Medical Education Advanced Training Module

Curriculum Objective

The Medical Education Advanced Training Module (ATM) aims to build on the Clinical Education Training Program to create a sound foundation in principles and understanding of educational theory and practice. The ATM is designed to be equivalent in exposure to a Postgraduate Certificate of Health Professional Education.

Learning outcomes

By the end of the ATM all trainees should be able to:
- Understand and apply principles of adult learning
- Apply appropriate pedagogical principles to the design and delivery of educational materials and packages
- Create learning objectives and map them to a synthesized curriculum
- Synthesize appropriate assessment strategies.
- Synthesize appropriate evaluation tools for educational materials and courses.
- Recognise and respond to learners in difficulty.
- Demonstrate skills in the provision of feedback.

In addition, depending on their choice of elective unit, the trainee should be able to:
- Design and deliver simulation-based education.
- Understand, deliver and assess virtual learning experiences.
- Deliver and evaluate interprofessional education.
- Understand the principles of designing a research project in the field of health professional education.
- Apply evidence-based clinical teaching strategies in a variety of clinical and surgical environments.
- Demonstrate effective leadership in education.

ATM structure

Trainees undertaking the Medical Education ATM must complete Clinical Education Training (CET) Parts 1 and 2 as pre-requisites as detailed below:
CET Part 1
- Unit 1 Adult learning theory
- Unit 2 Teaching and learning preferences
- Unit 3 Personal learning plan
- Unit 4 Teaching and learning strategies
- Unit 5 Barriers to learning
- Unit 6 Communication

CET Part 2:
- Unit 7 The learning environment
- Unit 8 Evaluation, appraisal, and assessment
- Unit 9 Documentation

Trainees undertaking the Medical Education ATM must complete three mandatory and a minimum of one elective unit as detailed below.

Mandatory units:
1. Curriculum design
2. Clinical teaching
3. Feedback

Elective units (minimum one):
4. Virtual teaching
5. Simulation in education
6. Interdisciplinary education
7. Evidence-based medical education and leadership in education

Estimated length of time for completion of this ATM

Trainees undertaking the Medical Education ATM may expect to complete training and assessment requirements for this ATM (based on 1 day per week of training dedicated to this ATM) within 12 months or the fractional equivalent.

Training should involve 0.2 FTE in or affiliated with a Department of Postgraduate Education or under the supervision of a Director of Clinical Training or supervisor of equivalent experience.

Appropriate training sites suitable to undertake this pathway:

Potential sites include (but are not limited to):
- Public hospitals
- Specialised services and facilities

Training sites electing to offer training for Medical Education ATM should be able to provide trainees with the necessary resources and clinical material to complete relevant training and assessment requirements, including:
- An appointed Training Supervisor.
- Direct supervision by consultant obstetricians and gynaecologists and/or specialist practitioners in the field with high level experience.
- The resources available to undertake the assessments as outlined for the mandatory modules.

Training site requirements for other modules are detailed in the relevant modular content. Training in certain services or facilities is subject to the support of lead clinicians at these sites and prospective approval of the individual training program.

Where training is principally undertaken in a centre led by non-FRANZCOG clinicians, arrangements must be made for some procedural supervision to be undertaken by a suitably experienced clinician with FRANZCOG.

There is scope to individualise the program content and in particular the minimum caseload requirements depending on the supervised and recorded experience of the trainee earlier in their training.

ATM units

UNIT	Learning objectives	RANZCOG Roles	Teaching and Learning Strategies	Assessment
MANDATORY UNITS				
Unit 1 Curriculum design • Undertaking a needs assessment to plan curriculum design • Writing learning objectives (Bloom's taxonomy) • Educational strategies (SPICES) • Evaluation (Kirkpatrick levels)	• Understand and apply principles of adult learning • Create learning objectives using Bloom's taxonomy • Design a framework for curriculum development • Discuss assessment and evaluation strategies aligned to curriculum design models	SC CM CL	eLM ST HEP TSR	CBD 3MA 6MA
Unit 2 Clinical teaching • Cognitive apprenticeship • The learning triad – patient, student, teacher • Characteristics of effective teachers	• Describe the features of cognitive apprenticeship • Outline the issues around patient involvement in clinical teaching • Describe the characteristics of effective teachers • Apply evidence-based clinical teaching strategies in a variety of clinical and surgical environments. • Demonstrate effective skills in bedside and classroom teaching	SC CM CL	ST TSR	DOPS LB 3MA 6MA
Unit 3 Feedback • Theories of feedback (Regulatory focus, Reflective, Cognitive Dissonance) • Models of feedback • Impact of feedback source and setting	• Describe models of feedback in popular use • Outline key theories of feedback (Regulatory focus, Reflective, Cognitive Dissonance) • Describe the impact of feedback source and setting on the learner • Demonstrate skills in the provision of feedback	SC CM CL PF	eLM ST TSR	DOPS 3MA 6MA
ELECTIVE UNITS				
Unit 4 Virtual teaching • Appropriate platforms for e-learning • Engaging with learners • Assessment and evaluation in the virtual space	• Describe appropriate platforms for e-learning • Discuss strategies for maintaining learner engagement with online platforms • Outline strategies for assessment and evaluation in the virtual space • Demonstrate skills in online interactive teaching	SC CM CL	eLM ST HEP TSR	DOPS LB 3MA 6MA
Unit 5 Simulation in education • Simulation safety • Teaching procedures with simulation	• Design and deliver simulation-based education.	SC CM CL PF	eLM ST HEP TSR	DASH LB 3MA 6MA

UNIT	Learning objectives	RANZCOG Roles	Teaching and Learning Strategies	Assessment
• Team training with immersive simulation • Simulation for process and system testing • Measuring the impact of simulation	• Describe psychological safety in simulation education and outline its importance • Design and create simulation resources • Describe the use of in situ simulation for immersive team training and process testing • Measure the impact of simulation training			
Unit 6 Interdisciplinary education • Opportunities for and barriers to effective interdisciplinary education. • Designing Interprofessional education • Teamwork principles	• Describe opportunities for and barriers to effective interprofessional education • Outline the competencies that can be achieved through interprofessional education • Describe design principles that underpin safe interprofessional education • Discuss teamwork principles	SC CM CL PF	TSR	DASH 3MA 6MA
Unit 7 Evidence based medical education and leadership in education • Principles of evidence base analysis • Designing educational research • Contemporary leadership theory • Educational faculty development	• Use principles of research analysis to evaluate educational research • Develop educational research questions • Discuss the utility of quantitative and qualitative research methodologies in educational research • Outline contemporary leadership theory • Discuss educational faculty development strategies	SC CL PF	eLM ST TSR	3MA 6MA

Logbook requirements

Unit	Logged activity	Number	Assessment
Unit 1 Curriculum development	Supervisor review of learning reflection	1	3MA
Unit 2 Clinical teaching	Bedside teaching episode	5	DOPS*
	Case based learning tutorial	5	DOPS*
	Problem based learning tutorial	5	DOPS*
Unit 3 Feedback	Role play trainee feedback	3	DOPS*
Unit 4 Virtual teaching	Online interactive teaching episode e.g. tutorial	2	DOPS*
Unit 5 Simulation	Task trainer teaching episode	2	DASH*
	In-situ simulation	2	DASH*
	Immersive team simulation	2	DASH*

Unit	Logged activity	Number	Assessment
Unit 6 Interdisciplinary education	There are no logbook requirements for this module	0	DASH
Unit 7 Evidence based medical education and leadership in education	There are no logbook requirements for this module	0	N/A

* (DOPS and DASH tools can be used by a supervisor, by learners or by the Advanced Trainee undertaking the assessments. Use by all three parties will constitute true triangulated 360° assessment and should be the goal whenever possible. For the sake of the logbook, only the supervisor assessment requires to be documented).

Learning competencies

The following learning competencies are common to all units. Learning outcomes specific to individual units are detailed in the modular content.

Professional Skills	RANZCOG Roles	TLS	Assessment
• Demonstrate high level communication skills, including ability to adapt communication to patient's health literacy levels and/or identify need for interpreter	CM	ST	3MA 6MA
• Work effectively within a multidisciplinary team and support the roles of colleagues from other disciplines	CL	ST	3MA 6MA
• Demonstrate a capacity to supervise and teach junior colleagues and trainees in relevant disciplines	LD SC	ST	3MA 6MA
• Willingness to assist colleagues and problem solve with difficult cases	CM CL	ST	3MA 6MA
• Recognise own competence and limitations through self-reflection and audit of practice during training, with report to be presented for assessment	PF	ST	3MA 6MA
• Demonstrate a non-judgmental approach including respect for privacy, confidentiality, and social and cultural diversity.	PF	ST	3MA 6MA
• Demonstrate cultural safety in consultations with Aboriginal and Torres Strait Islander and Māori wahine and other people, and those from migrant and refugee populations	PF	ST	3MA 6MA

Glossary of terms

RANZCOG Roles	
ME	Medical Expert
CM	Communicator
CL	Collaborator
LD	Leader
HA	Health Advocate
SC	Scholar
PF	Professional

Teaching and Learning Strategies	
TLS	Teaching and Learning Support
eLM	eLearning module
ST	Supervised Training
HEP	Hospital Education Program (include here any hospital meetings, case reviews etc. that would be relevant)
RP	Research Project

Assessments	
LB	Logbook
3MA (Formative)	3 monthly assessment All ATMs are required to include a regular in-training appraisal, conducted 3 monthly, to be undertaken by the Training Supervisor. This should provide an opportunity to discuss aspects of the training and assessment that have been undertaken within the 12 week period of training
6MA (Summative)	6 monthly assessment All ATMs are required to include a regular in-training assessment, conducted 6 monthly, to be undertaken by the Training Supervisor. This should provide an opportunity to discuss aspects of the training and assessment that have been undertaken within the 6 month period of training
TSR	Training Supervisor Reports
DOPS	Directly Observed Procedural Skills
MSF	Multi Source Feedback
CBD	Case-based discussion
MSF	Multi Source Feedback
APSS	Assessment of Procedural Surgical Skills
DASH	Debriefing Assessment for Simulation in Healthcare

Version Register

Version	Date of Version	Pages revised / Brief Explanation of Revision
1	Nov 2022	Creation
2	March 2023	Revision
3	December 2023	Revision - Error fixed (Unit 6 – includes DASH, not DOPS) Revision – Removed Reflective Log from Assessment Methodology

Medical Education Advanced Training Module: Unit 1: Curriculum Design

Curriculum Objective

The Medical Education Advanced Training Module (ATM) aims to build on the Clinical Education Training Program to create a sound foundation in principles and understanding of educational theory and practice. The ATM is designed to be equivalent in exposure to a Postgraduate Certificate of Health Professional Education.

Learning Outcomes

By the end of this unit the trainee should be able to:

- Understand and apply principles of adult learning
- Create learning objectives using Bloom's taxonomy
- Design a framework for curriculum development
- Discuss assessment and evaluation strategies aligned to curriculum design models

Clinical Education Training (CET) unit revision

Advanced trainees should revise the content of the following CET units:

- Unit 1 Adult learning theory
- Unit 2 Teaching and learning preferences
- Unit 4 Teaching and learning strategies
- Unit 8 Evaluation, appraisal, and assessment

Logbook requirements

Advanced trainees should work though the accompanying resources and meet with their supervisor to discuss.

Assessment	Detail
Logbook	There are no logbook requirements for this unit. However, it is suggested that there be a reflective conversation between trainee and their supervisor

Learning Content

Introduction

It may not be immediately apparent to an Advanced Trainee undertaking the Medical Education ATM why they need to learn about curriculum development. RANZCOG already sets out a curriculum for trainees in obstetrics and gynaecology, and the need for further curricular development may, on initial thought, appear to be minimal.

Curriculum development underpins all education endeavours, in undergraduate and postgraduate learning. A grasp of the principles of curriculum design will allow the Advanced Trainee undertaking this module to analyse with clarity the strengths and weaknesses of existing curriculums, in addition to providing them with the skills needed to undertake their own curriculum design projects. A systematic approach will provide structure and enable analysis of the impact of the curriculum at the level of the learners and beyond.

Step 1: Needs assessment

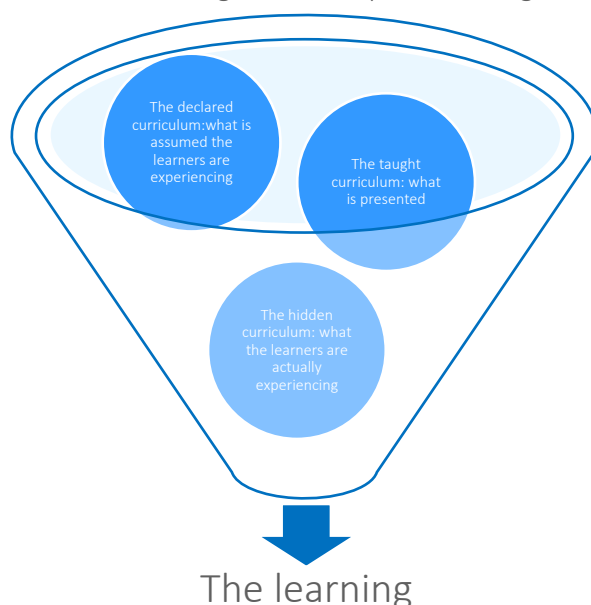The first step in designing a curriculum is defining the 'Why?'. The most obvious stakeholders in any education program are the learners, but consideration may need to be given to other groups, for example the educators, the organisation, the patient, or the community. There may be a difference in the needs-assessment strategies required for a curriculum re-development, based on perceived or measured deficiencies in a previous education program, compared to the strategies that will be appropriate in designing an entirely new course. Needs assessment can be done quantitively using data, for example evaluation data from learners, or survey data from patients: more nuanced information may be available through more qualitative means, such as focus group discussions, interviews, or Delphi techniques.

Step 2: Determining the content

The curriculum provides the overall content of the course or program - it is broad and over-arching in nature. The syllabus contains descriptions of the subjects contained within the curriculum – it is narrow and specific in nature. The curriculum content can be viewed from multiple perspectives, and thought will need to be given to the possible gap between the curriculum as it is designed, and the curriculum as it is delivered. This includes the important concept of the 'hidden curriculum' – the aspects of learning, or enculturation that may be inadvertently role-modelled or delivered along with the explicit teaching.

The declared curriculum:what is assumed the learners are experiencing

The taught curriculum: what is presented

The hidden curriculum: what the learners are actually experiencing

The learning

Step 3: Writing the learning objectives

Learning objectives should be written using the SMART acronym: Specific, Measurable, Achievable, Relevant and Time based. They should map to Bloom's Taxonomy and care should be taken to include learning objectives at the more advanced 'higher order thinking' top of the pyramid.
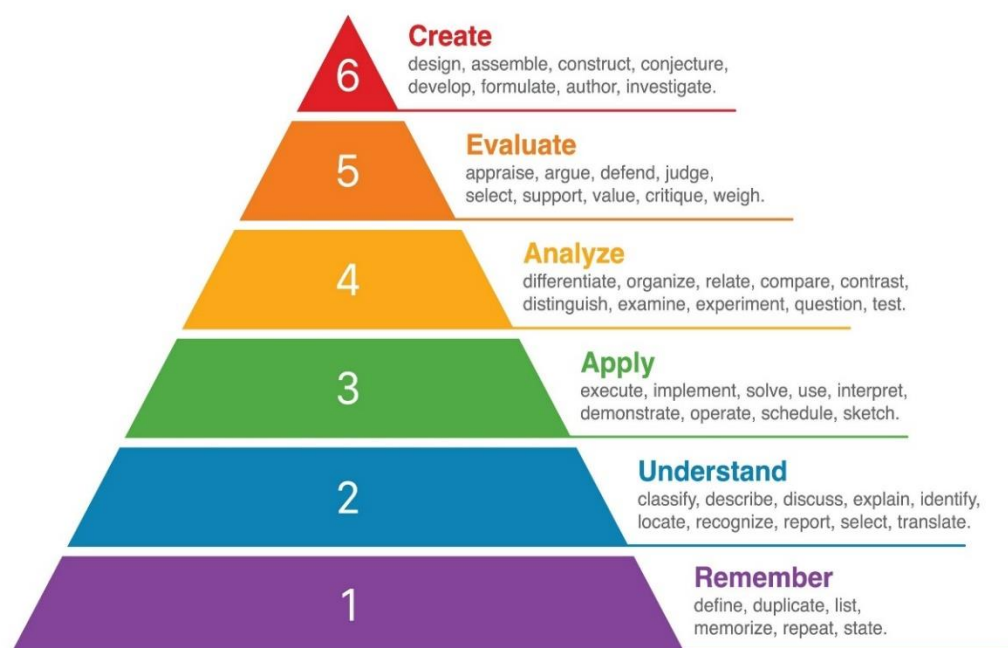
Step 4: Deciding the teaching strategies

The teaching methods appropriate to the delivery of the components of any curriculum will need to be mapped to the needs of learners and to the constraints of the educators. The SPICES model for curriculum planning offers some structure to considerations in this space.

> **Box 2: SPICES model of educational strategies**
> Student-centred----------------Teacher centred
> Problem-based ----------------Information gathering
> Integrated----------------Discipline specific
> Community based-------------------Hospital based
> Electives---------------Standard program
> Systematic--------Apprenticeship based/opportunistic

Step 5: Deciding the evaluation strategies

Determining how the curriculum will be evaluated is a key step that requires thought before the learners engage with the new learning materials. Some strategies will require pre vs post analysis and the opportunity to capture this data will be lost if consideration is not given in advance to the evaluation plan. Evaluation in education uses the four levels described by Kirkpatrick in 1975 – shown in Table 1. The evaluation tool or strategy used will depend on the Kirkpatrick level for which the course or program is aiming – the higher the desired impact, the more care will need to be taken at this stage of curriculum planning.

Table 1: Kirkpatrick levels of evaluation

Kirkpatrick level	Definition	Description
1	Reaction	How learners felt about the course, for example self-rated changes in confidence
2	Learning	Formally evaluated changes in knowledge or skill levels, for example improvements in post course questionnaire scores compared to pre-course
3	Behaviour	Retention of improvements in knowledge or skill levels of learners, persisting through to the workplace following training
4	Impact	Changes in clinical outcomes following implementation of the new curriculum, for example changes in morbidity or mortality statistics

Step 6: Implementation

Depending on the size of the course and curriculum, implantation may be a simple launch or may be a more involved step-wise introduction with a possible pilot phase to allow implementation of change post initial evaluation. Either way, communication to all stakeholders will be key.
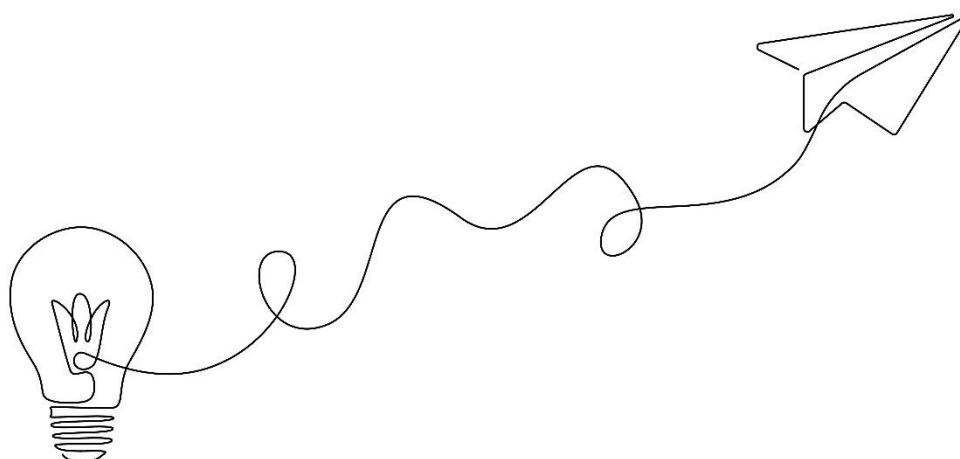
Conclusion

Curriculum design is a topic all medical educators will encounter at some point in their learning journey. Careful thought in the early phases of curriculum design can avoid difficulties further down the track, by building the strategies discussed in the 6 steps outlined here into the proposed education program prior to its roll out.

The reading materials listed for this unit will provide further information. You may like to consider how you would go about designing a curriculum for a specific course. How would you tackle curriculum development for a course to teach a basic surgical skill such as knot-tying, compared to a course designed to improve the communication skills of senior staff members? How will you write learning objectives at the higher-order level of Bloom's taxonomy? Advanced trainees undertaking this unit should complete the reading and arrange to meet with their supervisor to review their learning and reflections on this essential topic.

Essential reading

Bloom BS, Krathwohl D, Masia B. Taxonomy of educational objectives: the classification of educational goals. New York Longman 1984 ISBN : 0582280109

Chatterjee D, Corral J. How to Write Well-Defined Learning Objectives. J Ed Periop Med 2017:19(4)

Harden RM, Sowden S, Dunn WR. Educational strategies in curriculum development: the SPICES model. Medical Education 1984:18;284-297.

Harden RM. AMEE Guide No.21: Curriculum mapping; a tool for transparent and authentic teaching and learning. Medical Teacher, 2001:Vol 23;123-136

Taylor D, Hamdy H. Adult learning theories: Implications for learning and teaching in medical education: AMEE Guide No.83. Med Teach 2013;35:e1561-1572.

Thomas PA, Kern DE, Hughes M, Yim Chen B. Curriculum development for medical education: A six-step approach. Johns Hopkins University Press 2016.

Version Register

Version	Date of Version	Pages revised / Brief Explanation of Revision
1	Nov 2022	Creation
2	Dec 2023	Revision (Logbook details corrected – no logbook requirements)

Medical Education Advanced Training Module: Unit 2: Clinical Teaching

Curriculum Objective

The Medical Education Advanced Training Module (ATM) aims to build on the Clinical Education Training Program to create a sound foundation in principles and understanding of educational theory and practice. The ATM is designed to be equivalent in exposure to a Postgraduate Certificate of Health Professional Education.

Learning Outcomes

By the end of this unit the trainee should be able to:

- Describe the features of cognitive apprenticeship
- Outline the issues around patient involvement in clinical teaching
- Describe the characteristics of effective teachers
- Apply evidence-based clinical teaching strategies in a variety of clinical and surgical environments.
- Demonstrate effective skills in bedside and classroom teaching

Clinical Education Training (CET) unit revision

Advanced trainees should revise the content of the following CET units:

- Unit 4 Teaching and learning strategies
- Unit 5 Barriers to learning
- Unit 7 The learning environment

Logbook requirements

Assessment	Detail	Requirement	Tool
Logbook	Bedside teaching episode	5	DOPS - Bedside teaching
Logbook	Case based learning tutorial	5	DOPS - Small Group Teaching
Logbook	Problem based learning tutorial	5	DOPS - Small Group Teaching

Learning Content

Background

Clinical teaching is the foundation of medical education. Despite the clear value of experiential learning, evidence suggests that there has been a decline in active bedside teaching and in the use of formal teaching ward rounds since the turn of the century. The proposed explanations for this include limited time, increasing

numbers and complexity of patients, fewer interested teachers and reluctance to include patients in teaching encounters.

In this unit, the key concepts of how to teach in the clinical environment will be considered, along with techniques that can be applied to aid learners in this space. In this unit the term 'teacher' applies to the ATM advanced trainee, and 'learners' might be more junior medical staff, inter-professional learners, or medical students.

Cognitive apprenticeship

The cognitive apprenticeship model (CAM) proposed by Collins et al, and subsequently modified into a 3 Stage approach by Stalmeijer, provides a structure within which clinical teaching can be framed. The underlying tenet of the CAM is to make the supervisor's internal cognitive processes explicit to the learner, who can then observe, internalise, and practice these models to develop clinical skills.

Figure 1: the 3-stage cognitive apprenticeship model. *Adapted from Stalmeijer et al.*
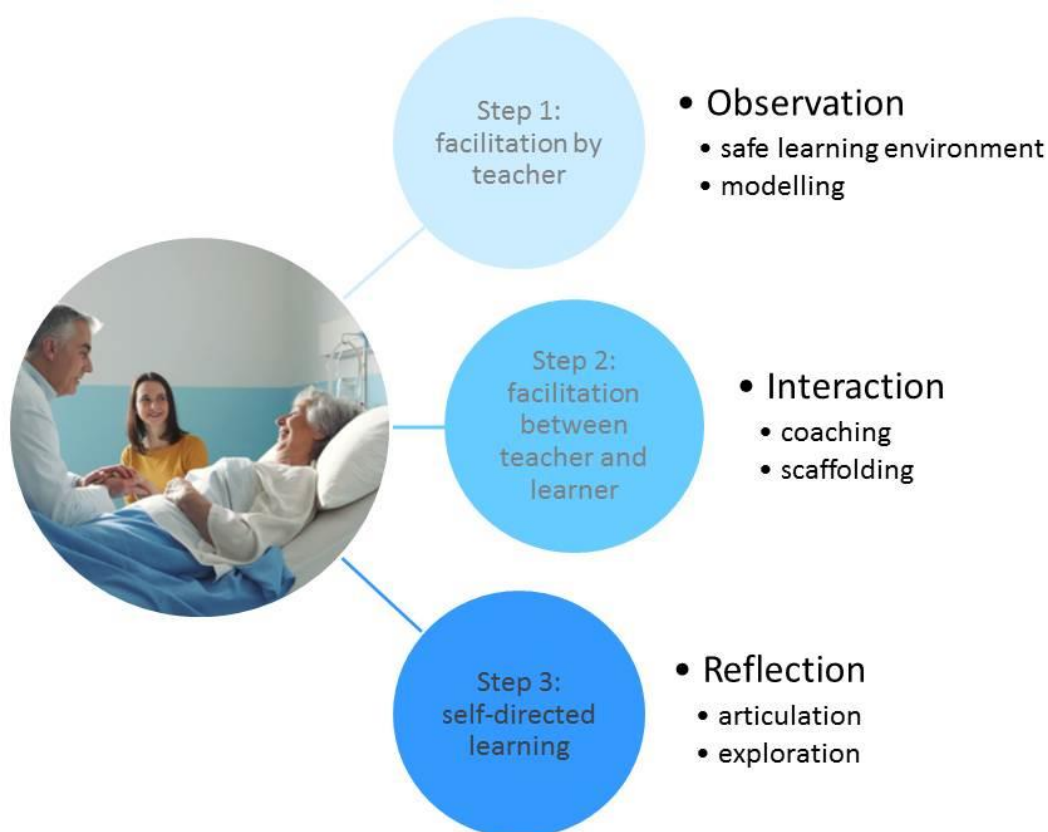
Step 1: the teacher must create a safe environment for the learners, in which they feel able to ask questions and seek information. The teacher should role model appropriate behaviours, including using appropriate language with patients, keeping to time, maintaining patient privacy and being respectful.

Step 2: the interactions between the teacher and the learners involve guidance and feedback, comprising coaching of the learners. Scaffolding of learning allows the learners to develop concepts and strategies with support, with the teacher stepping in to bridge gaps in the learners' approach

Step 3: the learners are empowered to take on independent development, with the aid of reflection. Leaners should be able to identify gaps (articulation) and formulate their own learning objectives (exploration). This stage requires more mature learners and a more in-depth relationship between the learners and the teacher.

Patient involvement in clinical teaching

The majority of patients seem to support and value bedside teaching. Reasons given for this include extra time spent with the medical team, and better insight into their medical condition. Patients have even rated their treating team as more competent following bedside teaching discussions. Williams et al suggest some strategies to overcome concerns from the medical team regarding the interpersonal aspects of bedside teaching – shown in the table below.

Barrier	Strategy
Lack of patient cooperation	• Request permission from the patient • Orient the patient to the dual purpose of the bedside session (i.e. patient care and teaching) • Include the patient in the discussions and answer questions • Inform the patient about her care
Learner's desire for autonomy in patient care/fear of a compromised relationship with the patient	• Respect the learner-patient relationship • Negotiate an appropriate level of autonomy with learners • Create a supportive learning environment • Share teaching responsibility with team members
Learner/patient fear of embarrassment/humiliation	• Learner o Create a supportive learning environment • Patient o Request permission from and orient the patient o Include and inform the patient

Characteristics of an effective teacher

In 1994 Irby identified attributes of successful clinical teachers by carrying out interviews and observations of six experienced teachers in internal medicine. He suggested that knowledge of subject matter comprises one area of teaching expertise, and is accompanied by knowledge of learners, knowledge of general principles of teaching and learning, and knowledge of content-specific instruction – in other words, the ability to tailor the content of teaching to the needs of specific groups of learners. Irby commented that the expert teachers in his study all shared a sense of enjoyment regarding teaching and made the teaching sessions fun and memorable.

Additionally, Irby's observed teachers all connected their teaching cases to broader clinical concepts, anchoring the teaching within a wider framework of medicine. The author concluded 'Excellence in clinical teaching requires clinical knowledge of medicine, of specific patients, and of context plus an educational knowledge of learners, general principles of teaching and case-based teaching scripts'. In 2008, Sutkin et al published a literature review on the subject 'What makes a good clinical

teacher in medicine?'. Sutkin identified forty-nine separate themes arising from the literature. The dominant theme was 'Medical/clinical knowledge' followed by 'Clinical and technical skills/competence', 'Positive relationships with students and positive learning environment' and 'Communication skills'.

In the last decade this view of expertise in teaching has subtly shifted. Finn et al discuss the characteristics of an effective medical teacher in their 2011 paper titled 'How to become a better clinical teacher'. The authors argue that the majority of the defining traits of excellent teachers are non-cognitive. Examples of such traits include relationship skills, personality types and non-verbal communication skills. Over time, the concept of an effective teacher has come to rely on these areas over the previous dominance of subject-matter expertise. The creation of a safe learning environment and positive role modelling by the teacher have come to be thought of as "the foundation on which teaching in the workplace is built" (Stalmeijer et al, 2013).

Essential reading

Ramani S. Twelve tips to improve bedside teaching. Med Teach 2003;25(2):112-115

Ramani S, Leinster S. AMEE guide no 34: Teaching in the clinical environment. Med Teach 2008;30:347-364.

Williams K, Ramani S, Fraser B, Orlander J. Improving Bedside Teaching: Findings from a Focus Group Study of Learners. Acad Med 2008;83:257-264.

References

Beckman T, Lee M, Rohren C, Pankratz VS. Evaluating an instrument for the peer review of inpatient teaching. Med Teach 2003;25(2):131-135

Collins A, Brwon JS, Newman SE. Cognitive apprenticeship: Teaching the crafts of reading, writing and mathematics. In: Resnick LB ed. Knowing, Learning and Instruction. Hillside, NJ: Lawrence Erlbaum Assoc Inc; 1989:453-494.

Finn K, Chiappa V, Puig A, Hunt D. How to become a better clinical teacher: A collaborative peer observation process. Med Teach 2011; 33: 151-5.

Irby D. What Clinical teachers in Medicine Need to Know. Acad Med 1994; 69: 333-42.

Stalmeijer RE, Dolmans D, Snellen-Balendong H et al. Clinical Teaching Based on Principles of Cognitive Apprenticeship: Views of Experienced Clinical Teachers. Acad Med 2013;88:861-865.

Sutkin G, Wagner E, Harris I, Schiffer R. What Makes a Good Clinical Teacher in Medicine? A Review of the Literature. Acad Med 2008; 83: 452-66.

Version Register

Version	Date of Version	Pages revised / Brief Explanation of Revision
1	Nov 2022	Creation
2	Dec 2023	Revision (consistent language for the tools – DOPS)

Medical Education Advanced Training Module: Unit 3: Feedback

Curriculum Objective

The Medical Education Advanced Training Module (ATM) aims to build on the Clinical Education Training Program to create a sound foundation in principles and understanding of educational theory and practice. The ATM is designed to be equivalent in exposure to a Postgraduate Certificate of Health Professional Education.

Learning Outcomes

By the end of this unit the trainee should be able to:

- Describe models of feedback in popular use
- Outline key theories of feedback (Regulatory focus, Reflective, Cognitive Dissonance)
- Describe the impact of feedback source and setting on the learner
- Demonstrate skills in the provision of feedback

Clinical Education Training (CET) unit

Advanced trainees should revise the content of the following CET units:

- Unit 6 Communication
- Unit 8 Evaluation, appraisal and assessment

Logbook requirements

Assessment	Detail	Requirement	Assessment	Tool
Logbook	Role play trainee feedback	3	DOPS	DOPS – Feedback

Note: Logbook requirements for the ATM can be fulfilled during observed feedback discussions with a training registrar if this is considered by the supervisor to be appropriate and safe for all parties. Three mock Junior Doctor term assessment forms are provided in the Unit 3 resources if this is the preferred approach.

Learning Content

Background

Feedback has been defined as 'information provided by an agent (e.g. teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding'.[1] Feedback is considered an essential part of learning, and it is well recognized that there are optimal circumstances under which feedback should be delivered in order to maximize learning benefit for the recipient. Conversely, in some instances feedback interventions can impair performance rather than enhancing it, and there are key aspects of feedback that require attention for the learner to derive a positive rather than a negative effect. Trainees are obviously familiar with feedback as consumers, or recipients. This unit aims to give the Advanced Trainee key insights into the provision of feedback – an essential aspect of their future role as a clinical educator.

Models of feedback

Feedback has moved on from the original 'Good-bad-good' feedback sandwich. There are several models which can be applied, some of which are summarised below.

Model	Key features	Advantages	Disadvantages
Pendleton	4 steps: Ask the learner what went well Add observer comments Ask the learner what needs improvement Add observer comments	Familiar – a variation on the feedback sandwich Structure mandates learner engagement	Care must be taken not to allow the learner to skip the first step, and launch immediately into negative aspects
Plus/delta	What went well? The 'Plus' aspects What could be changed next time? The 'Delta' aspects	Works well for a single observed episode, e.g. feedback on a surgical procedure	Concentrates on the negative aspects of learner performance. Care required to involve the learner and encourage reflection
SET GO	S – What the observer Saw E – What Else the observer saw T – What the learner Thinks G – Goals the learner would like to achieve O – Offers/ suggestions on how to achieve the goals	Encourages reflection Creates tangible goals	Learners can lack objectivity and be overly self-critical
Advocacy/ enquiry	Uses a 'stance of curiosity' to establish the internal environment for a learner that led to specific observed actions or behaviours	Encourages reflection Builds relationship and understanding between learner and supervisor	Relies on a genuine position of neutrality and non-judgmental observation from the supervisor

Regardless of the model, there are other key aspects of feedback in clinical medicine that require consideration: the feedback source, the recipient and the nature of the feedback.

Feedback source

All feedback derives from a source, whether it is external, such as a person or a resource, or internal from the self. Self-reflection and internal feedback, particularly with regards to episodes of failure, have been described as amongst the most powerful feedback episodes contributing to academic and professional development.

Advanced trainees undertaking the Medical Education ATM may have concerns regarding their validity as providers of feedback when the recipients of the feedback are themselves also junior doctors and learners. Research has suggested that feedback in clinical medicine may be more effective when the source is equal in status to the recipient as problems can arise when there is a marked hierarchy across the feedback diad if the perceived power differential distorts the perception, acceptance and desire of the recipient to respond to the feedback.[2] The emphasis should be on feedback as a dialogue, in which both members of the feedback diad are open to, and interested in, the views of the other.[3]

Regardless of the perceived status of the feedback source, feedback is more effective when the source is authentic, respectful, supportive, empathic, non-judgmental and keeps the process confidential.[3] It has been argued that trainees should be allowed to choose their own observers, in order to enhance the collegiality of the process and to improve the likelihood of feedback being welcome and well received.

Feedback recipient

Feedback can be accepted, modified or rejected by the recipient, so the recipient is a key factor in the delivery of effective feedback.

A recent theory of feedback – the 'Regulatory focus' theory proposes that the effect of feedback depends on the learners' focus during the observed event, and the perception of the requirement for success in the assessment.[4] Tasks with a 'promotion focus' are those that learners will perceive themselves as 'wanting to do'; for example, improving in a specific desirable skill. In contrast, tasks with a 'prevention focus' are those that learners will perceive themselves as 'needing to do'; for example, passing an assessment upon which a promotion or exam success depends. In a 2010 commentary, Kluger and Van Dijk[6] argued that promotion focused feedback interactions are more likely to result in learning when positive feedback is employed, creating a 'high arousal' state in the recipient and motivating further positive behaviours. In contrast, prevention focused interactions are more likely to result in learning if negative feedback is employed.

Feedback may be more effective when it is sensitive to the recipient's locus of control. Recipients with internal focus do better with feedback derived from task and/or self, whereas externally focused recipients do better with feedback derived from others. This is an argument for using multiple feedback sources (i.e. self and peer) as it creates a wider 'net' in which to cater for the differing foci of all recipients of the feedback.

Feedback has been shown to be more effective when it is sensitive to the recipient's self-esteem, and when it focuses on observed behaviours, which can be modified, rather than personality traits, which cannot.[3] This concept includes the focus of feedback on distinguishing between events, which are objectively observed, rather than motivations, which are subjectively surmised. Feedback recipients can view negative feedback as criticism, rather than as an opportunity to develop. For this reason, the relationship between the recipient and the source is important as personal relationships will complicate the feedback process.

Feedback process

Feedback can be verbal, written, statistical, graphical or behavioral and may be more effective when conveyed in a variety of modes.[2]

Figure 1: An example of a Graphical Item Map, used in feedback of FSEP results.
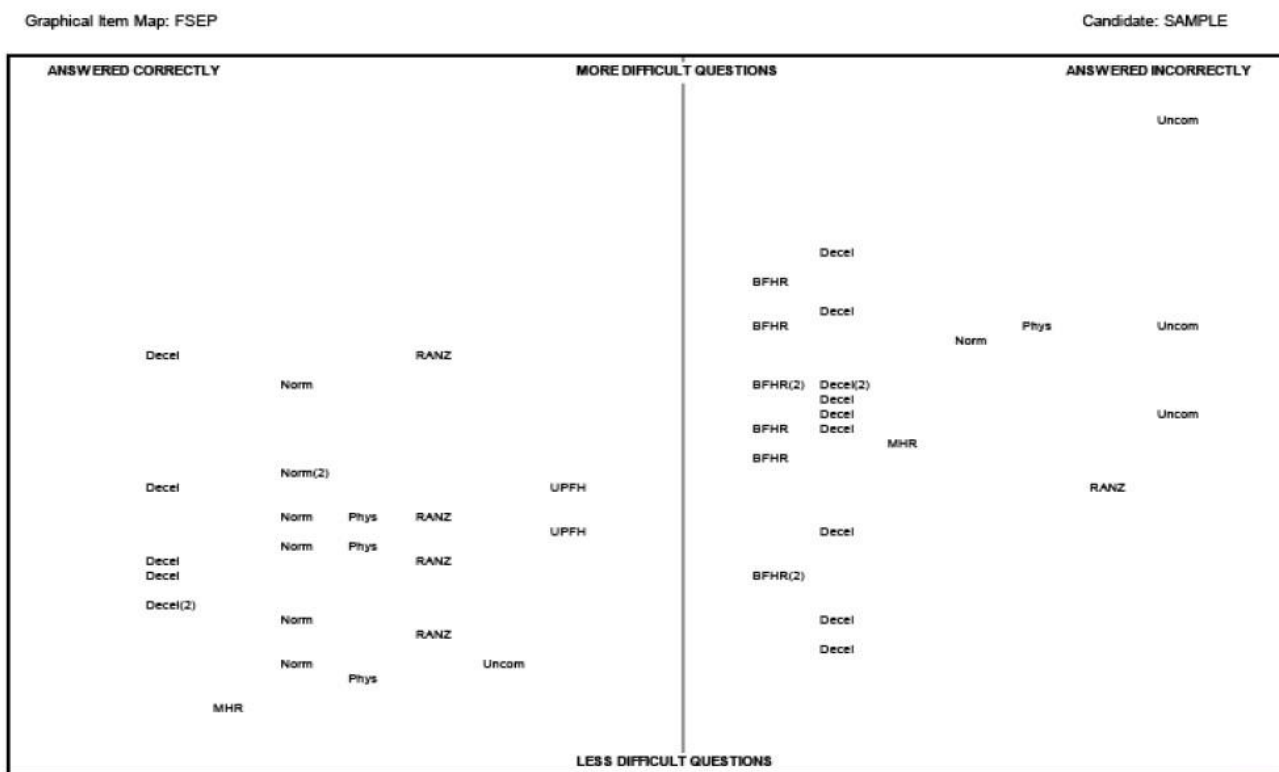
It may be beneficial for the recipient to select the way in which the feedback is conveyed.

Regardless of the mode of feedback delivery, it is more likely to be effective if the feedback contains specific data and objective evidence related to goals that are defined by the recipient or to rewards linked to positive performance.[3] Feedback needs to provide information specifically relating to the task as feedback has been shown to be more likely to be associated with improvement of learner performance when it relates to a defined task and how to do it effectively, rather than when it relates to general praise, reward or punishment.

Feedback may be more effective when it creates a moderate amount of cognitive dissonance between the perceptions of the observer and the perceptions of the self. Cognitive dissonance refers to the idea that if a gap exists between two 'separate' situations (behaviours, emotions or opinions), it is a normal reaction to attempt to reconcile those differences in order to create a harmonious 'whole'. This effect is most marked when the discrepancies between the feedback source perceptions and the feedback recipient perceptions are moderate rather than large or small as the gap may be too large to realistically reconcile in the former case, and not worth the effort of reconciliation in the latter.

The timing and venue for feedback is also important, as feedback is likely to be more effective when it allows for response and interaction.[3] Although feedback may be best given in a short timeframe following an observed interaction, it is important to allow time for reflection and for the initial emotional response to the interaction to settle.

Conclusion

Giving feedback well is an essential skill for a clinical educator, requiring careful thought and preparation. Feedback is ideally considered as a process, and not a one-time 'quick-fix'. Advanced Trainees undertaking this module are encouraged to reflect on their own experiences of feedback, and to actively discuss skill development in this difficult area with their supervisor.

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2. Brinko K. The Practice of Giving Feedback to Improve Teaching. What is Effective? *J High Educ* 1993; **64**(5): 574-93.

3. Ramani S, Krackov S. Twelve tips for giving feedback effectively in the clinical environment. *Med Teach* 2012;34:787-791

4. Watling C, Driessen E, van der Vleuten C, Vanstone M, Lingard L. Understanding responses to feedback: the potential and limitations of regulatory focus theory. *Med Educ* 2012; **46**: 593-603.

5. Kluger A, Van Dijk D. Feedback, the various tasks of the doctor, and the feedforward alternative. *Med Educ* 2010; **44**: 1166-74.

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https://fsep.ranzcog.edu.au/FSEP/media/FSEP/Assessment

Version Register

Version	Date of Version	Pages revised / Brief Explanation of Revision
1	Nov 2022	Creation
2	Dec 2023	Revision (consistent language for the tools – DOPS)

Medical Education Advanced Training Module: Unit 4: Virtual Teaching

Curriculum Objective

The Medical Education Advanced Training Module (ATM) aims to build on the Clinical Education Training Program to create a sound foundation in principles and understanding of educational theory and practice. The ATM is designed to be equivalent in exposure to a Postgraduate Certificate of Health Professional Education.

Learning Outcomes

By the end of this unit the trainee should be able to:

- Describe appropriate platforms for e-learning
- Discuss strategies for maintaining learner engagement with online platforms
- Outline strategies for assessment and evaluation in the virtual space
- Demonstrate skills in online interactive teaching

Clinical Education Training (CET) unit revision

Advanced trainees should revise the content of the following CET units:

- Unit 2 Teaching and learning preferences
- Unit 5 Barriers to learning
- Unit 6 Communication
- Unit 8 Evaluation, appraisal and assessment

Logbook requirements

Assessment	Detail	Requirement	Assessment	Tool
Logbook	Online interactive teaching episode e.g. tutorial	2	DOPS	DOPS - Online learning

Learning Content

Background

The Covid-19 pandemic has brought many challenges to medical education, some of which have been utilized as opportunities. The requirement for social distancing and being able to access learning from home environments has led to an increase in interactive online and virtual learning, the necessity for which is likely to be with us for some time. All educators need to understand the differences between teaching in a virtual teaching and teaching face to face, and trainees undertaking this unit will have an opportunity to study and to demonstrate their skills in this growing area. Virtual learning can be used to deliver didactic teaching including lectures, small group learning including tutorials, and interactive sessions including webinars. Advantages and potential barriers to e-learning have been described, and these are discussed in the reading materials and in the unit resources.

Webinars

A webinar is any live online event that allows participants to attend virtually. Webinars allow multiple learners to attend and engage in activities to which they may otherwise have no access and have financial and organizational advantages over events that require in-person attendance. They can also be convenient ways for presenters to access large groups of learners from the convenience of their own computer.

In recognition of the fact that managing a webinar requires a specific set of competencies, Topor and Budson published a '12 Tips' Medical Teacher article on how to present an effective webinar in 2020. Their tips include becoming familiar with the technical logistics for your webinar, creating clear and engaging visual materials, building learner engagement into your webinar, and learning from feedback. Topor and Budson also recommend strategies that will be familiar to a clinical educator from the broader context of education provision: performing a needs assessment, setting appropriate learning goals, practicing your presentation, and incorporating evaluation strategies into the webinar planning.

Strategies to promote engagement for the virtual learner

Multiple authors have recognized that learner engagement in the virtual space is harder to achieve than in face-to-face learning, and more essential for success (Woolliscroft, Maggio, Sanders). Interactive gaming strategies can be useful, but the need to create learner interest needs to be balanced with caution regarding the over-use of gimmicks and tools that add 'edutainment' rather than education. The potential for online 'superstar virtual educators' has been described as a risk to the broader context of medical educator skill development and maintenance (Woolliscroft). The key may be to adopt strategies that fit in with the values and natural teaching style of the clinical educator, whilst preserving the opportunity for learners to engage in the virtual learning episode or platform (Maggio).

Videos and multi-media tools can be effective tools with which to engage learners online. Examples might include simulated patient interactions in an online communications course, or clinical examination demonstration in a basic obstetric skills online course. Learners will gain the most from these tools through reflection, which can be facilitated by small group break-out sessions following the screening of a video, or by interactive questions to prompt learner responses.

Role plays can be used effectively in the online learning environment, with the same caveats as face-to-face use of role play. Box 1 gives some tips for the use of role play that apply to the virtual environment as much as to the real world.

Be prepared

Decide what your aims and objectives are and design your role play accordingly

Decide whether role plays will be improvised or scripted

Decide whether interventions or interruptions will occur during role play or not

Provide clear instructions and review them with the learners.

Optimize the environment

Try to be as realistic as possible

Keep noise and distracters to a minimum

Include different perspectives

Allow learners to rotate through different roles

Give an opportunity for rehearsal

Consider use of a warm-up exercise to break the ice.

Give structured feedback

Consider if feedback is to come from teachers alone or will peer feedback be included. Give instructions on how to provide peer feedback if relevant.

Provide opportunities for learners to repeat the role play following feedback

Box 1: Tips for the use of role play in virtual learning

Assessment and evaluation in the virtual space

Online learning lends itself well to learner-focused assessment strategies including interactive quizzes with multiple-choice questions or extended matching questions which can be easily incorporated into online courses and activities. Giving learners multiple attempts, with scripted feedback to enhance learning, is a straightforward way to engage learners and create active learning. Short answer or essay type assessments can also be built into online courses, allowing the learners to directly upload assessments, and facilitating easy oversight of learner development and progress. Clinical skill development is harder to directly assess in the virtual environment, but online learning including instructional videos and faculty demonstrations can be effectively used to scaffold skill development, for example in simulation training courses (Jones).

Evaluation in online learning follows the same 4 level Kirkpatrick model in general usage (Table 1).

Table 1: Kirkpatrick levels of evaluation

Kirkpatrick level	Definition	Description
1	Reaction	How learners felt about the course, for example self-rated changes in confidence
2	Learning	Formally evaluated changes in knowledge or skill levels, for example improvements in post course questionnaire scores compared to pre-course
3	Behaviour	Retention of improvements in knowledge or skill levels of learners, persisting through to the workplace following training
4	Impact	Changes in clinical outcomes following implementation of the new curriculum, for example changes in morbidity or mortality statistics

Evaluation at K1 simply seeks to discern if the learners found the online learning episode or platform useful or enjoyable and is the absolute minimum for evaluation goals of any education program. Online learning has been evaluated at K2 and shown to be effective in improving learner knowledge and skills (Sandars, Kokotailo and Singh). By definition evaluation at K3 and K4 must take place outside of the virtual environment, but careful

selection of appropriate evaluation tools and metrics and inclusion of consideration to evaluation opportunities at these higher levels will enhance educator and course development and potentially improve institutional support for online learning activities.

Advantages to e-learning

Although the sudden enforced imperative for virtual learning came as a result of Covid-19, the impetus to develop virtual learning platforms and strategies pre-dated the pandemic, and the advantages will outlast it.

The most obvious advantage is the ability of the learner to access the virtual environment at any time, and from a variety of hand-held devices. This makes resources more available, more accessible, and more learner-friendly, which suits the modern medical learner.

Networking and interdisciplinary collaboration opportunities can be enhanced by e-learning. Hayat *et al* describe this in their 2021 paper on the challenges and opportunities presented by virtual learning. An interviewee in Hayat's study gave a perfect example of this: 'Previously, there were four professors and 20 residents in a grand round, but now we have rounds with 80 people, two in America, two in Europe and one in Tehran. It elevates the level.' Another advantage identified by this study is the easy access to revision materials. Learners can re-watch and review e learning materials, allowing for a more in-depth learner engagement.

As Woolliscroft puts it, the advantages to virtual learning include 'spaced learning and interleaving, a focus on threshold concepts, scaffolding, minimization of cognitive overload, and self-paced learning', placing the focus clearly on the unique capacity of online learning materials to be used in individualised ways that best meet the needs of each learner.

The next frontier?

Simulation and simulated patients are already standard teaching and learning tools in medical education. The use of augmented and virtual reality as a learning platform has not yet gained mainstream prominence in medical education, largely due to the cost of high quality VR and due to a deficit in the evidence base that VR use in general clinical education provides any benefits over bedside clinical teaching. VR is well established in some aspects of clinical skill teaching, including laparoscopic surgery skill development. The next logical step will be to create VR simulations in other areas, including communication skills and situational awareness training. It remains to be seen whether the medical educators of the future will continue to develop and expand this technology, potentially negating the need for any clinical learning to take place in the real-world environment.

Conclusion

As we look towards the resumption of some of our face to face and in-person learning, the question will become – which parts of virtual learning do we leave joyfully behind, and which do we continue to develop and refine moving forward? A blended approach is likely to be key, and the modern medical educator will need to have skills in both environments.

The key to successful virtual learning is to maintain learner engagement. Whether that is accomplished with small group break out sessions fostering verbal engagement, or by interactive polls or quizzes to promote active learning, the importance of optimizing, and continuously evaluating, learner engagement in online learning cannot be over-emphasised.

Essential reading

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Version Register

Version	Date of Version	Pages revised / Brief Explanation of Revision
1	Nov 2022	Creation
2	Dec 2023	Revision (consistent language for the tools – DOPS)

Medical Education Advanced Training Module: Unit 5: Simulation

Curriculum Objective

The Medical Education Advanced Training Module (ATM) aims to build on the Clinical Education Training Program to create a sound foundation in principles and understanding of educational theory and practice. The ATM is designed to be equivalent in exposure to a Postgraduate Certificate of Health Professional Education.

Learning Outcomes

By the end of this unit the trainee should be able to:

- Design and deliver simulation-based education.
- Describe psychological safety in simulation education and outline its importance
- Design and create simulation resources
- Describe the use of in situ simulation for immersive team training and process testing
- Measure the impact of simulation training

CET Module revision

Advanced trainees should revise the content of the following CET units:

- Unit 4 Teaching and learning strategies
- Unit 6 Communication
- Unit 7 The learning environment

Logbook requirements

Assessment	Detail	Requirement	Assessment	Tool
Logbook	Task trainer teaching episode	2	DASH*	DASH
Logbook	In-situ simulation	2	DASH	DASH
Logbook	Immersive team simulation	2	DASH	DASH

Debriefing Assessment for Simulation in Healthcare

Learning Content / Resources

The content of this unit is found in the Acquire module on Simulation. Trainees should read the unit materials and review the online resources prior to completing their observed logbook sessions.

Essential reading

Grant VJ, Robinson T, Catena H, Eppich W, Cheng A. Difficult debriefing situations: A toolbox for simulation educators. Med Teach. 2018 May;40(7):703-712.

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McGaghie WC, Draycott TJ, Dunn WF, Lopez CM, Stefanidis D. Evaluating the impact of simulation on translational patient outcomes. Simul Healthc. 2011 Aug;6 Suppl(Suppl):S42-S47.

Ziv A, Wolpe PR, Small SD, Glick S. Simulation-based medical education: an ethical imperative. Simul Healthc. 2006;1(4):252-256.

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Janssens S, Beckmann M, Bonney D. Introducing a laparoscopic simulation training and credentialing program in gynaecology: an observational study. Aust N Z J Obstet Gynaecol. 2015 Aug;55(4):374-378.

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Version Register

Version	Date of Version	Pages revised / Brief Explanation of Revision
1	Mar 2022	Creation
2	Dec 2023	Revision (consistent language for the tools – DOPS)
		Revision (removed Reflective Log from Assessment methodology as the reflection is embedded in the DASH)

Medical Education Advanced Training Module: Unit 6: Interprofessional Education

Curriculum Objective

The Medical Education Advanced Training Module (ATM) aims to build on the Clinical Education Training Program to create a sound foundation in principles and understanding of educational theory and practice. The ATM is designed to be equivalent in exposure to a Postgraduate Certificate of Health Professional Education.

Learning Outcomes

By the end of this unit the trainee should be able to:

- Describe opportunities for and barriers to effective interprofessional education
- Outline the competencies that can be achieved through interprofessional education
- Describe design principles that underpin safe interprofessional education
- Discuss teamwork principles

Clinical Education Training (CET) unit revision

Advanced trainees should revise the content of the following CET units:

- Unit 5 Barriers to learning
- Unit 6 Communication
- Unit 7 The Learning environment
- Unit 8 Evaluation, appraisal and assessment

Logbook requirements

Assessment	Detail	Assessment
Logbook	There are no logbook requirements for this module*	DASH**

Advanced trainees should work though the accompanying resources and meet with their supervisor to discuss.
**Debriefing Assessment for Simulation in Healthcare. The DASH tool used in Unit 5: Simulation can be used as an artifact to aid reflection for the trainee undertaking Unit 6 if desired.*

Learning Content

Background

"Interprofessional education occurs when two or more professionals learn about, from and with each other to enable effective collaboration and improve health outcomes" (WHO Framework for action on interprofessional and collaborative practice 2010).

Interprofessional education (IPE) has been promoted as an effective way to improve patient outcomes and provide cost-effective health care. There are innumerable examples of interprofessional teams working together in almost every health service and workplace. When interprofessional teams are expected to work together, it is beneficial for team members to understand each other's roles, scope of practice, for there to exist mutual respect, and effective forms of communication and conflict resolution. These are the objectives of IPE exercises.

There can be no doubt that the efficacy of the team has an impact on the overall achievement of its goal. For this reason, many professional bodies are embracing IPE and committing to providing authentic and engaging IPE activities from as early as student teaching. This module aims to introduce the principles of IPE and discuss both its merits and its challenges.

Foundational Principles – what is IPE?

A useful definition for understanding IPE comes from WHO:

"Interprofessional education occurs when two or more professionals learn about, from and with each other to enable effective collaboration and improve health outcomes"

To break this definition down further we can look at each element individually. Firstly, it is important to understand what entails a "professional group". Professions can be defined as autonomous and self-regulating groups such as doctors, nurses, midwives, sonographers etc. This is different to disciplines, which are groups within a profession such as anaesthetist and surgeons.

Another important part of the definition is understanding the term interprofessional, and how that differs from the term multiprofessional. Interprofessional activities requires groups to work together, learn from each other and share decision making. Examples include interprofessional birth suite simulation requiring collaboration between obstetricians and midwives. Multi professional activities may have a number or participating professions, but they work in their own silos and don't engage in much interaction. This might include tutorials for doctors and nurses who are concurrently being taught about the massive transfusion protocol.

The reason we engage in IPE is to improve our effectiveness at interprofessional teamwork. Interprofessional teamwork activities might include a theatre team performing a theatre checklist or a multidisciplinary chronic pain team.

Ask yourself:

- What interprofessional teams do you work in now? Do you also work in a multi-professional team, or an intra-professional team?

- Can you think of an interprofessional collaboration you have been involved with?

- Think of a current challenge in your department that may benefit from interprofessional education. How would this look in your workplace? Which professional groups would be involved? What would the learning outcome be? How would you facilitate the groups interacting with each other?

How does IPE improve clinical practice?

Collaborative interprofessional care has been promoted as a way to improve both health outcomes and cost effectiveness in health care. In her TED talk, Joy Doll explains how interprofessional collaboration helped her team to address all the aspects of the IHI Triple Aim. The Triple Aim is a framework that describes an approach to optimising health systems performance.

A fourth aim has been added to address the high rates of burn out and practitioner mental health issues.

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1. Improve patient experience of care

2. Improve population health outcomes

3. Provide cost effective care – reduce per capita cost of education

4th aim: Care of the clinician

Box 1: The IHI (institute for healthcare improvement) triple aim

If we are to have effective interprofessional education, we need to teach it. This is where IPE becomes important. Traditionally, each profession is educated in its own silo. Practitioners graduate without ever having come into contact with the other professions they are expected to work with. Interprofessional education improves acquisition of Interprofessional competencies that are required for effective collaborative practice. There are many frameworks for the competencies that we hope to achieve by engaging in IPE. Here is one example:

1) interprofessional communication

2) patient/client/family /community-centred care

3) role clarification

4) team functioning

5) collaborative leadership

6) interprofessional conflict resolution

In Eric Dishman's TED talk, he speaks about the importance of collaborative care from the point of view of the patient. He outlines the importance of collaborative care to improve both cost efficiency and health outcomes.

Ask yourself:

- Do you feel that the competencies we aim for in IPE are transferable to real life clinical practice?

- What is this patient seeing as they watch the healthcare team?

Retrieval practice:

- What is the quadruple aim? Do you believe that IPE is a good way to address these aims?

Thorny questions:

- What do you think of Eric Dishman's comment that the doctor-patient relationship "is a relic of the past"?

- Do you think you need to "ego up" or "ego down" in an interdisciplinary team?

Designing IPE

Planning IPE has unique challenges to ensure that different professional groups meet their differing learning needs, and that all benefit from the experience. It is important to consider terminology used, level of knowledge and scope of practice for each group. Interaction is key. If different professions are not interacting, it is not IPE.

There are a number of different components to consider when designing an IPE activity:

1. Understand the learning outcomes of each professional group

    - It is useful to have a representative from each profession involved in planning the activity to ensure everyone's learning needs are met.

2. Use constructive alignment to ensure that learning outcomes are aligned with planned activity

3. Plan group-based activities

    - Remember that interaction between professional groups is the key to taking the activity from multi professional to inter-professional.

    - Some teaching activities lend themselves better to IPE than others. These include simulation, small group teaching and team-based learning.

4. Assessments should be based around professional skills, rather than clinical knowledge, as this can differ significantly between different professional groups

It has been suggested that the earlier that IPE can commence in the training of a professional, the more effective it will be. Pre-vocational students will graduate with a better understanding of the other professions they will be asked to collaborate with, and both respect and communication are enhanced. It is therefore encouraged that students are included in any IPE activities that may be planned in the clinical setting.

Ask yourself:

- How do you balance the differing aims/objectives of each of the professional groups?

- What teaching formats might suit IPE and what are the merits of each? I.e. Small group discussion vs simulation etc.

Retrieval practice:

- What key factors need to be considered to successfully plan an IPE activity?

Thorny questions:

- Can you truly plan an activity that equally considers the needs of all professional groups rather than relying on one discipline to serve as a learning "prop" for another?

- In the post COVID world, virtual or online training is becoming more accessible and even expected. How do you think IPE will fit into virtual learning?

Challenges in IPE

There are clearly practical complexities in designing IPE. Dr. Elise Paradis states that it feels like "you have to be a wizard of time, space and people" to make IPE a reality. There are multiple stake holders, each with their own clinical commitments, rosters, and perceptions regarding the need to engage in IPE at all.

There is also a certain level of discomfort with facilitating IPE activities. Some of this comes from facilitating disciplines that are different from our own. Having representatives from each attending discipline to both plan and facilitate can alleviate some of these challenges.

If representatives from each profession or discipline cannot be involved in planning an IPE activity, then another strategy is to invite a representative from each to act as a content expert to answer profession specific questions at the time of the activity.

It may also be useful to use an "inquisitive mind" attitude when giving feedback. Allow for reflective practice to draw answers out from participants, rather than trying to provide all the answers. As well as engaging learners in the feedback process, it also frees facilitators from having to understand the roles of each profession in depth or be a content expert in all areas.
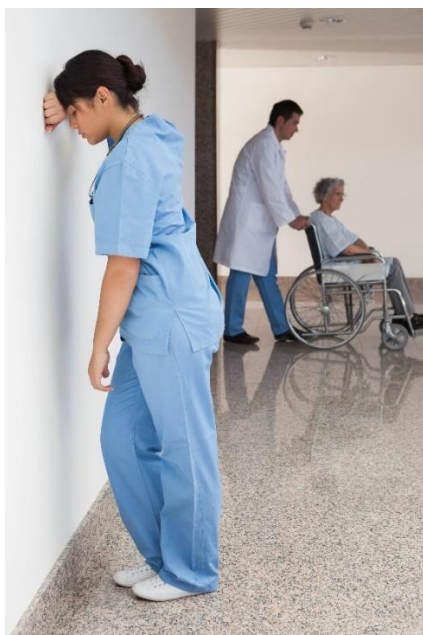
Bringing multiple professions together can also lead to traditional hierarchies playing out, leading to certain groups feeling either less empowered to speak up, or alternatively, to assume leadership by matter of habit or culture. It may be possible to level the playing field before a planned activity by using the "flipped classroom" approach. By providing participants with pre-activity resources, everyone attends with at least a basic understanding of the requisite knowledge, and the activity can focus on teamwork.

Ask yourself:

What IPE have you been involved in that didn't go so well - and why wasn't it a success?

Would you feel comfortable facilitating a group of professionals different from your own? Why, or why not?

Thorny questions:

- Can we measure the effect of IPE in clinical practice? Can we "study" or prove" its effectiveness in addressing the planned competencies?

- Do you think hierarchies or stereotypes in healthcare will get in the way of IPE? Or is IPE a good way to address these issues?

IPE in O&G

Take a look at these articles that show how IPE has been used in Obstetrics and Gynaecology, sometimes successfully and sometimes not.

Does training in obstetric emergencies improve neonatal outcome? (wiley.com)

Multiprofessional or interprofessional education in obstetrics and gynaecology (wiley.com)

Ask yourself:

- What interprofessional collaborative practice in your department would benefit from IPE?

- What format of IPE would work in your setting? What challenges would you face in planning it?

- How would you measure outcomes to ensure it is worthwhile?

Challenges in IPE

There are clearly practical complexities in designing IPE. Dr. Elise Paradis states that it feels like "you have to be a wizard of time, space and people" to make IPE a reality. There are multiple stake holders, each with their own clinical commitments, rosters, and perceptions regarding the need to engage in IPE at all.

Introduction to Interprofessional Education and Practice - YouTube (Rachel Grant- University of Ottawa). https://www.youtube.com/watch?reload=9&app=desktop&v=er9CoiMr5Oo&feature=youtu.be

Eric Dishman: Health care should be a team sport | TED Talk. (Start point 8m- finish point 10m45s).

Collaboration in Health Care: The Journey of an accidental expert. Joy Doll. https://youtu.be/qOV-5h0FpAo

National Center for Interprofessional Practice and Education | Bringing together practice and education in a new Nexus for better care, added value and healthier communities (nexusipe.org)

Framework for Action on Interprofessional Education & Collaborative Practice (who.int)

MedEdPORTAL (ipecollaborative.org)

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Version Register

Version	Date of Version	Pages revised / Brief Explanation of Revision
1	March 2023	Creation
2	Dec 2023	Formatting

Medical Education Advanced Training Module: Unit 7: Evidence-based medical education and leadership in education

Curriculum Objective

The Medical Education Advanced Training Module (ATM) aims to build on the Clinical Education Training Program to create a sound foundation in principles and understanding of educational theory and practice. The ATM is designed to be equivalent in exposure to a Postgraduate Certificate of Health Professional Education.

Learning Outcomes

By the end of this unit the trainee should be able to:

- Use principles of research analysis to evaluate educational research
- Develop educational research questions
- Discuss the utility of quantitative and qualitative research methodologies in educational research
- Outline contemporary leadership theory
- Discuss educational faculty development strategies

Clinical Education Training (CET) unit revision

Advanced trainees should revise the content of the following CET units:

- Unit 1 Adult learning theory
- Unit 4 Teaching and learning strategies
- Unit 8 Evaluation, appraisal, and assessment Logbook requirements

Assessment	Detail
Logbook	There are no logbook requirements for this module*

Advanced trainees should work though the accompanying resources and meet with their supervisor to discuss.

Learning Content

Introduction

All trainees are exposed to and become rapidly familiar with the concept of clinical research and evidence-based practice. The appraisal of research through journal club activities is a common experience for trainees and research exposure is a compulsory part of the RANZCOG training journey. The same approach ought to be taken in education – to quote Nuthalapaty *et al*: 'A rigorous, evidence-based approach to medical education has the potential to improve the student's competency as well as to directly benefit patients.'

Unfortunately, the concept of 'Educational epidemiology' is less familiar to most trainees – even those with an interest in the area. This unit aims to provide a brief overview of the framework of educational scholarship, to encourage the Advanced Trainee undertaking this unit to explore the richness of current educational research and to start to formulate their own research questions in a structured and logical way.

Additionally, this unit will cover an introduction to the concept of leadership in medical education, addressing a potential definition for that concept and looking at opportunities and barriers to leadership development in this field.

Evaluating education research

Any trainee will be familiar with the 'Evidence pyramid' – the descriptor used to explain the higher impact of certain research study methods over others.

Figure 1: The evidence hierarchy
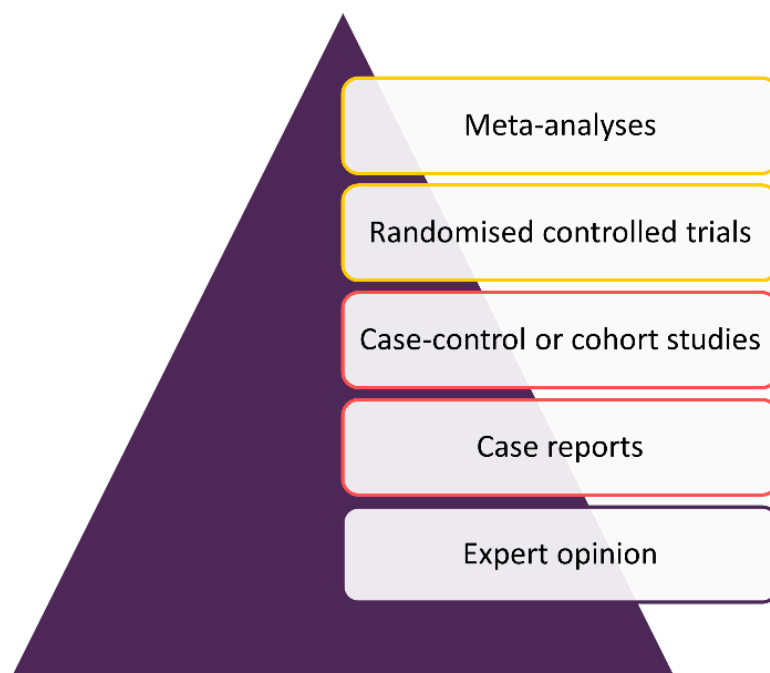
Research in medical education can utilize the same methods and study designs as clinical research. Table 1 shows some examples of education research studies using different study designs to investigate outcomes of obstetric simulation training. Nuthalapaty *et al* provide further examples of education research across different spheres of obstetrics and gynaecology.

Table 1: Examples from obstetric simulation of different study designs

Study type	Example
Meta-analysis	Brogaard L, Lauridsen K, Lofgren B et al. The effects of obstetric emergency team training on patient outcome: A systematic review and meta-analysis. Acta Obs Gyn 2021.
Randomized controlled trial	Fransen AF, van de Ven J, van Tetering AAC, Mol B, Oei SG. Simulation-based team training for multiprofessional obstetric care teams to improve patient outcome: a multicentre, cluster randomised controlled trial. BJOG 2012
Cohort study	Draycott T, Sibanda T, Owen L et al. Does training in obstetric emergencies improve neonatal outcome? BJOG 2006.
Case series	Walker L, Fetherstone C, McMurray A. Perceived changes in the knowledge and confidence of doctors and midwives to manage obstetric emergencies following completion of an Advanced Life Support in Obstetrics course in Australia. ANZJOG 2013
Expert opinion	Guise JM, Lowe NK, Deering S et al. Mobile In Situ Obstetric Emergency Simulation and Teamwork Training to Improve Maternal-Fetal Safety in Hospitals. Joint Commission Journal on Quality and Patient Safety 2010

Validity and reliability of assessment tools in education

Just as in any area of research, assessment tools used in educational research should not only appear valid but should be investigated for validity and reliability using statistically valid methods. As outlined by Barry et al, the following concepts apply to research in health education:

- Validity: refers to the accuracy or 'trustworthiness' of the scores produced by a particular assessment tool

    o content validity - the degree to which a survey's items cover the desired content area

    o construct validity - whether a scale accurately measures what it is designed to measure

    o criterion-related validity - the comparison of scores on a new instrument with the scores from another relevant and reputable scale

- Reliability: refers to a scale's consistency

    o test-test reliability - whether the test will return the same results when administered on separate occasions

    o inter-rater reliability - whether independent raters using the test will return the same result

Whilst validity of an assessment tool is a concept of vital importance when interrogating the literature, it is important to remember that there is no threshold at which an assessment is said to be valid and that tools must be judged on their applicability to the setting in which they are intended for use as much as by their validity and reliability.

Action point:

Appendix 1 provides a rubric to assist with the reading and analysis of education research. Read through the papers in Table 1 using the rubric to assist you and keeping in mind the validity and reliability of and instruments or tools described in the research. You should meet with your supervisor to discuss your reading. *Hint*: look at the paper by Walker *et al*. Where did their survey tool come from and how did they know it was valid?

Designing research in education

Research in education with the specific goal of evaluating the impact of a teaching intervention such as a course or lecture series is a rich area for the novice educator to explore. Potential methods that can be utilized for quantitative evaluation of education include self-reported changes in knowledge or behaviors, observed changes in skills, and improvements in student examination scores. These methods input data in either quantitative variables (for example percentage scores in quizzes pre and post a training course) or categorical variables (for example online vs face to face education).

As outlined in Unit 1, research in this area is considered in terms of its impact using the 4 Levels of Kirkpatrick, as shown in Table 2. Considering which of these levels is desirable and achievable before embarking on research in this area is advisable.

Table 1: Kirkpatrick levels of evaluation

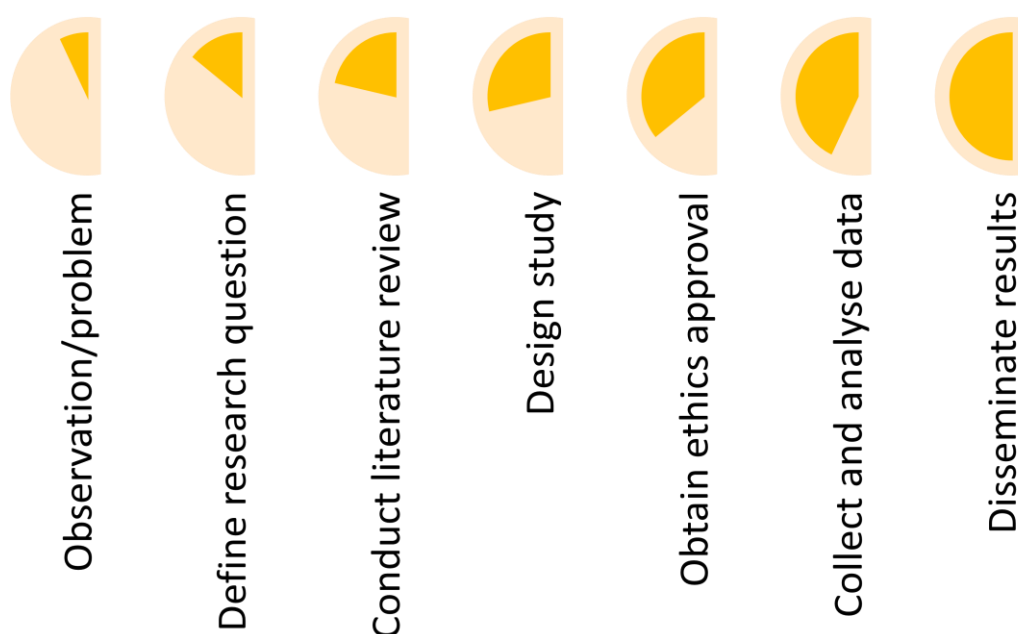| Level	Definition	Description
1	Reaction	How learners felt, for example self-rated changes in confidence
2	Learning	Changes in knowledge or skill levels, for example improvements in post course questionnaire scores compared to pre-course
3	Behaviour	Retention of improvements in knowledge or skill levels of learners, persisting through to the workplace following training
4	Impact	Changes in clinical outcomes following implementation of the training, for example changes in morbidity or mortality statistics

Action point:

Go back and look again at the five studies in Table 1. What Kirkpatrick level do the studies represent? Are they all the same?

Once you have decided *what* you want to research in education, the next step is to figure out *how* you want to research it. Steps in the creation of a valid quantitative research study are shown in Figure 2, and this is the approach with which trainees are most likely to be familiar. However, there is another approach available to the education researcher: qualitative research. We will examine qualitative research in more detail in the next section.

Figure 2: Steps in the quantitative educational research process.

Observation/problem · Define research question · Conduct literature review · Design study · Obtain ethics approval · Collect and analyse data · Disseminate results

Qualitative research in education

Education lends itself beautifully to the rich, exploratory approach of qualitative research, sometimes referred to as a 'wide and deep angle lens', in comparison to the 'narrow-angle lens' of quantitative research. Qualitative research takes the view that human behaviour is fluid, dynamic, and responsive to context. Qualitative research therefore seeks to derive the data from the subjects themselves, and not impose assumptions or control conditions. The researcher is the primary data-collection instrument, and the hypothesis is generated from the data rather than *a priori*.

Table 3 gives a brief overview of some basic concepts in qualitative research methods, with examples of relevant studies in medical education. Further information is provided in the Essential Reading resources listed for the unit.

Table 3: Examples of qualitative research methods

Method	Summary	Example study
Phenomenology	The researcher attempts to understand how an individual or group experience a particular phenomenon. The research goal is to 'walk a mile in the shoes' of the participants as they describe a specific situation or experience.	Williams K, Ramani S, Fraser B, Orlander J. Improving Bedside Teaching: Findings from a Focus Group Study of Learners. Acad Med 2008
Ethnography	The researcher attempts to describe the culture of a group of people, for example the attitudes, values and perspectives of a group.	De Senneville L, Brewin A, Thomas A, Calvert K. A qualitative analysis of adding kindness into the ISBAR handover tool. ANZJOG 2022
Grounded theory	Grounded theory research aims to generate and develop a theory from data collected. The researcher comes to the study with no pre-formed hypothesis and no anticipated outcome.	Pagram H, Bilszta J, Szabo R. Defining competency for Royal Australian and New Zealand College of Obstetricians and Gynaecologists training: An exploratory study of Victorian Integrated Training Program coordinators' understanding of competency. ANZJOG 2021

Leadership in education

The CanMEDS framework of physician competency includes Leadership as a whole domain. The physician as leader is expected to engage with other healthcare providers 'to contribute to a vision of a high-quality health care system'. The key concepts included in this role include engagement in the stewardship of resources, demonstration of leadership skills, quality improvement and leading change. The question is: how many of the physician as leader qualities are equally applicable to the educator as leader?

In their 2012 systematic review, Steinert, Naismith and Mann explore the evidence base underpinning faculty development initiatives designed to promote leadership in education. Their review looks at three separate leadership development strategies: (1) interventions in which leadership is the primary focus, (2) interventions in which leadership is a component of a broader focus on educational development; and (3) interventions in which leadership is a component of a broader focus on academic career development. The strategies for leadership development training included in the review ranged from single workshops through short courses to fellowships and longitudinal programs. Program objectives, i.e., specific aspects of leadership training included in some or all of these training interventions, included the following:

- Increasing leadership skills
- Stimulation of change in the institutional culture
- Increasing personal awareness
- Developing an appreciation for the role of leaders in complex organisations
- Fostering conceptual understanding of leadership
- Conflict management
- Budgeting and finance
- People management and performance issues
- Team building and mentoring
- Change management
- Strategic management and problem solving
- Quality improvement
- Promoting educational leadership in the context of provision of peer training
- Development of research and scholarship abilities
- Career planning
- Delivering effective presentations
- Gender and power issues

Despite the broad nature of the aims of these interventions, and the inclusion of 48 articles describing 41 studies of 35 interventions, the authors of this systemic review were unable to identify many K4 level outcomes. Participants in leadership training generally expressed high satisfaction, reported positive changes in their attitudes towards their organisations and self-reported improvements in knowledge and skills. The key features of successful training interventions were felt to be the use of multiple instructional methods, the role of experiential learning and reflective practice, the use of individual and group projects, the value of peers and the development of communities of practice, the role of mentorship and, crucially, institutional support. It was notable that the benefits of these programs were situated mostly in the zone of interpersonal relationship building and were not measurably related to program structure or duration. The authors recommend further work on the definitions of leadership in medical education, and the continued development of courses aiming to focus on this particular area.

Leadership in healthcare in general and education in particular remains an area where the focus needs to remain on evaluation of training, and establishment of clear goals. The establishment and nurturing of active communities of practice and mentoring strategies within the medical education community is likely to be of benefit to all stakeholders in this space.

Conclusion

Not everyone with an interest in medical education will also have an interest in research in this area or in faculty development towards a leadership role. However, as in clinical medicine, an understanding and appreciation of these roles within the education pantheon will improve communication and collaboration in the wider setting. The field of medical education research is rich and varied, and any trainee with a small interest in this area should be actively encouraged to pursue it.

Online resources for education leadership training

The following online courses may be of interest to the Advanced Trainee seeking further information or training regarding leadership skills in the field of medical education.

Academic Leaders Institute Competency Model | Faculty Development and Support | University of Colorado Boulder

Enhancing Programme Leadership | Advance HE (advance-he.ac.uk)

Essential reading

Bannard-Smith J, Bishop S, Gawne S, Halder N. Twelve tips for junior doctors interested in a career in medical education. Med Teach 2012;34:1012-1016.

Frank JR, Snell L, Sherbino J, editors. CanMEDS 2015 Physician Competency Framework. Ottawa: Royal College of Physicians and Surgeons of Canada; 2015.

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Brogaard L, Glerup Lauridsen K, Løfgren B, et al. The effects of obstetric emergency team training on patient outcome: A systematic review and meta-analysis. Acta Obstet Gynecol Scand. 2022;101:25–36. https://doi.org/10.1111/aogs.14263

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Fransen AF, van de Ven J, Schuit E, van Tetering AAC, Mol BW, Oei SG. Simulation-based team training for multi-professional obstetric care teams to improve patient outcome: a multicentre, cluster randomised controlled trial. BJOG 2017;124:641–650.

Guise JM, Lowe NK, Deering S et al. Mobile In Situ Obstetric Emergency Simulation and Teamwork Training to Improve Maternal-Fetal Safety in Hospitals. Joint Commission Journal on Quality and Patient Safety 2010;36(10):443-453.

Pagram H, Bilszta J, Szabo R. Defining competency for Royal Australian and New Zealand College of Obstetricians and Gynaecologists training: An exploratory study of Victorian Integrated Training Program coordinators' understanding of competency. ANZJOG 2021

Walker L, Fetherstone C, McMurray A. Perceived changes in the knowledge and confidence of doctors and midwives to manage obstetric emergencies following completion of an Advanced Life Support in Obstetrics course in Australia. ANZJOG 2013; 53: 525–531.

Williams K, Ramani S, Fraser B, Orlander J. Improving Bedside Teaching: Findings from a Focus Group Study of Learners. Acad Med 2008;83:257-264.

Version Register

Version	Date of Version	Pages revised / Brief Explanation of Revision
1	March 2023	Creation
2	Dec 2023	Formatting