review/Track Changes” option in MS Word where corrections are made and any comments are inserted using the “New Comment” option. Once corrections are completed, the electronic file is forwarded by the Supervisor to the student for the necessary adjustments after explaining to him/her orally the full range of the corrections/remarks.

If the above time frame is respected, the preliminary corrections to the Thesis by Members 2 and 3 will have been completed precisely at the end of the exam period of the academic semester in question, and thereafter the student will be granted 10 days (in the Fall and Spring period) to make the corrections received in order to submit his/her text for marking to the proposer, and then proceed to the final submission via Moodle or online platform and to the oral defense of his/her Thesis.

PRESENTATION OF THE THESIS

Once the check has been completed and the Supervisor verifies that the modifications to the text have been made, the student prepares for the oral defense on the set date.

APPOINTMENT OF THE ASSESSMENT COMMITTEE

The Program Coordinator in consultation with the Chair of the Department and the Dean of the School appoints the three-member Assessment Committee which comprise the Supervisor (as member) and 2 independent examiners. The examiner may be internal or external. In case of the external examiner, s/he acts as the chair of the committee, otherwise the committee votes for the chair, who cannot be the supervisor. All assessment committees will follow specific assessment blueprints to ascertain validity, reliability, and reproducibility of the outcome of the assessment.

The assessment of the Thesis comprises two stages. The first one regards the assessment of the written text and is carried out before the presentation and the second regards the oral defense of the Thesis and is carried out at the time of the presentation. The marking forms are prepared by the supervisor together with the payment forms (for both Members) and are forwarded to the Program coordinator for approval, who will in turn verify and send the student's grade to the Secretariat. The program coordinator can not intervene at any point in the marking of the Thesis, unless s/he is a in the assessment committee.

13. MARKING OF THE THESIS

WRITTEN TEXT

The assessment and marking of the written text is a key prerequisite for the oral defense of the Thesis. Only when the Thesis is considered adequate, even with recommendations for minor corrections by the Assessment Committee and provided it receives a minimum pass grade (30/60), will the student be given permission to proceed to the oral defense of the Thesis. The written text of the Thesis is assessed using the "Review / Track Changes" option in MS Word, where corrections are made to the text, whilst any comments are inserted using the "New Comment" option. The assessment is based on clearly defined criteria laid down in the relevant form.

The grade assigned by each member of the Assessment Committee to the written text of the Thesis has a different weight and is allocated as follows:

i. **Member B Chair of the Committee:** 25/60
ii. **Member A (Supervisor):** 10/60
iii. **Member C (Member)** 25/60

On completion of the assessment of the written text, the relevant marking forms are collected by the Supervisor who brings them to the oral presentation for completion and signing. Three (3) working days before the oral presentation, the Program Coordinator determines the time and place of the oral defense of the Thesis through online platform and makes all necessary arrangements (reservation of room, provision for electronic means and technical support). He/she then informs accordingly by email the members of the Assessment Committee and the student who, under the responsibility of his/her Supervisor, has the obligation to post a relevant announcement

on the Department's announcement board. The program of presentations of the Theses will also be posted on the page of r the online platform under the responsibility of the Program Coordinator.

ORAL DEFENSE OF THE MASTER THESIS

The defense of the Master Thesis through an oral presentation by the student is carried out using "powerpoint" or a similar software program and lasts **15** min. After the presentation, students are examined by Assessment Committee for not more than **20 min**. On completion of the examination, the Committee meets in the absence of the student to determine the final grade as it arises from the presentation, whilst making relevant comments/remarks on the presentation which are announced to the student forthwith.

The guidance and supervision of the preparation of the Thesis presentation by the student are part of the Supervisor's obligations. The process of presentation and examination of the Theses are open to the public and anyone wishing to attend is welcome to do so, but has no right to comment, unless the Chair of the Assessment Committee decides otherwise. In any case, comments made by the public follow the examination and marking by the members of the Assessment Committee and are therefore not taken into consideration in determining the grade. The oral defense of the Thesis is assessed based on clearly defined criteria laid down in the relevant form.

The grade assigned by each member of the Assessment Committee during the oral defense of the Thesis is of equal weight and is allocated as follows:

i. **Chair of the Committee:** 15/40
ii. **Member A:** 10/40
iii. **Member C** 15/40

Each member of the Assessment Committee must attend the defense of the Thesis, either as Supervisor or as Examiner. In case the Supervision or the Chair of the Committee is prevented from attending, the Committee of Master Theses of the Program must be notified in writing at least 5 days prior to the date of the examination in order to be able to set a new date.

OUTCOME OF THE MASTER THESIS

The Assessment Committee of the Thesis assesses and accepts or rejects the student's Thesis in accordance with the criteria stated in the form of assessment of the written text, as laid down in the Annex. The Committee has the right:

i. To accept the Thesis as is and proceed with the presentation;
ii. To accept the Thesis after recommending to the student minor corrections and modifications, to be made in fixed short period of time (10 days) and checked by the Supervisor and proceed with the presentation;
iii. Not to accept the Thesis, as it stands, but recommend broad modifications and corrections. Once these are completed within a fixed period of time (30 days), the Thesis will be submitted again for defense and assessment by the same Committee, at a time set by the Program Coordinator.;

iv. Not to accept the Thesis, but recommend substantial modifications and improvements to be made within a fixed period of time (60 days), followed by a new submission for assessment by the same Committee.

v. To reject the Thesis and consider that the student has failed the course ("F": Fail), in which case the student must repeat the process from the beginning.

14. ENTRY OF COURSE GRADE

SUBMISSION OF GRADE TO THE SECRETARIAT

Once the examination is complete, the Supervisor places within 3 (three) working days in the locker of the Program Coordinator, the marking forms relating to the written text and the oral defense of the Thesis as well as the payment forms for further processing.

ISSUANCE OF GRADE

On completion of the above process, it is considered that the student has fulfilled his/her obligations in relation to the course and therefore the Program Coordinator checks and forwards the markings forms to the Secretariat for the issuance of the grade.

15. DESCRIPTION OF THE STRUCTURE OF THE DIFFERENT TYPES OF THESES

TYPES AND LENGTH OF THESES

The Thesis may be in the form of a "**Systematic Review**" or a complete "**Research Thesis**" with collection and processing of data. The length of the Master Thesis, which relates only to the main part of a thesis is set at 15,000 words (plus-minus 20%). Once completed, the Thesis must respect the specific structure analysed in detail here below depending on its type.

FINAL LAYOUT OF RESEARCH THESIS

Once the Thesis is completed and before its submission to the Supervisor for corrections, great care must be taken by students to ensure that it complies with the proper structure and development and is easy to read and accurate. The pagination of the Thesis must follow the order below:

- Cover
- Preliminary Pages
  - Title Page
  - Copyright Page
  - Assignment of Copyright Page
  - Abstract
  - Preface (optional)
    - Acknowledgements Section
    - Dedication Section
  - Table of Contents, with reference pages
  - List of Tables, with titles and reference page
  - List of Figures, with titles and reference page
  - List of Illustrations, with titles and reference page
  - List of Photographs, with titles and reference page
- Main Part of the Thesis
  - Introduction Chapter
    - Brief literature review
    - Objectives
    - Research hypotheses
    - Key requirements
    - Limitations
    - Theoretical and functional definitions
    - Abbreviations
    - Symbols
  - Literature Review Chapter
  - Methodology Chapter
    - Research design

Material (Location and time of conduct of the study, Sample, Tools)

Data collection method

Statistical analysis and processing of data

Ethical issues

Results Chapter

Discussion Chapter

Conclusions Chapter

Bibliography (referencing system of Harvard Anglia Ruskin University or of the American Psychological Association or Vancouver. Any system should be followed consistently.

Annexes (if any).

16. FINAL LAYOUT OF A SYSTEMATIC REVIEW THESIS

Once the Thesis is completed and before its submission to the Supervisor for corrections, great care must be taken by students to ensure that it complies with the proper structure and development and is easy to read and accurate. The pagination of the Thesis must follow the order below:

- Cover
- Preliminary Pages
  - Title Page
  - Copyright Page
  - Assignment of Copyright Page
  - Abstract
  - Preface (optional)
    - Acknowledgements Section
    - Dedication Section
  - Table of Contents, with reference pages
  - List of Tables, with titles and reference page
  - List of Figures, with titles and reference page
  - List of Illustrations, with titles and reference page
  - List of Photographs, with titles and reference page
- Main Part of the Thesis
  - Introduction Chapter
    - Theoretical background
    - Existing knowledge
    - Description of the problem
    - Purpose and specific objectives
    - Enhancement of existing knowledge – Added value and benefit
  - Methodology Chapter
    - Description of search strategy
    - Study inclusion – exclusion criteria
    - Final selection of studies of the systematic review
    - Assessment of the methodological quality of the studies
  - Results Chapter
  - Discussion Chapter
  - Conclusions Chapter
- Bibliography (referencing system of Harvard Anglia Ruskin University or of the American Psychological Association or Vancouver. Any system should be followed consistently.

For each specific part of the Thesis the following apply:

PRELIMINARY PAGES

It is noted that the preliminary pages have the same structure irrespective of the type of the Thesis.

COVER

The cover includes:

the logo of the University,

the School, the Department and the Program of Study,

the title of the Thesis,

the name of the student and their University registration number,

the name and title of the Supervisor,

the place where the thesis was conducted and the date of acceptance.

TITLE PAGE

The title page of the Thesis must contain the following:

The title of the Thesis, positioned in the centre, 5 cm from the top of the page. The title must be clear and concise and present the substance of the study pursued. In case the Thesis is a systematic review, the two words “Systematic Review” must be stated at the end.

The name of the student, positioned in the centre, 2.5 cm under the title.

The following statement, inside full margins, positioned 2.5 cm under the author’s name: Thesis submitted to the body of Faculty in partial fulfillment of the requirements for the MSc Degree of the Program Medical Education of the Department of Medicine, of the School of Medicine of European University Cyprus.

The following words are positioned in the lower half of the page, in the centre: Location 20… (The year on the title page must refer to the location where the study was conducted and the year of acceptance of the Thesis).

The following words are stated on the right: Approved by: …The names of the r Examining Committee are stated in the lines below.

COPYRIGHT PAGE

In case the student wishes to copyright the Thesis, the copyright page must be included, after the title page, with the following information written in the centre, in the lower half of the page:

© Year, Full Name
ALL RIGHTS RESERVED
ASSIGNMENT OF COPYRIGHT PAGE

With this page, European University Cyprus is granted permission to use the Thesis for purposes of the University, as well as to print and make copies available to the public on a non-profit making basis, in case copies are not available in any other way.

ABSTRACT

The abstract will follow the title page (and the copyright page, if any) and must be included in the Table of Contents.

The word “ABSTRACT” of the Thesis is typed in 1½ line spacing, Arial 12 font, in fully justified formatting. It is positioned centrally, at a distance of 5 (five) cm from the top of

the page. It is followed by the name of the student and the title of the Thesis. In brackets, in the centre under the title, follows the phrase (Under the supervision of

_____) which states the name of the Supervisor. This is followed by an empty line and the text of the abstract, in 1½ line spacing. The abstract must be printed on one side of the page only and in one single paragraph. The margins of the abstract must comply with the relevant instructions stated in the Annex to this Guide. The abstract of the Thesis must not exceed 300 words.

The title of the abstract must follow the same formatting as that of the title page. The abstract is a brief description of the Thesis and must be accurate and comprehensive so as to reflect the purpose and the content of the research. Also, the abstract must be self-contained, i.e. it must describe all the parts of the research. The abstract must help the reader understand in a few sentences what has been studied, the reason why it has been studied and the conclusions that arise. The abstract is structured and contains the following sections:

Introduction
Purpose
Methodology
Results
Conclusions.

At the end of the abstract the keywords are stated (up to 6), which offer a more general description of the Thesis topic. In the case of a review, the keywords do not refer to the keywords used in the bibliography search.

PREFACE

The preface follows the abstract and is typed in 1½ line spacing, Arial 12 font, in fully justified formatting. The heading is titled “PREFACE” and is positioned in the centre, 5 (five) cm from the top of the page. The preface is an optional part of the Thesis and consists in a general reference to what is included in each chapter of the Thesis in relation to the topic addressed. This part also contains separate pages for dedication and acknowledgments, if any.

TABLE OF CONTENTS

The table of contents follows the abstract (and the preface, if any). The heading is titled “TABLE OF CONTENTS” and is positioned in the centre, five (5) cm from the top of the page.

The table of contents must include all the parts of the Thesis, including the preliminary pages (title page, abstract, preface, copyright page, acknowledgments page, dedication page). In the table of contents, the preliminary pages are numbered in Latin numerals while the pages of the main part of the Thesis are numbered in Arabic numerals. It also includes the bibliography section and all the annexes to the Thesis.

If the Thesis contains sub-titles of one and/or more levels, these must be included in the table of contents. The sub-title(s) must begin in a paragraph 3 (three) to 5 (five) tabs to the right of the margin for the titles of the chapters. The titles set out in the table of contents referring to the various chapters must accurately reflect the titles of the chapters contained in the body of the Thesis.

The page numbers in the table of contents must be positioned in the right margin, while the empty space between the title or the sub-title and the page number must be covered by a straight continuous or dotted line.

The spacing between two chapters must be double, the sub-titles within a chapter must have a 1½ line spacing and if the reference to the corresponding sub-title extends to more than one line, it is interrupted at three quarters of the line and continues on the following line but with a single space.

LIST OF TABLES

Each table of the Thesis is defined with an Arabic numeral (for example Table 1, Table 2, etc.) or is defined with two parts of an Arabic numeral where the first digit refers to the chapter in which it is included, followed by a full stop, and the second digit indicates its sequence in the chapter (for example Table 3.2 refers to the second table of the third chapter).

The heading for the list of tables must be positioned at a distance of 2.5 cm from the top of the page, in the centre, and the phrase “LIST OF TABLES” must be written in capitals. Between the heading and the first title there must be an empty line. The line spacing between the titles must be double.

The number of each table (Arabic) and its title must be positioned in the left margin. The numbers of the pages (Arabic) are positioned exactly inside the right margin. The space between the tab and the page number is covered with a stippled line. The space between the table and its title is single while the space between the titles is double. If the title requires more than one line, this is interrupted at three quarters and continues below on a second line, with a single space. The number of the table and its title in the list of tables must accurately reflect those contained in the body of the Thesis.

LIST OF FIGURES

The heading for the list of figures must be positioned at a distance of 2.5 cm from the top of the page, in the centre, and the phrase “LIST OF FIGURES” must be written in capitals. The instructions set out above on the list of tables also apply to the list of figures.

LIST OF ILLUSTRATIONS

The heading for the list of illustrations must be positioned at a distance of 2.5 cm from the top of the page, in the centre, and the phrase “LIST OF ILLUSTRATIONS” must be written in capitals. The instructions set out above on the list of tables also apply to the list of illustrations.

LIST OF PHOTOGRAPHS

The heading for the list of photographs must be positioned at a distance of 2.5 cm from the top of the page, in the centre, and the phrase “LIST OF PHOTOGRAPHS” must be written in capitals. The instructions given above on the list of tables also apply to the list of photographs.

17. RESEARCH TYPE THESIS

MAIN PART

The main part of the Thesis is typed in 1½ line spacing, Arial 12 font, in fully justified formatting. It must include the following sections.

INTRODUCTION

The text begins with the word “Introduction” and the title of the research as title of the first chapter written in bold letters. In the introduction, the student guides the reader towards an understanding of the topic, taking a shortcut. This chapter briefly describes any information regarding the topic and acquaints and prepares the reader for the more clarifying information that will follow in the main body of the Thesis. More specifically, the Introduction presents the problem whose resolution will be later attempted through the research, presents the purpose, the specific objectives, the research hypotheses (if any), states the requirements, the boundaries and the limitations of the research, which may be related to the sampling, the research design, the tools used for the collection of the data and, in general, the adopted methodology which may affect the generalization of the results. Finally, it sets out the functional definitions and explains the abbreviations and symbols (where necessary).

In brief, the Introduction:

- Presents the problem and the research approach;
- Provides a short overview and presentation of the bibliography related to the problem;
- States the most relevant research on the topic of the Thesis;
- Refers to the importance of the research;
- Presents the purpose of the research;
- Accurately states, in 4-5 lines, the objectives of the specific research;
- Sets out the research and null hypotheses of the research (applies only to research protocols and experimental studies),
- States the key requirements, the limitations and the boundaries of the research;
- Also states the theoretical and functional definitions of key terms;
- Finally, it sets out the abbreviations and explains the symbols which may be included in the Thesis.

LITERATURE REVIEW

The review of the literature includes an extensive reference to relevant contemporary bibliography. The Literature Review represents a complex mental processing of primary data and its usefulness lies in the ability to inform the student on recent research developments in his/her field of study and enhance pre-existing knowledge related to the theory and exercise of evidence-based practice. Through the bibliography and article review, the student is called to study and analyse all contemporary developments on the topic under investigation, present comparisons and differences between them and recompose the existing knowledge, in order to present an original written work which will bear his/her personal stamp. In essence, a bibliography review is a form of organising information on a subject area, of systematic recording and drawing conclusions.

In the bibliography review, special care must be taken to focus on the topic under investigation and limit the inclusion of studies with more general conclusions. In analysing bibliography sources, insignificant details must be avoided whilst emphasis must be given to the relevant findings, the relevant methodological issues, and the most important conclusions. The progression of the text follows a logical sequence between the older and more recent research, as well as between research with a different theoretical and conceptual basis. The problem is developed in such a way that it can be understood by the broader scientific public and not only by experts in the field under investigation. It is desirable to approach the research in question from a critical point of view and to address controversial conclusions fairly.

Primary sources must be analysed extensively (whilst secondary sources are only listed), in stand-alone paragraphs of approximately 8-12 lines, forming part of homogeneous sections. The stand-alone descriptions of the experimental research must be linked between them and, at the end of each section, a critical summary of the conclusions arising therefrom must be set out.

In particular, the development and presentation of the primary sources must take into consideration the following:

Recording of information in chronological order
Classification based on their thematic sections
Classification based on the years' publication
Classification based on convergent or divergent views.

It is noted in particular that:

- The evidence set out must be valid and supported by evidence-based research.
- Information is strictly selected based on its relevance to the topic and publications of questionable origin and information from research involving corporate interests etc. are not included.
- Quotation marks must be used whenever information is copied or set out verbatim or paraphrased, although it is recommended that the student carries out the processing and systematic synthesizing of the information himself/herself. In case a piece of information is paraphrased, the student must be absolutely certain that he/she has reproduced precisely what the researcher meant in the relevant work.
- In all types of research, the bibliography review is written in the past tense.
- Both genders must be used (for example "he/she").
- Each section begins with a brief presentation of the topic to follow and ends with a summary of the information previously presented, focusing on the most important points.

METHODOLOGY

The title of the chapter is written in the middle of the page. The text begins below with a tab and usually includes the following sub-chapters which are written in small bold and italic letters, using one tab, and justified to the left. In this part, the student justifies his/her decisions relating to the methodology used and also states how he/she has addressed ethical issues of concern in the execution of the Thesis (permission from the Department's Committee of Ethics, permission from specific services, consent of participants in the research).

This part states the criteria and the mode of selection of the sample, the means and the equipment used, the procedures and the method followed and the statistical analysis. A detailed description allows other scholars-researchers to understand the entire process, verify the results and reproduce them if they wish.

Research design

The research design used in the Thesis, e.g. correlation study or prospective study or "patients-controls" study or randomised, experimental double-blind study is stated.

Material

a) Location and Time of conduct of the study

Brief description of the characteristics of the location of the study, its accessibility, and the time of conduct.

b) Patient sample

Sampling strategy and sample size, method of approach and process of informed consent. Criteria of inclusion in the protocol and exclusion from the study.

c) Tools

Description of tools used for measuring the variables (e.g. questionnaires, scales, lab equipment), justification and psychometric characteristics. Reference to the empirical evidence of their validity and reliability.

Data collection method

Brief but accurate description of all the procedures followed from the beginning of the study until the completion of data collection.

Statistical analysis and data processing

Brief but accurate description of the statistical tests used with reference to the specific hypotheses and/or research questions.

Ethical issues

After the end of the methodology, it is very important to state how the rights and anonymity of the subjects will be protected as well as the process of their written consent. In case the study required approval in terms of bioethical issues, the authority which has granted the approval must be mentioned.

RESULTS

The title is positioned in the centre of the page like in the previous chapters. The results are then classified and written in a clear and comprehensible manner. Graphs, summary tables and mathematical formulas are set out in all detail, if quantitative approach has been chosen. The illustration of a statistically or non-statistically significant difference allows the person studying the Thesis to identify what is being addressed. When the presentation of the results includes tables, the word "Table", justified to the left and in bold letters, must appear above the table, e.g. **Table 3.1**, followed by the title of the table (not in bold). In the case of figures, there must be a sub-title under the illustration, justified to the left, indicating the number of the figure and its explanation, e.g. **Figure 3.1** Comparison of retention rates for airway opening maneuvers using the two teaching techniques. Illustrations are marked in the same way as the figures. **Attention:** Both the text and the tables / figures / illustrations must

be understandable to the reader and present the finding that you consider important. For this reason, the text must describe every table / figure / illustration and its main finding. Information contained in the text should not be replicated in tables and figures. If a reader does not read the text, he/she should be able to understand the main finding from the table / figure / illustration alone.. It is also possible to set out the annexes at the end of the Thesis, if the tables or the graphs take up a lot of space in the flow of the text.

More specifically, this chapter includes the following:

- **i.** Presentation of the demographic characteristics of the sample (e.g. gender, age, educational level) in a table and description thereof within the text.
- **ii.** Description of the methodological approach (quantitative, qualitative mixed methods approach)
- **iii.** Presentation of the results. In case the results of statistical tests are presented (e.g. t-test for independent samples, ANOVA test, χ^2 test) the reader must be provided with the relevant information on the degree or value of the statistical test, the degrees of freedom and the level of statistical significance. For example, the results of the ANOVA statistical test are presented in the text as follows: $F_{(5,150)}= 5.75$, $p>0.05$. If a table presents evidence of a statistical analysis, the necessary statistical evidence must be set out under the table so that the reader can assess the test used. Tables of results from a statistical package are not acceptable for presentation in your Thesis unless they are properly processed. The appropriate results from these tables must be collected and presented in a new table written in Greek, which must bear an explanatory title and its structure and content must be understandable to the reader.

DISCUSSION

This chapter examines, interprets, and classifies the results and sets out in brief the main results. Emphasis is given to the theoretical repercussions of the results, but also to the validity of the conclusions. The discussion begins with a rewording of the purpose of the research. Then follows a description of how the data support the answer(s) to the research question(s). Any similarities or differences between the results and other research clarify and confirm the conclusions. By comparing the findings of this study with those of other researchers, new and important elements are highlighted. The strengths and limitations of the study are presented (based on the methodology followed). The section ends with a clear statement (for example the consequences of the findings of the research) or with reflections based on the answer(s) to the research hypothesis(es).

CONCLUSIONS

The title is positioned in the middle of the page and the following must be included:

- **I.** One conclusion for each hypothesis,
- **II.** A brief correlation of the results with the results of other research,
- **III.** Recommendations for practical implementation,
- **IV.** Recommendations for future research.

RECOMMENDATIONS

The recommendations identify omissions, record deficiencies, suggest ideas, set out both the weak and firm views of the review whilst also recommending new aspects for investigation arising from the findings of the research approach which has been applied.

BIBLIOGRAPHY LIST

It sets out the list of bibliographical references used in drafting the Thesis in accordance with the referencing system of Harvard Anglia Ruskin University or of the American Psychological Association or Vancouver. Any system should be followed consistently..

18. SYSTEMATIC REVIEW THESIS

MAIN PART

The main part of the Thesis is typed in 1½ line spacing, Arial 12 font, in fully justified formatting. It must include the following sections:

INTRODUCTION

The text begins with the word “Introduction” and the title of the research as title of the first chapter written in bold letters. In the introduction, the student guides the reader towards an understanding of the topic, taking a shortcut. This chapter briefly describes any information regarding the topic and acquaints and prepares the reader for the more clarifying information that will follow in the main body of the Thesis. The introduction comprises the following sections:

i. **Theoretical background**
   This section includes a presentation of the topic based on international bibliography. Moreover, relevant definitions are briefly described, concepts are clarified and epidemiological data is presented (where applicable).

ii. **Existing knowledge**
   Description of what is generally known from studying the bibliography on the topic to this day, without going into great detail and without merely listing a number of articles. An effort is made to group conclusions from previous studies (primary or reviews), with references to the corresponding articles of the researchers.

iii. **Description of the problem**
   Explanation of the need to conduct a bibliographical review of the research bibliography on the specific topic (e.g. summary of existing scientific knowledge, identification of contradictions or gaps in the bibliography, absence of guidelines).

iv. **Purpose and specific objectives**
   The purpose and the specific objectives of the bibliographical review are clearly stated.

v. Enhancement of existing knowledge – Added value and benefit

The reason for which the specific study for the specific population is innovative and how it will contribute through new knowledge to the promotion of the discipline as well as its significance for the practice and/or theory of the discipline are clearly stated.

METHODOLOGY

This section describes the method and the means which have been used to achieve the purpose and the objectives of the study.

I. **Description of search strategy**

Description of the search strategy, in other words the following will be stated:

a) The database(s) used in the article search;

b) The keywords used in the search, as well as their combination.

The search strategy must be presented in a table (see Table 2 below for a relevant example).

Table 2: Search strategy and keywords to be used in the identification of studies investigating the relationship between retention of skill and 4 stage approach

	Keywords	Search Number	Number of identified studies
Retention of IV line insertion	Key word1* OR Keyword2* OR Keyword3* OR Keyword4	#1	x
Four Stage approach	Key word1* OR Keyword2* OR Keyword3* OR Keyword4	#2	y
Research design of the study	cohort OR prospective OR longitudinal OR follow-up OR incidence OR risk OR rate	#3	z
	#1 AND #2 AND #3	#4	n

II. **Study inclusion – exclusion criteria**

The inclusion or exclusion criteria of a study from the review in terms of the following:

a) Type of studies
b) Characteristics of participants
c) Place of conduct
d) Type of intervention
e) Other general criteria

III. **Final selection of studies of systematic review**

The number of studies which have been checked and assessed in terms of fulfillment of the inclusion criteria in each stage and the final number of studies included in the review. It would also be advisable to justify in brief the reasons for which studies have been excluded from the review. This information will be presented in brief in a flow chart (see example below in Illustration).

IV. **Assessment of the quality of the studies**

The quality of the information provided by the studies included in the review is assessed. This can usually be done with the assignment of a quality score for each separate study. In this case, state the scale of the quality score used in the assessment of the studies. The scale of the quality score can be based on the following information regarding the study:

1) Selection of the study population and sample.
2) Method of design of the study.
3) Participation and duration of follow-up (repeat tests for prospective studies).
4) Method of assessing the exposure.
5) Method of determining the outcome.
6) Adjustments during the analysis.

Use the past tense when referring to the methodology you have followed for conducting the study as well as to your results.

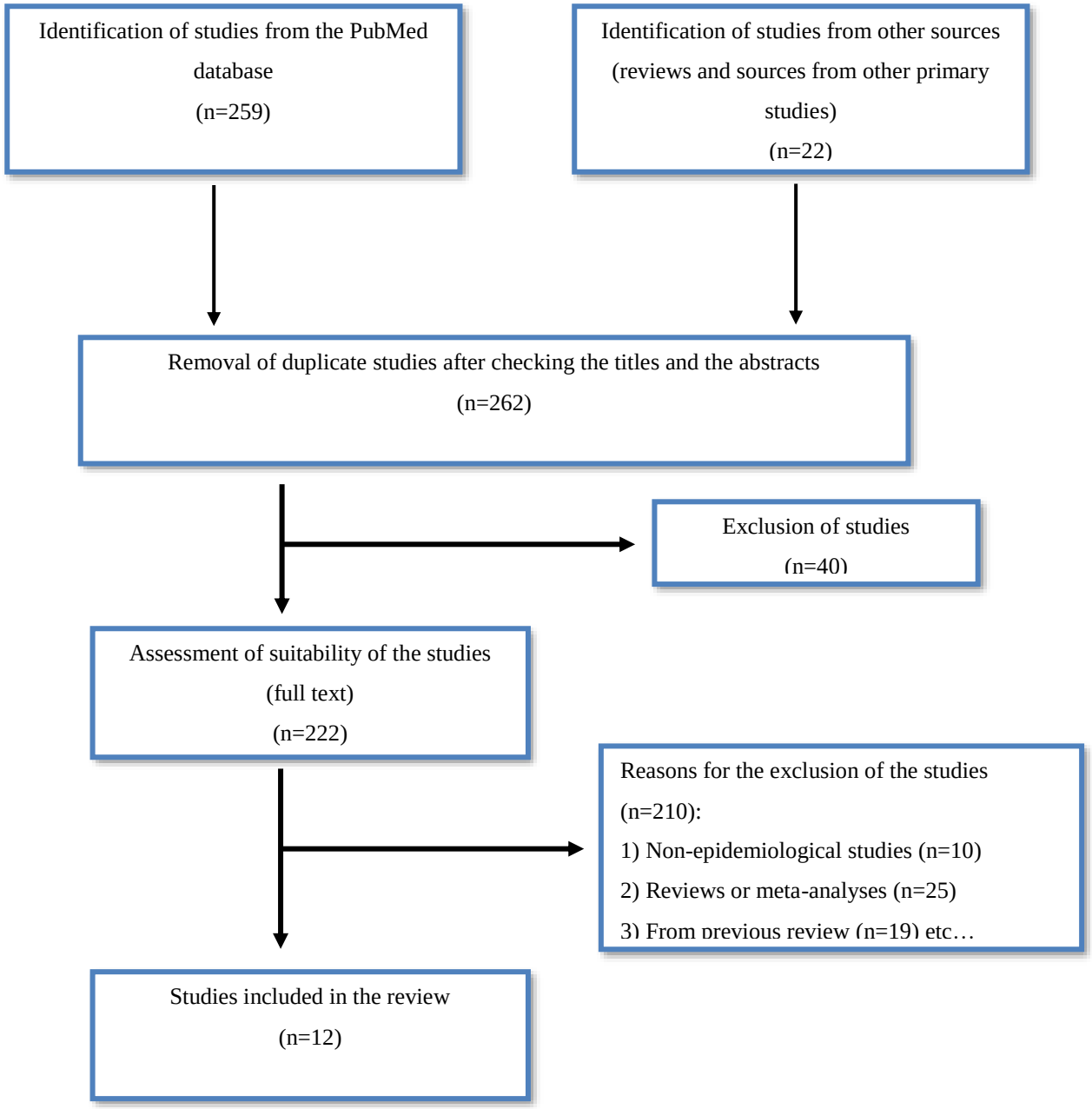

Illustration: Diagram illustration of the flow of results in the bibliography search

RESULTS

Presentation of the results of the research studies which have been reviewed. This section usually begins with a general description of the results of the search.

In general, the results must include the following:

i. One table (and/or more, depending on the thematic presentation) presenting in brief, and usually in chronological order, the main characteristics of the studies (e.g. year of publication and country where the study was conducted, type of the study, population – characteristics of participants, assessment of exposure and outcome, key findings, etc.) which are described in detail in the text.

ii. Detailed presentation and description of the studies in the text, attempting a combination of the indications from different research. This can be done grouping research results or types of studies.

iii. The structure of the text in sections is always done based on the research question and the various specific issues, whilst each section begins with an introductory sentence and ends with a conclusion.

iv. The methodological quality of each study is assessed separately based on criteria set with the use of an assessment scale which assigns a quality score to each study. This information can be presented in brief in a table setting out the score of the methodological quality of the studies.

DISCUSSION

This section begins with a summary of the key findings, followed by comments, comparisons, and interpretations of the results of the studies reviewed. In drawing conclusions, important issues that may relate to methodological problems of the research, contradictions in the findings and gaps that may have been identified, are addressed. The presentation can, again, be on a thematic basis, regarding the main issues that require attention. It is noted that, contrary to the previous chapter where references are limited to the studies included in the review, here the discussion can extend to related matters to substantiate views, positions and conclusions, with references to the broader international and Greek bibliography, giving examples of research and other studies not included in the review. This section sets out the strengths and the limitations of the Thesis.

CONCLUSIONS

In general, the conclusions include the following:

i. Research conclusions
ii. Significance for the discipline
iii. Orientation for future research, practice, dissemination of the results education, establishment of policies, clinical and other orientations
iv. Recommendations for practical implementation
v. Recommendations for future research.

BIBLIOGRAPHY

Bibliography forms an integral part of the Thesis. It sets out the list of bibliographical references which have been used in writing the Thesis in accordance with the referencing system of Harvard Anglia Ruskin University or of the American Psychological Association or Vancouver. The system of referencing should be consistent throughout

ANNEXES

The annexes are numbered and include items whose description is considered useful, but which should not be incorporated in the main text of the Thesis. For example, annexes set out questionnaire forms, descriptions of software programs, instructions, descriptions of complex tests, etc. The main body of the Thesis must include the proper references – where necessary – to the corresponding annexes to provide easier guidance to the reader. The annexes are always placed at the end of the Thesis. If there is more than one annex, the heading is a number or a letter or a letter and number combination (for example ANNEX IC, ANNEX ONE or ANNEX A) as well as a descriptive title. In each annex, the heading and the title must be positioned in the centre of the page and reference thereto must be made in the table of contents. Photocopied material is acceptable in the annexes, provided it is legible. All the pages of the annexes must be numbered using Arabic numerals.

19. GENERAL INSTRUCTIONS ON TEXT FORMATTING

TITLES OF CHAPTERS, SUB-CHAPTERS AND SECTIONS

It is advisable not to number the chapters and sub-chapters of the Thesis, but to escalate them based on the position and the way the headings are written, in the following order:

TITLE OF CHAPTER: In bold capital letters (e.g. METHOD, RESULTS, etc.); centrally justified; followed by an empty line.

Title of Sub-chapter: Bold, Italics, to the left, one tab in (e.g. Measurement Process). The text begins on the following line.

Title of Section: To the left, one tab in, italics (e.g. Test 1). The text begins after this title (on the same line).

NUMBERING

In case you need to use numbering in the text, this will be done first by using letters, e.g. a), b) etc. If each of these “a)”s and “b)”s must be further numbered, this will be done using numbers “1)”, “2)”, and if within these numbers, further numbering must be inserted then use Latin numbers. i.e. “i)”, “ii)”.

LETTER FONT

The letter font must be legible (Arial 12) and the contrast between the ink and the paper in the final printed text must be significant in order to ensure a clear and legible printout. Also, the spacing between the letters of the words must be adequate. Similarly, line spacing must also be adequate (1.5 spacing). The main text must be written in font 12 while the footnotes must be no more than two numbers smaller than the font used in the main text and can also be single-spaced.

UNDERLININGS

To underline, use one single continuous line, which must be the same throughout the text.

PHOTOGRAPHS AND ILLUSTRATIONS

The photographs and illustrations used in the Thesis must be of satisfactory quality, but not large in size, e.g. more than 200KB each.

MARGINS

In order to avoid problems after the book-binding, all the copies and the original of the Thesis must have the following margins:

I. Left

All the margins of the Thesis, from the first to the last page, must be at least 3 (three) cm. This margin allows enough space for book-binding.

II. Right

All the right margins must be at least 2.5 (two and a half) cm.

III. Bottom

The bottom margin must be at least 2.5 (two and a half) cm.

IV. Top

The top margin must be at least 2.5 (two and a half) cm, including the following pages: Copyright, Lists of Tables, Figures, Illustrations, Photographs, Bibliography, Annexes. The only exceptions (to the 2.5 margin) are the Title Page, the Abstract, the first page of the Preface (if any), the first page of the Table of Contents and the first page of each Chapter (including the Introduction), which must begin 5 cm from the top.

PRINTING, SPACING AND INDENTS

The Thesis must be printed only on one side of each page and the main text must be fully justified on each page. The spacing must be 1½ (one and a half), except in the case of references, notes, chapter titles, sub-titles and large headings, which will be single-spaced with an empty line between the topics. Paragraph indents must have five to ten spaces throughout the Thesis. References must have a distance of at least four spaces from the left and the right margin. The indent of the first row of a separate paragraph must have a minimum distance of four spaces.

PAGINATION

Each page of the Thesis must correspond to one number. The first page on which a number will appear will be page “ii” (Copyright page). The title page is deemed to be page “I” but it has no number. Arabic numerals (1, 2, 3, etc.) are used to number the rest of the pages of the text, illustrations, annexes, notes, list of references or bibliography. Page numbers must not appear on the first page of the main text or the first page of each new chapter. Numbers containing letters, hyphens, periods or parentheses [for example 1a, 1-2, -1-, I., and (I)] are avoided. The positioning of the page numbers must be the same throughout the Thesis, including the introduction, the text, the annexes and the bibliography. Given that the text is printed on one side only, page numbers must be positioned in one of the following three ways:

i. On the top right corner of the page, 3 (three) cm (4 lines) from the top and 2.5 (two and a half) cm from the right end.
ii. On the bottom in the centre, 3 (three) cm (4 lines) from the bottom of the page.
iii. As close to the positions described in i or ii as the word processor allows.

OTHER PROVISIONS

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The copyright of the Thesis belongs to the student and the Supervisor as they are the ones who have contributed to its execution. In case the material of the Thesis is announced at a conference, the first name to appear will be that of the person giving the speech. In case the material of the Thesis is published in a journal, the author first named is the person who has the main responsibility for drafting the article and responding to any questions of the journal's editorial committee In any event, none of the copyright holders will undertake any publication activities without informing and involving his/her associate.

The student and/or the Supervisor have the obligation to assign to European University Cyprus the right to use the Theses for the purposes of the University, as well as to print and make available copies to the public on a non-profit making basis, in case copies are not available in any other way. The assignment is made with the signing of the relevant form.

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In the case of a research Thesis (case study, questionnaires, etc.), the student has the obligation, in collaboration with his/her Supervisor, to submit an application to the University's Committee of Ethics for guidance / advice on the further steps until the submission of the complete research proposal to the National Bioethics Committee of the Republic of Cyprus, as determined in the relevant legislation. The collection of data and the remaining experimental procedures can only begin once the official approval of the National Bioethics Committee has been obtained.

AVOIDANCE OF PLAGIARISM

Both the student and his/her Supervisor must take all necessary measures to strictly avoid plagiarism, which is a serious academic but also criminal offence. Plagiarism is defined as the reproduction of verbatim texts or the paraphrasing of sections either from papers drafted by others or from books or scientific articles, without using quotation marks and references and without mention of the authors of the primary source. The Supervisor must thoroughly check the student's Thesis for phenomena of plagiarism and in case such phenomena are observed, the student is initially referred to the Department's Committee of Undergraduate Theses which drafts a relevant report. In this case, the student fails the course and the provisions laid down in the University's statute take effect.

20. ANNEX

European University Cyprus

THESIS

STUDENT PROGRESS REPORT

Name of student: Registration No.:

Topic of Thesis:

Supervisor:

Meeting	Purpose	Signature of Supervisor
1. Date	1. Designation of the topic and the supervising professor 2. Guidance in drafting the proposal 3. Discussion on the preparation of a review plan 4. Guidance in the search for bibliography sources	
2. Date	1. Preparation, delivery and assessment of research proposal by the Committee of Master Theses of the Program of Studies 2. Announcement of decision, discussion and feedback on the proposal by the proposer of the Thesis	**Signature of Program Coordinator** (Approval of research proposal)
3. Date	1. Delivery of review plan 2. Delivery of Bibliography chapter (bibliography sources) 3. Verification of verbatim bibliography sources (Articles in electronic or print form) 4. Discussion and feedback on progress	

4. Date	1. Delivery of summaries of research bibliography sources 2. Discussion and feedback on progress	
5. Date	1. Delivery of synthesis – critical analysis of the bibliography 2. Delivery of Bibliography Review chapter 3. Discussion and feedback on progress	
6. Date	1. Delivery of Methodology chapter (applies only to research Theses) 2. Discussion and feedback on progress	
7. Date	1. Delivery of primary data in electronic form (applies only to research Theses) 2. Delivery of Results chapter 3. Discussion and feedback on progress	
8. Date	1. Delivery of complete Thesis in print and electronic form 2. Discussion and feedback on progress	
9. Date	1. Delivery of Discussion chapter 2. Discussion and feedback on progress	
10. Date	1. Delivery of final text to the proposer 2. Feedback on the final text 3. Corrections	
11. Date	1. Submission of Thesis to the Department's Secretariat (in print or electronic form) and to the Two-member Examining Committee (in electronic form). 2. Appointment of the Two-member Examining Committee 3. Setting of date of presentation	**Signature of the Secretariat** (Thesis received)

12. Date	**Presentation of the Thesis**	
13. Date	1. Verification by the proposer of the final corrections in accordance with the indications of the Two-member Examining Committee 2. Final submission of the Thesis to the Department's Secretariat, in accordance with the University's applicable specifications 3. Issuance of grade	**Signature of the Secretariat** (Thesis received – Course requirements completed)

SCHOOL OF MEDICINE
DEPARTMENT OF MEDICINE

THESIS

APPLICATION FOR DECLARATION OF THESIS TOPICS

NAME OF STUDENT	
REGISTRATION NO.	
PROGRAM OF STUDY	

DECLARATION OF TOPICS

1.

TOPIC NO.	
TITLE	

2.

TOPIC NO.	
TITLE	

3.

TOPIC NO.	
TITLE	

Date: _____ Signature: _____

For Official Use

Application received on: _____

Joint Decision of the Program Coordinator, Chair, Dean

Approval of Topic No.: _____

Supervisor: _____

Re-submission of Topic: Yes ____ No ____

SCHOOL OF MEDICINE
DEPARTMENT OF MEDICINE

ANNOUNCEMENT OF PUBLIC PRESENTATION AND EXAMINATION OF THESIS

NAME OF STUDENT	
REGISTRATION NO.	
PROGRAM OF STUDY	MSc Medical Education
TOPIC OF THESIS	
TITLE	
SUPERVISOR	

Date of Presentation: _____

Time: _____

WRITTEN TEXT ASSESSMENT CRITERIA

EUROPEAN UNIVERSITY CYPRUS

School of Medicine
Department of Medicine

THESIS ASSESSMENT

Name of student: …… Registration No.: ……..

Topic of Thesis:

ASSESSMENT COMMITTEE:

Scale of Assessment of Written Study

	ASSESSMENT CRITERIA	Grade*		
1	Method and completeness in addressing the topic *Comments:*			
2	Organisation of material *Comments:*			
3	Documentation of information and data *Comments:*			
4	Originality of topic – inspiration *Comments:*			
5	Scientific background (correct terms and concepts) *Comments:*			
6	Thesis layout *Comments:*			
7	Language, spelling, correlation of concepts, clarity of written language *Comments:*			
8	Completeness and recording of bibliography *Comments:*			
***Attention**: Each assessor assesses each criterion out of 100%, with different weights. **Total**				

Date …….. **Grade of written text**

The Assessment Committee

Chair of the Committee Members

Signature: Signatures:

ORAL PRESENTATION ASSESSMENT CRITERIA

EUROPEAN UNIVERSITY CYPRUS

School of Medicine
Department of Medicine

THESIS ASSESSMENT

Name of student: …….

Registration No.: ……..

Topic of Thesis:

ASSESSMENT COMMITTTEE:

Scale of Assessment of Oral Presentation of Study

	ASSESSMENT CRITERIA	Grade*		
1	Method and completeness in addressing the topic *Comments:*			
2	Documentation of information and data *Comments:*			
3	Originality of topic – inspiration *Comments:*			
4	Knowledge and assimilation of the topic *Comments:*			
5	Scientific background (correct terms and concepts) *Comments:*			
6	Organisation of material *Comments:*			
7	Time management *Comments:*			
8	Quality of oral communication *Comments:*			
***Attention**: Each assessor assesses each criterion out of 100%, with different weights.	**Total**			

Date 12/12/2015

Grade of oral presentation	
Final grade of Thesis	

The Assessment Committee

Chair of the Committee
Signature:

Members
Signatures:

European University Cyprus

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NAME OF STUDENT	
REGISTRATION NO.	
PROGRAM OF STUDY	MSC MEDICAL EDUCATION
TITLE OF THESIS	

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I hereby declare that I have thoroughly studied, understood and fully complied with the internal regulations of European University Cyprus regarding Academic Ethics, Morals and Student Discipline.

Date: _____

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We hereby declare that this Thesis has been conducted under our supervision and guidance and relates to original work. We have no objection to the assignment of the copyright of the Thesis to European University Cyprus as detailed above.

Capacity of Member of the Assessment Committee	**Chair**	**Members**
Electronic signature		
Name		
Date	/ /	/ /