



Health  
and Human  
Services

# **BASIC MANUAL**

# **A TRAINING MANUAL FOR SIMULATION EDUCATORS**

Equipping Victoria's Health and Human Service professionals with the skills and knowledge to deliver simulation-based education.



# Preface

In 2007, St Vincent's Hospital (Melbourne) was commissioned by the Department of Health and Human Services (DHHS) to design, develop and implement a training program for clinical skills trainers within Victorian Hospitals. The project aimed to equip Victorian health professionals, specifically hospital clinical educators, with the skills and knowledge required to deliver simulation-based clinical skills training.

Two courses were developed with supporting manuals. These manuals have been found to be useful as stand-alone resources for simulation educators to refer to in designing and teaching simulation-based education. In 2017, the Victorian Simulation Alliance (VSA), commissioned Health Education Innovative Solutions (HEIS) to update and contemporise the original manuals so that they would continue to be useful resources for all Victorian simulation educators.

## Acknowledgements

VSA would like to acknowledge the contributions of:

- The original authors from the St Vincent's Hospital (Melbourne) project team, led by Tess Vawser including; Robert O'Brien, Julian Van Dijk and Anastasia Novella
- Debbie Paltridge, Director, Health Education Innovative Solutions (HEIS)
- Debra Kiegaldie from Holmesglen Institute for additional material and editing of the manuals

Every effort has been made to provide the reader with the most current literature references.

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# Table of Contents

Preface .....	1
Acknowledgements	1
Table of Contents	2
Symbols throughout this manual:	3
Module 1: Teaching for Learning .....	4
1.1: Understanding “the Terms”	4
1.2: Teaching for Learning	22
1.3: Experiential Learning	30
Module 2. Teaching Methods.....	35
2.1: Small Group Learning	35
2.2: Scenario-based learning	47
2.3: Teaching Clinical Skills	53
Module 3: Giving Effective Feedback.....	62
3.1 Definition	62
3.2 Characteristics of Effective Feedback	63
3.3 A model for giving feedback	66
Module 4: Interprofessional Education .....	72
4.1 Introduction	72
4.2 Definitions and theoretical basis	73
4.3 Outcomes of IPE	75
4.4 Characteristics of IPE	76
4.5 Requirements for successful IPE	77
4.6 Barriers to successful IPE	78
Module 5: Assessment and Evaluation .....	82
5.1 Assessment	82
5.2: Evaluation	94

Module 6. Designing a Course .....	107
6.1 Target audience	107
6.2 Needs analysis	107
6.3 Aims and Objectives	109
6.4 Teaching and learning strategies	110
6.5 Session/Course Design	111
6.6 Resources	111
6.7 Staffing requirements	111
6.8 Assessment	111
6.9 Evaluation	112

Symbols used throughout this manual:

			
<b>Reading</b>	<b>References</b>	<b>Notes</b>	<b>Tools</b>



# Module 1: Teaching for Learning

## 1.1: Understanding “the Terms”

Terminology in the area of both health professional education and specifically the area of clinical skills and simulation training can be very confusing. It is important to provide some clarity to assist in the evaluation of current literature and to facilitate and promote discussion amongst colleagues. To assist in this, the following glossary has been established. Terms have been grouped around topic areas to facilitate linkages. Where appropriate, a discussion of the debate surrounding a term has been included. Definitions have been referenced and these references are found at the end of this section and may be of further interest to the reader.

For additional simulation specific terminology, the following reference is recommended:

- Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology & Concepts Working Group. (2016). *Healthcare Simulation Dictionary*. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. AHRQ Publication No. 16(17)-0043.

Table 1 provides you with a full glossary of educational terms for your reference.

**Table 1:** Full glossary of educational terms

Term	Definition	Reference
<b>Education</b>		
Adult Learning/Andragogy	This is a term first introduced by Malcolm Knowles and refers to “the art and science of helping adults to learn”. Along with this definition, Knowles outlined 5 assumptions of andragogy and later developed seven principles of adult learning which have strongly influenced educational practice.	Knowles, M (1973) <i>The Adult Learner, A neglected Species</i> . Gulf Publishing Company, Houston. Knowles, M (1980). <i>The Modern Practice of Adult Education: from Pedagogy to Andragogy (2e)</i> Cambridge Books: New York.
Pedagogy	Originally this term was used to describe the science of teaching children. Theories purported that teaching students was a passive process and pedagogy described this method. As education of children has evolved to an active process where the teacher is no longer the imparter of all knowledge, the term pedagogy is now used more broadly to describe the study of teaching methods. There has been some controversy between the terms andragogy and pedagogy with many believing that little difference exists in how adults and children learn.	Karbuch, M. (2017). Awesome chart on “Pedagogy VS Andragogy”. Retrieved from <a href="http://www.educatorstechnology.com/2013/05/awesome-chart-on-pedagogy-vs-andragogy.html">http://www.educatorstechnology.com/2013/05/awesome-chart-on-pedagogy-vs-andragogy.html</a>
Learning Objective	<p>Statements that are used to describe the intended change in behaviour of a learner following a learning activity.</p> <p>They are sometimes referred to as behavioural objectives or learning outcomes.</p> <p>Written correctly they should be specific, measurable, achievable, relevant and timely/time bound (SMART acronym first coined by Doran in 1981).</p> <p>Learning objectives are important for the:</p> <ul style="list-style-type: none"> <li>• Learner, in providing clarity as to the purpose of the educational experience.</li> <li>• Teacher, in providing a strategy to align goals, teaching and learning strategies, assessment and evaluation.</li> </ul>	<p>Chapter 21: Study Guides, p196. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i>. Elsevier Churchill Livingstone: London.</p> <p>Doran, G. T. (1981). "There's a S.M.A.R.T. Way to Write Management's Goals and Objectives", <i>Management Review</i>, 70 (11): 35-36.</p> <p>Bloom, B.S. (Ed.). Engelhart, M.D., Furst, E.J., Hill, W.H., Krathwohl, D.R. (1956). <i>Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain</i>. New York: David McKay Colnc</p>

Term	Definition	Reference
<b>Education</b>		
Instructional Design	The process by which the instructor determines the learning required, uses contemporary learning theory to determine the best strategies to assist the learner to achieve the desired outcomes and assesses the achievement of these outcomes. There are approximately 60 different types of instructional design approaches, however the three most commonly acknowledged are the behaviourist, cognitive and constructivist approaches (see below).	Chapter 20: Instructional Design+, p186. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i> . Elsevier Churchill Livingstone: London.
Behaviourist	The Behaviourist approach to instructional design promotes knowledge acquisition and automated response formation. This approach advocates stimulus/response and reinforcement strategies. It also employs strategies such as rote learning and didactic teaching. This approach is often effective for the mastery of content but is not appropriate for more complex skill acquisition.	Ertmer P. & Newby, T., Behaviourism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. <i>Performance Improvement Quarterly</i> .1993:6(4),50-70
Cognitive	Cognitive instructional design theory relies on restructuring understanding through repetition, reinforcement and feedback. It is based on the theory that people have "schema" or understandings of certain concepts etc., and these schemata need to be modified for new skill acquisition. These strategies are useful for teaching the application and adaptation of theory and practices to novel situations, including the development of problem-solving techniques.	Ertmer P. & Newby, T., Behaviourism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. <i>Performance Improvement Quarterly</i> .1993:6(4),50-70
Constructivism	<p><b>Constructivist</b> strategies advocate real-world, case-based learning environments, reflective practice, context and content-dependent knowledge construction, and supports social negotiation rather than competition among learners. Tasks demand higher levels of processing and problem solving.</p> <p>Constructivist teaching methods such as high fidelity simulation are especially suited to dealing with ill-defined problems through reflection-in-action. This approach is more suited to engaging and meeting the learning needs of experienced learners.</p> <p>There is greater scope for integrating complex skill development such as teamwork, leadership, effective communication, and decision-making into the curriculum.</p>	Ertmer P. & Newby, T. Behaviourism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. <i>Performance Improvement Quarterly</i> .1993:6(4),50-70



Term	Definition	Reference
<b>Education</b>		
	In essence, the constructivist approach to instructional design promotes transference of knowledge, skills and attitudes to new situations. It acknowledges pre-existing knowledge and skills and builds upon this foundation.	
Curriculum	<p>The written plan or framework for the overall course of study/learning. Has elements of content, teaching and learning strategies, assessment and evaluation, and there should be alignment between these elements.</p> <p>Often people refer to the “explicit” curriculum which is documented and agreed upon by a group of experts and the “hidden curriculum” which is the unintentional imparting of beliefs, attitudes and values from a teacher to a learner.</p>	<p>Cantillon, P Hutchinson, L and Wood D. <i>ABC of Learning and Teaching in Medicine</i>. (2003). BMJ Publishing Group: London.</p> <p>Gofton and Regehr (2006). What we don't know we are teaching: unveiling the hidden curriculum. <i>Clin Orthop Relat Res</i>. Aug;449:20-7</p>
Learner Centred	Learner centred approach (also known as student centred) puts the learner in the pivotal position and encourages the learner to take responsibility for their own learning by being an active participant in the process. The learner is involved in determining the learning objectives, planning the learning opportunities and in exploring and reflecting throughout the leaning activities.	<p>Weimer, M. <i>Learner Centered Teaching</i>. (2002). Jossey-Bass: New York</p> <p>Baeten, M, Dochy, F, Sturyven, K, Parmentier, E and Vanderbruggen, A. (2016) Student-centred learning environments: an investigation into student teachers' instructional preferences and approaches to learning. <i>Learning Environ Res</i>, 19:43–62</p>
Teaching Plan	This is a written outline of the goals and objectives of a teaching episode, the teaching strategies to be used and the assessment and evaluation methods for this period of instruction. Planning is one of the most important activities for an educator. It provides the educator with a framework for evaluating the learning experience.	

Term	Definition	Reference
<b>Education</b>		
Experiential Learning	Used to describe learning based on Experience. There have been several models including that by Kolb, which describes a cyclical process in which learners experience, test, reflect, and conceptualise.	<p>Cantillon, P Hutchinson, L and Wood D. (2013) <i>ABC of Learning and Teaching in Medicine</i>. BMJ Publishing Group: London.</p> <p>Kolb, D. A. (1984). <i>Experiential learning: Experience as the source of learning and development (Vol. 1)</i>. Englewood Cliffs, NJ: Prentice-Hall.</p>
<b>Uni</b> professional Education	Where members (or students) of a single profession learn together.	Freeth, D., Hammick, M., Reeves, S., Koppel, I., & Barr, H. (2005). <i>Effective Interprofessional Education: Development, Delivery &amp; Evaluation</i> . Oxford UK: Blackwell Publishing.
<b>Multip</b> rofessional Education	Where members (or students) of two or more professions learn side by side; in other words, parallel rather than interactive learning.	Barr, H., Koppel, I., Reeves, S., Hammick, M., & Freeth, D. (2005). <i>Effective Interprofessional Education: Argument, Assumption &amp; Evidence</i> . Oxford, UK: Blackwell Publishing.

Term	Definition	Reference
<b>Education</b>		
<b>Interprofessional Education</b>	<p>Occasions were two or more professions learn with, from and about each other to improve collaboration and quality of care (CAIPE, 2002, p.2)</p> <p>The aim is to “collaborate as a team with a shared purpose, goal, and mutual respect” (Lopreiato et al, 2016).</p>	<p>CAIPE. (2002). Defining IPE. Retrieved from <a href="http://caipe.org.uk/resources/defining-ipe/">http://caipe.org.uk/resources/defining-ipe/</a></p> <p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. AHRQ Publication No. 16(17)-0043.</p>
<b>Interprofessional Learning</b>	<p>Learning arising from interaction between members (or students) of two or more professions. This may be a product of IPE or happen spontaneously in the workplace or in education sessions.</p>	<p>Freeth, D., Hammick, M., Reeves, S., Koppel, I., &amp; Barr, H. (2005). <i>Effective Interprofessional Education: Development, Delivery &amp; Evaluation</i>. Oxford UK: Blackwell Publishing.</p>
<b>Intraprofessional Education</b>	<p>Where members of the same profession learn together. This could be learners from one profession but at difference levels e.g. 2<sup>nd</sup> year undergraduate nurses with 3<sup>rd</sup> year undergraduate nurses or Division 1 nurses with Division 2 nurses.</p>	<p>Lapkin, S., Levett-Jones, T., &amp; Gilligan, C. (2013). A systematic review of the effectiveness of interprofessional education in health professional programs. <i>Nurse Education Today</i>, 33. doi:10.1016/j.nedt.2011.11.006</p>

Term	Definition	Reference
<b>Education</b>		
<b>Trans</b> professional Education	An emerging term not fully explained nor analysed in the literature. “A framework for professionals which allows for the sharing and integration of expertise among team members where members of a single profession learn together” (Bell, Corfield, Davies, & Richardson, 2010, p.143) or, “...teamwork that includes non-professional health workers that might be of even greater importance for health-system performance, especially the teamwork of professionals with basic and ancillary health workers, administrators and managers, policy makers, and leaders of the local community” (Frenk et al., 2010, p.1944).	Bell, A., Corfield, M., Davies, J., & Richardson, N. (2010). Collaborative transdisciplinary intervention in early years - putting theory into practice. <i>Child Care Health Dev</i> , 36, 142-148.  Frenk, J., Chen, L., Bhutta, Z., Cohen, J., Crisp, N., Evans, T., . . . Serwadda, D. (2010). Health professionals for a new century: transforming education to strengthen health systems in in interdependent world. <i>The Lancet</i> , 376, 1923 - 1958. doi:10.1016/S0140-6736(10)61854-5
<b>Multidisciplinary</b> education	Education between different branches of the same profession or between academic disciplines” for example: a physician and a surgeon.	Barr, H., & Low, H. (2013). <i>Introducing Interprofessional Education</i> (pp. 1-31). Retrieved from <a href="http://caipe.org.uk/silo/files/introducing-interprofessional-education.pdf">http://caipe.org.uk/silo/files/introducing-interprofessional-education.pdf</a>
<b>Assessment</b>		
Assessment	The process of making a judgement about the level of knowledge, skills and/or attitudes of a learner.  Some countries use the term evaluation to describe the assessment of a learner and discuss formative and summative evaluation. However, more commonly assessment is used in regards to the learner and evaluation to the educational program and this terminology will be used in this manual.	Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 1. <i>Medical Teacher</i> . 24 ;( 2):216-219.

Term	Definition	Reference
<b>Education</b>		
Formative Assessment	<p>This assessment is ongoing in nature and designed to assist the learner to improve their performance. It should include feedback to the learner as part of this developmental process.</p> <p>It is aimed at providing information to assist the learner to attain their goals.</p>	<p>Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 1. <i>Medical Teacher</i>. 24 ;( 2):216-219.</p> <p>Newble D and Cannon R. (2001). <i>A handbook for medical teachers</i>. 4th Ed. Kluwer Academic Publications, Netherlands.</p>
Summative Assessment	<p>Performed at the conclusion of a learning episode, with the purpose of ranking the learners' performance against a standard. Should be objective, reliable, valid and reproducible. Some of the purported uses of summative assessment are:</p> <ul style="list-style-type: none"> <li>• Judging mastery of knowledge and skills</li> <li>• Ranking learners</li> <li>• Allowing progression to the next level within a course</li> <li>• Measuring improvement over time</li> <li>• Diagnosing learners with difficulties</li> <li>• Setting standards</li> <li>• Quality control for the public</li> <li>• Gilding learners</li> </ul>	<p>Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 1. <i>Medical Teacher</i>. 24 ;( 2):216-219.</p> <p>Newble D and Cannon R. (2001). <i>A handbook for medical teachers</i>. 4th Ed. Kluwer Academic Publications, Netherlands.</p> <p>Van der Gluten C, Schuwirth L, Scheele F, Driessen E, Hodges B. (2010) The assessment of professional competence: building blocks for theory development. <i>Best Pract Res Clin Obstet Gynaecol</i>. 2010 Dec;24(6):703-19</p>
Self-Assessment	<p>This involves the learner assessing their own performance. Self-assessment is a type of structured reflection in which the learner reviews their performance against a set of criteria and makes judgements about their own performance.</p>	<p>Newble D and Cannon R. (2001). <i>A handbook for medical teachers</i>. 4th Ed. Kluwer Academic Publications, Netherlands.</p>

Term	Definition	Reference
<b>Education</b>		
Peer Assessment	The use of the learner's peers (or other learners within the group) to assess the performance of each other rather than a facilitator/ instructor. Can also be called peer review or peer evaluation.	Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 5. <i>Medical Teacher</i> . 24 ;( 6):658-660.
Competence	Competence can be defined as the acquisition of a satisfactory level of relevant knowledge and skills, including interpersonal and technical components that allow a person to perform a task at a given time. A learner can be judged competent at the time of an assessment and yet fail to perform in real life.	Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 1. <i>Medical Teacher</i> . 24;(2):216-219.  Khan, K & Ramachandran, S. (2012) Conceptual framework for performance assessment: Competency, competence and performance in the context of assessments in healthcare – Deciphering the terminology. <i>Medical Teacher</i> , 34;11; 920-928
Performance	Performance is what is done in real life under varying conditions and times. There can be misunderstandings in the use of the terms competence and performance and in their application in the assessment arena. Competence should be seen as a point on the performance spectrum.	Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 5. <i>Medical Teacher</i> . 24;(6):658-660.  Khan, K & Ramachandran, S. (2012) Conceptual framework for performance assessment: Competency, competence and performance in the context of assessments in healthcare – Deciphering the terminology. <i>Medical Teacher</i> , 34;11; 920-928

Term	Definition	Reference
<b>Education</b>		
Feedback	Feedback is a type of formative assessment aimed at improving the learner's performance in the future by providing information relating to their goals. Most authors on feedback in clinical education quote Ende's (1983) description of feedback in which he suggests the closer to the performance that the feedback is given the more valuable it will be in influencing the learner's subsequent actions. There are specific skills in giving feedback (discussed later in this manual).	Peyton, J. <i>Teaching and learning in medical practice</i> . (1998). Manticore Europe Ltd.  Ende J. Feedback in clinical medical education. <i>JAMA</i> . 1983;250(6):777-781
Evaluation	This is the process undertaken by educators to determine the efficacy and relevance of their educational programs. There is some confusion between the terms evaluation and assessment.  Assessment is usually used to describe the process of judging the performance of the learner, whereas evaluation is used to describe the process for judging the program. The student should be an active participant in the program evaluation.	Cantillon, P Hutchinson, L and Wood D. (2003). <i>ABC of Learning and Teaching in Medicine</i> . BMJ Publishing Group: London.
<b>Clinical Skills</b>		
Clinical Skills	The term clinical skill encompasses a wide range of tasks required for the assessment and management of patients, e.g. taking a history, inserting an IV, communication. Each skill requires knowledge, skill and attitude to perform.	Chapter 8: Teaching in the clinical skills centre, p66. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i> . Elsevier Churchill Livingstone: London.
Clinical Skills Laboratory	An environment specifically designed or designated to allow learners to practise clinical skills without jeopardising patient care. Clinical Skills Laboratories may be as simple as a spare ward area or tutorial room, or as complex as a purpose built facility	Chapter 8: Teaching in the clinical skills centre, p66. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i> . Elsevier Churchill Livingstone: London.

Term	Definition	Reference
<b>Education</b>		
Part Task Trainer	A part task trainer is a model designed to allow the practise of a specific skill or part of a task. An example of this is an intravenous (IV) arm – the health professional can learn the technical skill of inserting a cannula using the anatomically correct plastic model arm. This is as compared to a full body manikin. In effect, it can be described as a simple simulator (see definition below) however this causes some confusion as the term simulator is used mainly to describe the higher tech manikins.	Chapter 8: Teaching in the clinical skills centre, p66, and Chapter 23: Simulators and simulation based medical education. p211. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i> . Elsevier Churchill Livingstone: London
Scenario Based Learning	This is the use of clinical scenarios (or cases) to contextualise skills learning sometimes referred to as case based learning). It involves the learner working through a clinical situation using their critical thinking and problem solving skills to answer questions such as diagnosis, management etc. It is an approach to learning that is used widely in communication skills teaching and simulation.	Massey University, (n.d.). Retrieved from <a href="https://www.massey.ac.nz/massey/fms/AVC%20Academic/Teaching%20and%20Learning%20Centres/Scenario-based-learning.pdf?ED80BF17A1416E89764E01BC4E869FE2">https://www.massey.ac.nz/massey/fms/AVC%20Academic/Teaching%20and%20Learning%20Centres/Scenario-based-learning.pdf?ED80BF17A1416E89764E01BC4E869FE2</a>  Patel, K and Tokhy, O. (2017). Scenario-based teaching in undergraduate medical education. <i>Advances in Medical Education and Practice</i> . Volume 8 Pages 9—10.
Role Play	A teaching strategy where learners act out pre-determined roles in a real world scenario.  Often used to illustrate particular points of learning in the affective domain e.g. communication skills.	Billings, D, (2012). Role-Play Revisited. <i>The Journal of Continuing Education in Nursing</i> ; Vol 43; 5, 201-2.



Term	Definition	Reference
<b>Simulation</b>		
Simulation	<p>Any teaching activity in which the real life situation is “simulated”. Simulation is an alternative to real patient involvement. Simulation may involve the use of actors, learners, manikins or part task trainers to mimic the real life situation. Simulation may also be a paper based activity.</p> <p>“A technique that creates a situation or environment to allow persons to experience a representation of a real event for the purpose of practise, learning, evaluation, testing, or to gain understanding of systems or human actions” (Lopreiato et al, 2016, p34).</p>	<p>Chapter 23: Simulators and simulation based medical education, p211. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i>. Elsevier Churchill Livingstone: London.</p> <p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. <i>AHRQ Publication No. 16(17)-0043</i>.</p> <p>Swanwick, T. (Ed). (2014). <i>Understanding Medical Education: Evidence, Theory and Practice</i>. John Wiley &amp; Sons, Incorporated.</p>
Simulator	<p>This term is used to describe educational tools (devices, systems etc.) which are used in simulation based education. They are often divided into low tech and high tech dependent on the level of technology involved in the tool. The degree of technology is also linked to the fidelity of the tool (see definition below).</p>	<p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. <i>AHRQ Publication No. 16(17)-0043</i>.</p>

Term	Definition	Reference
<b>Simulation</b>		
Simulated Patient	<p>The use of specially trained actors or volunteers to simulate “real” patients in the training environment. Also called standardised patients in the literature. They are commonly used in nursing, medical and allied health university courses for assessment and training purposes.</p> <p>“A person who has been carefully coached to simulate an actual patient so accurately that the simulation cannot be detected by a skilled clinician.” (Lopreiato, et al, 2016, p37). Actors need to be specially trained not only in the condition they are to act but also in the interaction with the learner.</p>	<p>Chapter 8: Teaching in the clinical skills centre, p66. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i>. Elsevier Churchill Livingstone: London.</p> <p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. <i>AHRQ Publication</i> No. 16(17)-0043.</p>
Hybrid Simulation	<p>The combining of two or more types of simulation in order to maximize fidelity for the learner e.g. the use of a part task trainer and a simulated patient. This is discussed more in module 2.3 Clinical Skills.</p>	<p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. <i>AHRQ Publication</i> No. 16(17)-0043.</p>

Term	Definition	Reference
<b>Simulation</b>		
Virtual Reality (VR)	<p>This term is used to describe activities in which simulations take place in a computer simulated environment. Advances in VR have included haptics in which the learner experiences not only a visual simulation but also a “tactile” or proprioceptive simulation.</p> <p>“A wide variety of computer-based applications commonly associated with immersive, highly visual, 3D characteristics that allow the participant to look about and navigate within a seemingly real or physical world.” (Lopreiato et al, 2016, p 41).</p>	<p>Chapter 23: Simulators and simulation based medical education, p211. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i>. Elsevier Churchill Livingstone: London.</p> <p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. <i>AHRQ Publication No. 16(17)-0043</i>.</p>
Debriefing	<p>This term is used to describe the discussion that takes place post simulation, “A formal, collaborative, reflective process within the simulation learning activity” (Lopreiato et al, 2016, p 9).</p> <p>It is a crucial element of simulations using both manikins and/or simulated patients are used. It is a forum for reflection, feedback and review of learner performance.</p>	<p>Chapter 23: Simulators and simulation based medical education, p211. In Dent, J and Harden R. (2005). <i>A practical Guide for Medical Teachers</i>. Elsevier Churchill Livingstone: London.</p> <p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. <i>AHRQ Publication No. 16(17)-0043</i>.</p>

Term	Definition	Reference
<b>Simulation</b>		
Fidelity	<p>The term is used to refer to the realism of either the manikin or a training experience/situation.</p> <p>The extent to which the appearance and/or behaviour of the simulation or simulator replicates the appearance and behaviour of the real system. "This includes physical, psychological and environmental elements." Lopreiato et al, 2016, p12).</p>	<p>Beaubien, J &amp; Baker, D. (2004). The use of simulation for training teamwork in skills in health care: how low can you go? <i>Quality and Safety in Health Care</i>. 13, 151-156.</p> <p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. AHRQ Publication No. 16(17)-0043.</p>
Moulage	<p>This refers to the make-up and or moulds applied to the simulated patient in order to represent a clinical condition, (e.g. bleeding, bruising, sweating, burns etc.), disease or aging. Well applied moulage assists in enhancing the psychological fidelity of a simulation.</p>	<p>Lopreiato J O (Ed.), Downing D, Gammon W, Lioce L, Sittner B, Slot V, Spain A E (Assoc. Eds.), and the Terminology &amp; Concepts Working Group. (2016). <i>Healthcare Simulation Dictionary</i>. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. AHRQ Publication No. 16(17)-0043.</p>



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## 1.2: Teaching for Learning

### 1.2.1 What is Learning and the domains of Learning?

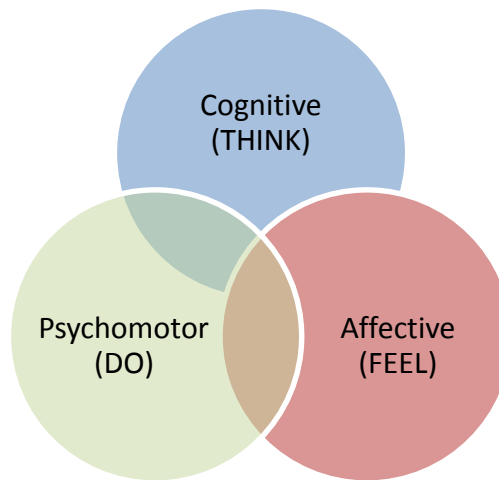
There are a number of definitions of learning in the literature, including:

- “the act of gaining knowledge of something or of how to do something” (Dictionary of Medical Terms, 2005, p219).
- “a change in behavior that is due to experience” (Lachman, 1997)
- “the process of gaining knowledge and expertise” (Knowles, 1973)
- “a process that leads to change, which occurs as a result of experience and increases the potential for improved performance and future learning” (Ambrose et al, 2010, p.3)
- “changes in the behavior of an organism that result from regularities in the environment of the organism” (De Houwer et al, 2013).
- As clinical teachers we are interested in ensuring acquisition of learning and transfer of that learning from our courses to actual clinical practice. We want our learners to be able to know or do something different as a result of our courses.
- In the 1950s, an educationalist Benjamin Bloom defined three domains of learning:
- Cognitive: (Knowledge or intellectual capability) - “Think” – e.g. anatomy, physiology etc.
- Affective: (Attitude or feelings, emotion, behaviours, values) - “Feel” – e.g. show empathy to patients, recognise the impact of a diagnosis on a patient’s emotions
- Psychomotor: (Skills – manual or physical) “- Do” – e.g. insert an intravenous cannula, suture, taking a blood pressure.

These three domains are important to consider when designing courses. What type of learning do you want for your learners? Do you want them to be able to know something new, do something new, or do you want them to acquire new attitudes or behaviours. In reality we often want learning from across the three domains. The domains are often represented as overlapping circles to indicate, for example, that when you learn something from one domain there is often associated learning required in another of the domains. See Figure 1.



**Figure 1:** Domains of learning



Bloom went on to define taxonomies for the three domains which represent different levels of complexity in the learning of each domain. (Bloom, 1956). The cognitive taxonomy was later revised by Anderson and Krathwohl (2001), the psychomotor by Simpson (1972) and the affective by Krathwohl, Bloom, and Masia, (1973). Table 2 presents each taxonomy as they are commonly used, from lowest level to highest level:

**Table 2:** The three domains of learning

Cognitive Domain	Psychomotor Domain	Affective Domain
Remembering	Imitation	Receiving
Understanding	Manipulation	Responding
Applying	Develop precision	Valuing
Analysing	Articulation	Organising
Evaluating	Naturalisation	Internalising
Creating		

The taxonomies are useful in helping teachers to determine the level of learning within the domain that they are wanting for their learners. They can be used to assist in setting learning objectives/outcomes, with specific verbs indicating the level of learning required. These in turn are then used to determine the appropriate learning and teaching strategies to achieve the desired level of learning. For example, if remembering is required for anatomy then reading a textbook may be the appropriate activity, whereas if evaluating is required then an x-ray of a particular patient’s anatomy and requirement to diagnose the

condition requires knowledge, understanding, application and analysis. Examples of teaching and learning strategies for each domain are provided in the Table 3:

**Table 3:** Teaching and learning strategies

Cognitive Domain	Psychomotor Domain	Affective Domain
Reading	One to one instruction	Small group discussion
Lecture	Demonstration	One to one instruction
Small group discussion	Return demonstration	Role Playing
One to one instruction	Simulation	Rehearsal
Simulation	Self-instruction/practise	Role Modeling
Problem solving		Self-reflection
Journal Club		

In addition, teachers can ask questions at different levels of bloom’s cognitive taxonomy dependent on the learning required, and the level at which the learner enters the learning environment. For example, “what is the innervation of the ulnar nerve?” would be a question at the remembering level of Bloom’s taxonomy, however the question “which nerve is likely to be affected by this patient’s condition?” would be at the analysis level.

### 1.2.2 What is needed for learning?

The science of learning has been studied for some time and the literature presents a number of factors that impact on learning. It is important for teachers to understand each element and how they influence learning. A summary from the current literature is presented to assist your understanding of what is needed for learning.

#### **Prior Knowledge and Experience**

Learners come to the learning experience with a range of prior knowledge and experience. This prior knowledge/experience influences the learner’s ability “to remember, reason, solve problems, and acquire new knowledge” (Bransford et al, 2000, p10). New knowledge needs to be built from existing knowledge and this can be a barrier where a learner’s prior knowledge or experience is incorrect. Teachers need to explore prior knowledge and experiences in order to identify if there are any anomalies with the new learning required.

#### **Attention**

Attention is necessary for learning and we know that the brain’s ability to pay attention for long periods of time is limited (Restaino, 2011, p199). Attention needs to be stimulated

and this can be done by varying the activity e.g. “by providing content in segments, eliciting emotion to capture and maintain attention, using visuals, explaining main concepts before supporting details, and repeating important points, we can help students remember information” (Restaino, 2011, p200).

## **Engagement**

The issue of student engagement has been widely studied (Seidel, 2007). Engagement refers to students' active participation in the learning process from identifying learning gaps, to goal setting, to actively engaging in learning activities and self-reflection. We know that activity is necessary to maintain attention. Activity involves interaction with content, teacher or peers. As clinical teachers we need to identify ways to ensure our learners are actively engaged rather than passive recipients (this concept is described in the glossary under the term “learner centered”).

## **Memory**

Memory plays an important role in learning. We know that “learning changes the physical structure of the brain and, with it, the functional organization of the brain” (Bransford et al, 2000, p114). Research also informs us that “learners need to be able to transfer new concepts, skills and attitudes to their long term memory. In order to do this, they need opportunities to practise retrieving information which has been shown to strengthen neural connections (Dunlosky et al, 2013).

Additionally, when learning new things, “memory and recall are strengthened by frequency and recency. The more we practise and rehearse something new and the more recently we have practised, the easier it is for our brain to transmit these experiences efficiently and store them for ready access later.” (Ford, 2011).

## **Motivation**

Motivation is the driving force behind the time learners are willing to engage in learning activities. Motivation is strongly influenced by the learner's perception of the relevance of the learning to them or their goals. Motivation is often categorized into intrinsic motivation (internal to the person e.g. drive to succeed) and extrinsic motivation (external factors e.g. exams). Intrinsic motivation has been associated with deeper learning than extrinsic; “if the learner finds the learning task to be relevant, intrinsic motivation is more likely, leading to deeper learning with more links to prior knowledge, and a greater conceptual understanding” (Pasquale, 2013)

## Feedback

Feedback has been considered one of the most powerful influences on learning however “this impact can be either positive or negative” (Hattie and Timperley, 2007, p81). There is much in the literature regarding what is needed in order for feedback be effective;

- two-way – a dialogue that involves the learner
- balanced - what the learner is doing well to reinforce this behavior and what the learner could improve and how
- specific – nonspecific feedback has little impact on learning
- related to goals – the learner wants to know how their performance is perceived in regards to their goals
- timely – as close to the event as possible to allow for recall and self-reflection
- provided in an appropriate environment – privacy is important for the learner to feel respected and to feel able to engage in an honest self-reflection.

(Archer, 2010). Feedback is covered in more detail in Module 3 of this manual.

## Social interaction

Learning theorists have espoused the notion of learning from others, through discussion, observation and sharing of ideas (Hattie and Yates, 2013). Vygotsky (1978) was one of the first to articulate the notion of social learning which he termed social constructivism. He introduced the notion of the “zone of proximal development” a level of development which they cannot achieve alone but which is helped through social interaction to help the learner make meaning.

As clinical teachers we need to keep in mind what is needed for learning so that we can tailor our course design and teaching to ensuring maximal conditions for learning to occur.

## Environment

A positive learning environment is crucial for learning. Beckman and Lee (2009) suggest that the learning environment can influence motivation and learning. Learners need a safe learning environment in which to test their knowledge, skills and attitudes and to try new things. The impact of stress on learning was first described by Yerkes and Dodson (1908) who found “an optimal amount of stress is required for tasks such as learning, yet learning decreases when the optimum stress is exceeded” (Teigan, 1994, Beckman and Lee, 2009, p340).



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## 1.3: Experiential Learning

### 1.3.1 Theories of learning

As with domains of learning there are many theories of learning. One of the most influential educational theorists was Rogers who distinguished between two types of learning: cognitive (meaningless) and experiential (significant). The former corresponds more to an academic type of knowledge and the latter refers to applied knowledge such as that which is learnt 'on the job' or in the clinical environment. The key to the distinction is that experiential learning addresses the needs and wants of the learner.

Rogers identified four important qualities for experiential learning to take place: Experiential learning:

- requires personal involvement
- is self-initiated
- is evaluated by the learner
- has a pervasive effect on the learner.

To Rogers, experiential learning is equivalent to personal change and growth. Rogers feels that all human beings have a natural propensity to learn; the role of the teacher is to facilitate such learning. This includes:

- (1) Setting a positive climate for learning,
- (2) Clarifying the purposes of the learner(s),
- (3) Organising and making available learning resources,
- (4) Balancing intellectual and emotional components of learning, and
- (5) Sharing feelings and thoughts with learners but not dominating.

According to Rogers, learning is facilitated when: (1) the student participates completely in the learning process and has control over its nature and direction, (2) it is primarily based upon direct confrontation with practical, social, personal or research problems, and (3) self-evaluation is the principal method of assessing progress or success. Rogers also emphasizes the importance of learning to learn and an openness to change. (From Culatta, 2015; Rogers, 1994))



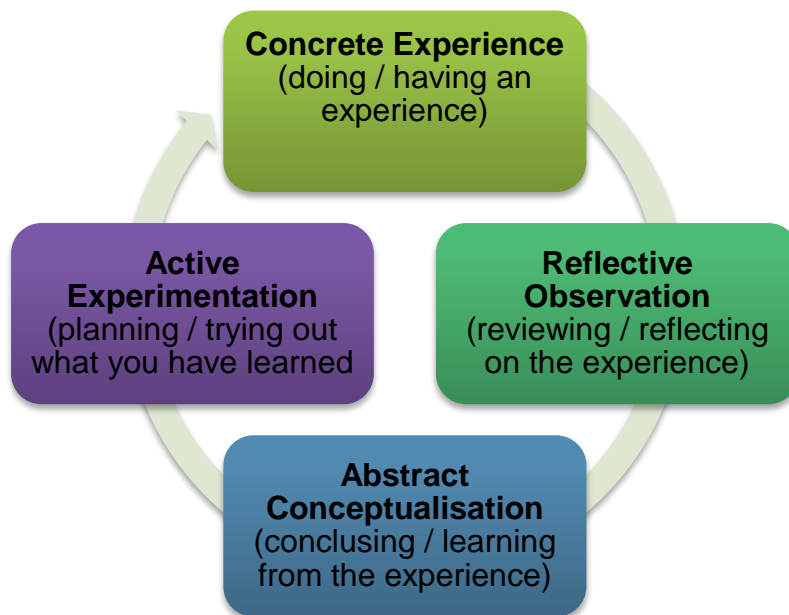
### 1.3.2 Kolb's experiential learning cycle

David Kolb extended this by developing the idea of an experiential learning cycle. The cycle is helpful to understand as it offers a way of explaining a cycle of experiential learning that applies to us all and it is a way of understanding an individual's different learning style.

Kolb's experiential learning cycle has four stages (Figure 2):

1. Concrete experience ("Doing")
2. Reflective observation ("Watching")
3. Abstract conceptualization ("Thinking")
4. Active experimentation ("Planning")

**Figure 2: Kolb's learning cycle**



#### **Kolb's learning styles (Kolb, 1984)**

Kolb's learning styles model is linked to the experiential cycle and has four styles:

1. Diverging: "Someone who prefers doing and experiencing"
2. Assimilating: "Someone who prefers observing and reflecting"
3. Converging: "Someone who wants to understand the underlying reasons, concepts and relationships"
4. Accommodating: "Someone who likes to have a go or who tries things to see if they work"

### **Why is it important to understand Kolb's experiential learning cycle?**

As teachers, it is important to have an awareness of the experiential cycle of learning so that you can acknowledge and value each of the stages during your learner's experience. You may also be required to tailor your teaching to ensure that all four stages are addressed and that you do not focus just on one area.

It is also helpful as it may be necessary to make some adjustments between you and your learner if your learning styles are not complementary but antagonistic or collusive. This will happen if you both tend to go for the same stages in the cycle.



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## Module 2. Teaching Methods

### 2.1: Small Group Learning

Small group learning is the most appropriate strategy for clinical skills and simulation training and as such it is important to understand the theory behind small groups. This module includes a discussion of:

- Small group theory
- Types of small groups
- Common problems associated with small group learning
- Strategies to assist the effectiveness of small group learning.

#### 2.1.1 Small Group theory

##### **Definition**

A small group is usually defined in the literature as no less than 3 and no more than 12 members (Borchers, 1999). Some authors suggest that the ideal number is between 6 and 8 as numbers less than this can be threatening, and more than this and group members can avoid participation (McCrorie, 2006). Edmunds et al suggest “As a group increases in size, the potential resources of knowledge increase but the opportunity for interaction decreases” (2010, p716). Larger numbers have also been criticized for allowing more chance for individuals to not contribute adequately (Jackson et al, 2014, p118). Ideally, Chiriac and Granstrom (2012) recommend that the group has to be large enough that there are enough members to complete the required work in the allotted time, but small enough that individual contributions are visible and accountable.

The specific number in the group is less relevant than the characteristics of small group learning which is occurring. Some authors identify small groups as learners “working together to achieve shared goals” (Pai et al, 2015, p 80). True small group learning is differentiated from other types of instruction by specific characteristics which Crosby, 1997, defines as:

- Active participation

- Interactive
- Task oriented
- Involving reflection

Effective small group learning requires the teacher to act as a facilitator, assisting the learners to achieve their learning objectives rather than dictating the learning that needs to occur. As Rudland (2005) states, “you can have a small number of students and a tutor and yet participation by the students is minimal. This may better be called a lecture” (p57).

### **Advantages of Small Group Instruction**

There has been much research into small group learning and the impact this strategy has on acquisition of knowledge, skills and attitudes. The learning theory underpinning small group work has a socio cultural basis “that views learning and development occurring in a dynamic interaction between the learner and the environment” (Iqbal et al, 2016, p218). It is the participation and interaction with others that is crucial to the learning.

In a meta-analysis, Pai et al, (2015, p82) report small group learning has been shown to promote knowledge acquisition and comprehension, abstraction complex problem-solving, higher levels of metacognitive thinking, as well as motivational and social benefits. Their study also indicated an improved transfer of learning compared to individual learning strategies.

Small groups have also been shown to promote deeper learning than working alone through processes such as discussion, negotiation, developing shared understanding, encouragement and motivation. (Pai et al, 2015, p 83). Small groups have been shown to be more effective than large groups at promoting thought and developing attitudes and values and equally effective (although not as efficient) as large group teaching for imparting information (Bligh, 2000). Small groups also allow learners to form learning partnerships, networks and supportive relationships (Jackson et al, 2014, p117). Hoffman et al (2014) suggests improvements in retention, activation of prior knowledge and concept building.

In addition, the small group strategy assists learners in developing skills in working with others. We know that collaboration is of increasing importance in medical education and medical practice (Iqbal et al, 2016). Parmelee states “If health profession students learn what they need to know through effective small group strategies, then they are more likely to be able to work well with others in the health care teams of the future” (2011, p1032).

As a clinical teacher there are many reasons for adopting a small group learning approach. It is a useful strategy to use because it can:

- Provide an opportunity for learners to collaborate
- Facilitate sharing of experiences
- Provide opportunities for learners to learn from each other
- Encourage reflection
- Encourage problem solving
- Encourage communication skills
- Encourage teamwork
- Provide an opportunity to explore different views of the individual group members
- Encourage learner active participation

## **Group Dynamics**

Engaging in group work means that in addition to participating in the task learners need to also negotiate group processes, including “the distribution of tasks, interpersonal relationships and problem solving in the case of conflict” (Jackson et al, 2014, p124).

Literature on group dynamics often makes reference to the work of Tuckman (1965). Tuckman refers to the following four stages of group development:

- 1. Forming** – characterised by the group members getting to know each other, looking to the group leader for guidance and tending to follow safe acceptable behaviours. Leader tends to direct the group.
- 2. Storming** – characterised by group members competing for and vying for position within the group. There may be conflict in personal relationships within the group. It is important to note that some group members may stay silent during this phase and others will dominate.
- 3. Norming** – group members become cohesive. There is a collaborative environment developed in which group members work to problem solve together. Agreement and consensus are characteristics.
- 4. Performing** – the group has become more strategic, developed a clear understanding of their goals, and achieved autonomy (literature suggests not all groups reach this stage).

Later Tuckman added a 5<sup>th</sup> stage known as “adjourning” which describes the breakup of the group at the end of the task (Tuckman, 1977).

As a facilitator of small groups, you will need to be aware of the stage that your group is at, and to be willing to adopt roles to assist the group to progress along the stages to

independence. How far a group will progress depends on the time available to them as a group, the members within the group and the group facilitation. It is important to allow sufficient time to bring the group work to a conclusion, including time for reflection and feedback (Rudland, 2005).

### **Group member roles**

Many authors have written about the roles that can be adopted within a group (Benne and Sheats, 1948, Belbin, 1981, Borchers, 1999, Crosby 1997, Heron, 1999). Roles within a group can be assigned, such as the leader, scribe, researcher etc. Alternatively, where roles are not assigned, individuals can adopt various roles. Every group member will bring with them their own personality, experiences in group work, expertise on a topic area and confidence. Each of these factors will influence their behaviour within the group and the subsequent role they adopt.

Benne and Sheats (1948) have described roles in terms of the task. Examples of these roles are:

- The information seeker – who asks questions about the task
- The recorder – who keeps notes on the groups progress
- The elaborator – who explains and clarifies ideas.

Others have described social roles within a group (Belbin, 1981, Borchers 1999) such as:

- The teamworker – who builds relationships and avoids conflict
- The compromiser – who assists in breaking up conflict
- The harmoniser – who mediates between group members.

As a facilitator of groups, understanding the various roles adopted by group members will assist in making the group as effective as possible. Where a group has too many of one type of role e.g. lots of leaders, the group may find it difficult to function to its maximum potential.

### **Facilitator roles**

There are a number of proposed roles that a facilitator may adopt within a group, however generally they are considered maintenance roles (in which the facilitator ensures the group is functioning and that all group members are participating equally) and task roles (in which the facilitator ensures the group achieves the task at hand) (Crosby, 1997, Kilgour et al, 2016).

Azadegan et al, (2014) suggests facilitators have political functions, (where the facilitator manages things such as power struggles and group domination), social functions (where



the facilitator manages cultural, learning or individual differences) and environmental functions (where the facilitator creates a conducive learning environment).

Heron (1999) outlines some different roles a facilitator may take within a group. The role taken, he argues, varies with the task and the maturity of the group. These roles are summarised as:

- Hierarchical – where the facilitator directs the group. This is a common role adopted when a group is new.
- Cooperative – where the facilitator sits within the group e.g. sitting in the circle with the participants, and while still offering ideas, the decisions are made by the group.
- Autonomous – where the group works without the facilitator but the facilitator monitors the group to make sure they are on task and functioning. Heron suggests seating outside the group circle by the facilitator will encourage this behaviour.

Similarly, Rudduck (1978) describes four roles that a tutor can adopt;

1. Instructor – there to impart knowledge
2. Devil's advocate – who adopts a controversial view to stimulate discussion
3. Neutral chair – who chairs discussion but doesn't offer strong opinion
4. Consultant – not part of the group but there to be asked questions if needed.

As a small group facilitator, you need to determine which role or roles you will be adopting and when you will be adopting these roles. This will assist you to plan the activity to ensure achievement of tasks and maximise the functionality of your small group. Freeman et al (2010, p381) suggests that this “can involve facilitators taking a back seat, whilst remaining alert and observant, so that they can gauge when to interact with the group”. Sometimes “letting go” can be difficult for some facilitators however it is important that the learners develop skills in being productive group members without relying on the facilitator.

## 2.1.2 Types of small group learning

There are many types of small group learning. The following examples are provided which may be appropriate for clinical teachers to consider using:

- Problem based learning (PBL) – this is a specific type of small group learning often used in undergraduate health professional education where learners work together to “actively construct new ideas and principles using their existing knowledge base, through a small-group process” (Kilgour et al, 2016, p15). PBL uses an open inquiry

model where learners often identify their own learning goals and the teacher is very much a facilitator of group processes rather than a content provider.

- Case based learning (CBL) – this most commonly requires learners to work through a clinical case/scenario to identify, diagnose and propose management. Unlike PBL, CBL is usually a more structured process with defined objectives (Kilgour et al, 2016).
- Team based learning (TBL) – this type of small group learning “uses short formative tests to assess current knowledge and guide group discussion, before the introduction of a related problem for the group to solve” (Kilgour et al, 2009, p16).
- Small group activities within a small group. There are a number of teaching strategies that can be used in small group learning that require small groups within the small group. Examples include:
  - Think/pair/share – this is where a question or activity is provided to individual learners. They start by reflecting on their response to the question (think), after which the teacher prompts them to talk to the person next to them (pair) and finally they discuss as the whole small group (share). This is useful for ensuring all members of the group engage in the activity rather than have some individuals dominating. (Pluta et al, 2013).
  - Buzz groups – this is where the teacher directs the group to divide up into threes or fours to discuss a topic before coming back and sharing their ideas with the whole small group (Newble, 2001).

### 2.1.3 Common problems associated with small group learning

A number of common problems that can arise in small group sessions are discussed in the literature. These can be divided into issues arising because of the facilitator’s behaviour or issues arising because of group members (participant’s) behaviour.

Examples of facilitator issues include;

1. The facilitator talks “too much” and gives a mini lecture
2. Failure to “actively listen” to participants
3. Judgmental responses to participant input which results in learners not feeling willing to “try” to answer questions in future.
4. Lack of clarity in group activity – group flounders not knowing what to do.

Examples of participant issues include:

1. Participants respond to facilitator rather than each other
2. One participant dominates the discussion

3. The reticent participant who doesn't participate in discussions – fear of being judged negatively by others" (Pai, 2014, p82)
4. A participant who is not taking the activity seriously and jokes about undermining the group activity
5. Participants want solutions to problems rather than to discuss and problem solve together.

## 2.1.4 Strategies to assist the effectiveness of small group learning

There are a number of strategies to assist you in facilitation of small group activities. Some of these are suggested below.

### **The setting /environment**

Seating is an important consideration in small group activities. How a room is arranged can either promote or discourage discussion. You may use a semi-circle, which will tend to have you as the leader out the front or a circle so that you are a member of the discussion group (Hartely, 2003). A semi-circle arrangement may be appropriate at the beginning of a session to allow introduction of a task or topic area, or at the conclusion to summarise and get feedback.

Changing the seating within a session can also assist with managing a dominant group member. By sitting next to this group member, eye contact with the facilitator is reduced and it may be more difficult for them to dominate your attention (McCrorie, 2005).

### **Planning a session**

Set/Dialogue/Closure is a technique for planning a teaching session (Lake et al, 2004). It involves identifying the three components of a discussion;

1. Set – where the facilitator sets the scene or the task/purpose of the discussion and outlines the learning objectives. The opening sets the tone for the group meeting/s (Edmonds and Brown, 2010, 719). It is also important for group members to have an opportunity to introduce themselves and what they are hoping to achieve in terms of learning goals.
2. Edmonds and Brown, (2010, p719) suggest the “**REST**” mnemonic:
  - R = Establish rapport with the group members
  - E = Discuss mutual expectations
  - S = Outline the structure of the session
  - T = Set the task

3. Dialogue – where you promote discussion and listen – “It is very important to listen well to what is said during small group discussions, try to hear the explicit and underlying implicit meanings of what is said” (Edmunds and Brown, 2010, p718). During the dialogue section if you find a group member dominating the discussion you may decide to give them a task e.g. scribe – with responsibility for recording the group discussions (McCrorie, 2005).
4. Where you decide to use small group strategies within the small group (as previously described e.g. think/pair/share, it is very important to ensure your instructions are clear to avoid the task going off track. A common error with think/pair/share is to indicate what is going to happen in advance. Learners often go straight to the “pair” discussion and miss the opportunity for individual reflection. Ideally, give them the question or task and then get them to do it individually. After a predetermined time, then ask them to pair.
5. Closure – at the end of the discussion where you provide a summary of key points. It is also important to thank the group for their input (Edmunds and Brown, 2010, p719).

Taking the time to plan your session will assist in achievement of specific session objectives and minimise problems arising within your small group.

### **Establishing the Group**

This involves performing introductions, establishing ground rules and where appropriate assigning roles.

Introduce yourself and your background experience, work environment, interest areas etc., which are relevant to the situation and assist in establishing your credentials. Make sure all the participants have a chance to introduce themselves and their backgrounds. This will assist you in determining levels of experience and expertise within the group which will assist you later in assigning tasks or roles.

Establish clear guidelines with the group at the outset of the course. These should include ground rules such as;

- Not talking whilst another is talking
- Objectives of the session – make sure that participants are clear around expectations
- Respect for others experiences, work environments
- Confidentiality
- Timeframes for discussions
- How feedback will be given to each other.

At this stage you may decide to allocate group members to subgroups for parts of the workshop/course. Careful thought as to how you would split the group is required to make sure that experience is evenly spread and with respect to member personalities.

### **Questioning techniques**

The use of questions will be particularly important in promoting group discussion. Consider whether the question should be “closed” – promoting a yes/no response or “open” asking for a more detailed response. How you phrase the question will determine the response. Use closed questions to limit discussion that is going on too long. Use open questions to broaden discussion (Lake et al, 2005).

For example;

- Do you think that there should be a multidisciplinary approach to the teaching of clinical skills? (closed)
- What do you understand by a multidisciplinary approach to teaching clinical skills? (open)

It is also important to sequence your questioning logically. For example, a general question can be followed by more probing questions, or an extension question follows the initial question in order to ask for elaboration or more examples. (Beckman and Lee, 2009).

Targeted questioning is where you ask one particular group member a question. It can be used to promote participation by quieter group members. You will need to be careful here not to make the participant uncomfortable by asking something they don't know.

Asking for opinions is a good technique as everyone's opinion should be valued, or asking for an example from their experience is one way to avoid putting a learner “on the spot”. This technique can also be used to elicit other group members when one participant is dominating the conversation.

Avoid asking sequential questions which tends to impact on the group dynamics (learners quickly recognise that they have had their question and can now “tune out”).



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## 2.2: Scenario-based learning

Scenario or Case based learning has been used extensively within medicine, nursing and the health sciences, as well as non-health related disciplines such as law, business and social sciences. This module explores:

- Definitions
- Underpinning theory
- Advantages
- Disadvantages

### 2.2.1 Definitions

The terms case based and scenario based learning are often used interchangeably throughout the literature. They involve the use of a real or fictional case or scenario to provide learning opportunities in a context or situation that promote authentic learning (Williams, 2005, p577).

They provide the learner with not only a context in which to situate the learning but also relevance to their workplace (Thistlethwaite et al, 2012). Cases or scenarios “bring a reality perspective into the classroom” (McFetridge and Deeny, 2004). They can also challenge the learner with problems as in the traditional problem based learning method, and demand problem solving or critical analysis. Scenarios are usually “presented in narrative form and often involve problem-solving, links to course readings or source materials, and discussions by groups of students, or the entire class” (Bennal et al, 2016, p66).

Scenarios may be presented in totality with history, diagnosis, and management and the learner is required to evaluate decisions that have been made. Alternatively, the scenario may unfold with stimulus questions that involve the learner in making decisions and applying their knowledge and experience. Bennal et al, 2016, suggests that scenarios “are most effective if they are presented sequentially, so that students receive additional information as the case unfolds, and can continue to analyze or critique the situation/problem” (p66). Often the scenario is “non-linear, and can provide numerous feedback opportunities to students, based on the decisions they make at each stage in the process” (Massey University, n.d.)

Problem based learning and scenario/case based learning are often used synonymously and the difference can be unclear. Traditionally, in problem based learning the problem is presented in the initial session with the learners then required to work as a small group towards a solution to the problem using a discovery method (Thistlethwaite et al, 2012 and Srinivasan, 2007), whereas scenarios can be used in single learning experiences, and are structured around an unfolding case with guided discussion questions and clear objectives (Srinivasan, 2007).

### 2.2.2 Underpinning Theory

Scenario based learning is based on the concept of situated cognition or situated learning theory (Lamos and Parrish, 1999, Lave and Wenger, 1991). The underlying premise is “knowledge cannot be fully understood independent of its context” (Lamos and Parrish, 1999). The importance of the creation of a realistic situation is linked to the need for context specificity, which Regehr and Norman (1996) argue affects the ability of a learner to recall information depending on how similar it is to the context in which they learn.

Kneebone et al, 2003 argue that focussing on a specific technical skill can lose sight of the context in which the skill is performed and the other components of professionalism such as communication that are required when applying the skill to the patient situation.

Thistlethwaite et al, 2007 also attribute the effectiveness of case based learning to “the active learning undertaken by students (as with inquiry-based learning) and the application of knowledge acquired to different cases, thus enhancing its relevance” (p434).

### 2.2.3 Advantages

The literature presents a number of advantages of scenario based learning including:

1. Ability to minimise the boundaries between the clinical skills laboratory and the real world (Kneebone et al, 2005)
2. Ability to link technical training and communication skills training (Kneebone et al, 2002).
3. Ability to link theory to practice (Stewart &Gonzalez, 2006)
4. Provision of a patient focus to the education (Owen et al, 2007)
5. Linking of theoretical knowledge to practice (McFetridge and Deeny, 2004)
6. Opportunity to reflect, critically analyse and question (Stockhausen, 1994).

7. “improves retention and recall of information, fosters lifelong self-directed learning skills, encourages and strengthens hypothetico-deductive reasoning” (Jamkar et al, 2007, p180).
8. Can foster group work through active discussion and problem solving (Rybarczyk et al 2007)

## 2.2.4 Characteristics of the Scenario

As a clinical teacher it is important to consider the characteristics required of an effective scenario or case. The following characteristics are some evidence-based approaches.

1. The scenario or case should be as close as possible to reality (Cioffi, 2001). The case needs to make “clinical sense” i.e. physiological parameters respond appropriately to treatment.
2. May be “response based” or “process based” (Cioffi, 2001 and Lamos, 1999). An example of response based is where a case is described to the learner in full, prior to them practicing a clinical skill. This means that the scenario provides a situation in which to learn the skill. Alternatively, the scenario unfolds and the learner can get more information in response to a question asked. An example of this would be a role play. Cioffi (2001) argues that this approach more accurately imitates real life clinical problem solving.
3. Real cases vs fictional cases. Real cases need to be de-identified for ethical reasons. Fictional ones need to be as realistic as possible particularly for experienced clinicians. Fictional cases can be difficult to write in order to ensure this ‘reality’ is achieved.
4. Level of complexity of the case/scenario – this depends again on the experience level of the learners and the objectives of the program (Jones, 2006). The addition of others within the scenario e.g. simulated patients is another consideration for the educator. This has been discussed in terms of context within the clinical skills module 2.3.
5. Sequential or Continuum of care scenarios – this is where a scenario or group of scenarios is developed for use over time with a group of learners. The aim is to represent the continuum of care of a patient. Navedo and Reidy (2009) suggest it is important if using continuum of care scenarios that the progressions or transitions are kept realistic (p 124). There is also the potential for decisions to impact on subsequent scenarios so that faculty also need the ability to adapt subsequent scenarios, in response to treatment decisions or management options taken by the learner (Navedo and Reidy, 2009).



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## 2.3: Teaching Clinical Skills

The term clinical skill encompasses a wide range of psychomotor tasks required for the assessment and management of patients, e.g. taking a history, inserting an IV, and/or communication (Adamo et al, 2005). Each skill requires knowledge, skill and attitude to perform. The aim of teaching a clinical skill is to ensure that the skill can be “retained beyond the practise period; it can be recalled and executed competently in a variety of clinical settings” (Kantak & Winstein 2012).

Traditionally health professionals learnt the majority of their clinical skills in the hospital setting on real patients. The expression “see one, do one, teach one” became a popular adage (Sawyer et al, 2015, p1025). In recent years this has changed due to concern regarding the safety of patients, patients who are more informed demanding experienced care, and anxiety of students about practising for the first time on a patient (De Young, 2003). Today there has been the advent of clinical skills centres which “seek to provide an environment for learning clinical skills in which students can practise without jeopardising patient care “(Adamo et al, 2005).

The following section outlines the educational theory relevant to teaching a clinical skill in a clinical skills environment, as well as models that could be used by a clinical teacher in their own educational practice.

### 2.3.1 Educational Theories relevant to teaching clinical skills

In order to understand the educational theories that underpin the teaching of clinical skills, it is important to differentiate between cognitive skills and psychomotor skills. Cognitive skills are more concerned with the knowledge domain of learning e.g. taking a history, reading an x-ray, breaking bad news. Whereas psychomotor skills are those skills requiring physical manipulation to perform the skill e.g. putting in an IV, intubating, inserting an NG tube etc.

Non-technical skills is another term that is widely used in the simulation literature and refers to “the skills of communication, (patient-provider, team) leadership, teamwork, situational awareness, decision making, resource management, safe practice, adverse event minimization/mitigation, and professionalism; also known as behavioral skills or

teamwork skills” (Loperiato et al, 2016, p25). These skills are dealt with more in the Advanced Clinical Skills and Simulation Teacher’s Manual.

## **Cognitive Skills**

A central theory to cognitive skill acquisition is Cognitive Apprenticeship, first described by Collins et al, (1989). It is an instructional model that is derived from the apprenticeship model. The emphasis in this model is on the thinking that must precede and be part of the task (Woolley and Jarvis, 2007). That is the thinking needs to be made visible and brought to the surface for the learner (Collins et al, 2004). The cognitive apprenticeship model relies on the interaction of the learner with the expert and skills in verbalizing the expert’s opinions are crucial (Lyons et al, 2017).

There are six components to this model including:

1. Modelling – demonstration by the expert
2. Coaching – expert provides feedback
3. Scaffolding – support for the learner is gradually removed depending on their skill level until they are independent
4. Articulation – the learner needs to express what they are doing and how they are problem solving
5. Reflection – where the learner is critical of their own performance
6. Exploration – where they learn to adapt their skill to the real world in new situations.

Central to the success of this model is the facilitator’s ability to assess the learner’s needs and skill level, as well as their underlying knowledge and expertise regarding the specific skill (Woolley et al, 2007). Faculty development is often recommended for maximizing the effectiveness of this model (Lyons et al, 2017).

Woolley et al (2007) describes a modification of the Collin’s cognitive apprenticeship model for teaching clinical skills. The Woolley et al (2007) model is summarised below:

1. Modelling – can be done by giving learners an instructional video of an expert doing the procedure
2. Coaching – AV recording can be used to provide feedback and review with the learner
3. Scaffolding – facilitator adapts level of support dependent on the level of skill of the individual participant
4. Articulation – clinical skills environment needs to consider “real life” examples to contextualise the skill outside the centre
5. Reflection – use of multiple AV recordings taken over the course of practise



6. Exploration – moving practise to the real life setting from the clinical skills setting.

Woolley's model relies heavily on sophisticated AV equipment and technical support which may not be possible in some settings.

### **Psychomotor skills**

Several motor theorists have presented principles for teaching a psychomotor skill however the main tenet of these is the use of a step wise approach (Nicholls et al, 2016, p1056). George (2001) outlines seven basic principles of the psychomotor domain, including:

1. Conceptualisation – where the learner needs to understand the background knowledge element of the skill i.e. the cognitive components. This involves a knowledge of why the skill should be done, when to do it, precautions and contraindications etc.,
2. Visualisation – where the learner needs to see the skill demonstrated so they have a clear picture of what the skill looks like when it is performed in real time,
3. Verbalisation – where the learner needs to hear the steps of the skill verbalized and be able to verbalise the steps themselves,
4. Practise – where the learner gets the chance to practise the skill themselves,
5. Correction and reinforcement – where feedback is given to cement performance,
6. Skill mastery – where the learner can perform the skill independently in the learning environment, and,
7. Skill autonomy – where the learner can perform the skill in a variety of real life situations.

Gentile (1972) suggests the need to consider the environment in which the skill is to be performed. Clinical environments are varied as are patients. In some situations, a skill can be quite simple where the environment is stable, whereas the same skill can become more complex when the environment is constantly changing e.g. putting in an IV in a young healthy alert adult vs in an elderly confused and agitated patient. Likewise, learning a skill requires an ability to be able to modify the skill according to the environment.

Using these theories, a number of models have been described for teaching psychomotor clinical skills. Peyton (1998) describes a four step model for teaching clinical skills:

1. Demonstration of the procedure by the facilitator at normal speed without explanation
2. Demonstration with explanation by the facilitator

3. Demonstration by facilitator with learner explaining the steps
4. Learner demonstrates the procedure under supervision with feedback.

George and Doto (2001) uses a similar model with an initial additional step called “overview” which happens first, and the facilitator provides a context for the skill, why the skill should be undertaken etc.

The George and Doto (2001) and Peyton (1998) models are more readily adapted to any clinical skills setting. However, there has been debate in the literature regarding the efficacy of two, four and five step models (Nicholls et al, 2016, p1057) particularly in regards to complex skills. Some studies show no advantage of one model over another where as others demonstrate improved skill acquisition with Peyton’s 4 step model compared with the two step (see one, do one) (Rossetini et al, 2017, and Gradl-Dietch, G, et al, 2016, Krautter et al, 2011).

Nicholls (2016, p1057) argues regardless of the four or five step model, some fundamental principles that should be adhered to when teaching psychomotor skills which include:

- Task analysis prior to teaching,
- Identifying the learner’s skill level and learning needs,
- Restricting the number of skills (or breaking down complex skills into manageable parts e.g. no more than 7 steps at a time) to limit cognitive overload
- Avoidance of educator coaching or feedback during practise of the skill as this allows the learner to focus on the execution of the skill
- Immediate correction when a skill is verbalized or practised incorrectly, and
- Multiple practise opportunities.

Following a comprehensive review of the literature on teaching psychomotor skills, Sawyer, (2015) presents the following model which adapts the previous work based on evidence:

1. Learn – this is the conceptualization phase previously described by George (2001), where the learner focuses on the cognitive components.
2. See – this corresponds to the visualization stage where the learner sees what the skill looks like when performed by the teacher and then the teacher breaks down the task into steps for the learner. The additional stage of verbalization helps to cement the cognitive knowledge regarding the steps before the learner performs the task.

3. Practise – the learner now practises the task. Sawyer (2015, p 1027) argues that this practise needs to be “deliberate practise” with clear objectives, specific to the learner, specific feedback and multiple practise opportunities with immediate correction of mistakes however feedback after the practise. Deliberate practise has been shown to be superior than traditional training methods (Willis et al, 2012). Oermann et al, (2016, p 280) argues that this practise should be spaced over time and not to expect complex skills to be acquired in one “sitting”.
4. Prove – Sawyer (2015, p1027) posits that the learner should be required to prove skill acquisition on a simulator before then performing on a real patient.
5. Do – this is where the learner now practises the skill in “real life” on real patients. Acquisition on the simulator should not be considered sufficient (Sawyer et al, p 2028).
6. Maintain – Skill competency degrades over time if the skill is not continued to be practised. The degree of degrade and the required frequency of practise is not well defined (Sawyer, 2015, p1028).

### 2.3.3 Link between communication and procedural skills

Procedural skills are not performed in real life in isolation from communication skills, but rather simultaneously. If one needs to put an intravenous catheter into a patient, there is a patient involved and as a health practitioner we need to interact with that patient whilst undertaking the technical or procedural skill. Why then is much of the training of procedural skills centred on the technical components? (Kidd et al, 2005).

Truly successful skill performance relies on the integration of knowledge, technical expertise and communication skills. De Young (2003, p. 202) suggests that if this integration is left until when the learner performs the skill in the clinical setting, this integration may not occur.

Linked with the issue of the co-relationship between technical and communication skills is the evidence that many complaints regarding performance are linked to the communication aspect (Kidd et al, 2005). Therefore, there is support for teaching the two components together to promote this awareness of both aspects being equally important. Kneebone et al, 2002, developed a model to teach clinical skills which incorporated the use of trained simulated patients (actors) and part task trainers (inanimate models) to provide a safe yet realistic environment for the learners. This method of instruction can be costly particularly with the involvement of simulated patients and their subsequent training, however the concept can be incorporated into the traditional skills setting by adding the communication aspect into the demonstration by the facilitator and

subsequent practise by the learner. In addition, benefits of feedback directly from the simulated patients has been widely discussed (Nestel & Kneebone, 2010, Kneebone et al, 2006).

### 2.3.4 Transference of skill

Transference of a skill refers to the demonstration of what is learnt in the clinical skills laboratory environment to the real world environment (Heaven et al, 2006). This phenomenon is researched widely in the psychology literature with transfer being said to occur when “learned behaviours are generalised to the job context and maintained over a period of time i.e. when they are integrated into normal practice” (Heaven et al, 2006).

The literature suggests that a student’s perception of the consequences of using or not using the new skill influences the transfer that occurs (Baldwin, 1988). Negative experiences can occur back in the workplace particularly by experienced clinicians showing disdain for a new procedure or where an established procedure is performed in a different way to that taught in the clinical skills environment (Ewertsson et al, 2015). The link between what is taught in the clinical skills laboratory and what is to be experience in the workplace should be made explicit in an attempt to counteract this effect (Heaven, 2006).

Studies have shown that teaching psychomotor skills in a clinical skills laboratory is superior in terms of transfer of that skill to clinical practice, than bedside teaching alone (Lund et al, 2012).



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## Module 3: Giving Effective Feedback

### 3.1 Definition

Ende (1983) defines feedback as “information that a system uses to make adjustments in reaching a goal”. It involves the learner being provided with information that offers “insight into what he or she did as well as the consequences of his or her actions” (Ende, 1983, p. 777). Johnson et al, 2016, suggest that “feedback needs to help the learner develop a clear understanding of the target performance, how it differs from their current performance and what they can do to close the gap”.

Feedback is the most essential requirement for learning and the importance of positive feedback for learning has been well established (Kilminster et al., 2002, Boehler et al, 2006). Peyton (1998) describes feedback as the “lifeblood of learning” (p. 52). Ende suggests that without feedback the learner fails to recognise mistakes, make corrections and achieve clinical competence.

Feedback by the very nature of the definition is part of the formative process of assessment, that is, the end result has not been achieved yet and the information is being used to reach that end point. Feedback may be formal, as part of an assessment process or informal, usually given throughout the course of instruction by the clinical teacher.

In addition to the formal/informal distinction, feedback can also be differentiated into:

- Positive Feedback which deals with behaviors that you think are effective or that you would like to reinforce, and
- Negative Feedback which deals with behaviours that you think are ineffective or that you would like to change.

Schwenk and Whitman state that it is easy to confuse positive feedback with praise and negative feedback with criticism (1987, p. 59). Feedback is more than a value judgement of “good” or “bad”. Ideally, feedback should assist the learner to reinforce or improve behaviour and be specific, “informed, non-evaluative, and objective” (Ende, 1983, p. 779).

Despite feedback being well established as an essential element for learning, the process within health professional education remains problematic. Studies report that supervisors/teachers often report regular feedback provision, while their learners deny



that they receive feedback (Telio et al, 2015). Mann et al (2011,p1122) found a tension between learners wanting feedback and yet “fearing disconfirming information”. Many studies have found feedback to be ineffective in causing behavioural change (Telio et al, 2015). Ajjawi (2012, p1018) suggests language such as “giving” and “receiving” perpetuates a model of feedback that is one way and transmission based. Archer (2010, p101) suggests that in order for feedback to have a maximal impact it should be seen as a “supported sequential process rather than a series of unrelated events”. Feedback should also be incorporated into the “culture and work processes of clinical settings” (Hauer et al, p142).

Some of these issues can be addressed by ensuring that feedback follows recommendations for best practice.

## 3.2 Characteristics of Effective Feedback

Giving feedback is a skill in itself, which requires the educator to have both background knowledge and an opportunity to practise giving feedback. This section outlines some of the characteristics of effective feedback gleaned from contemporary literature. Vickery and Lake (2005, p. 267) suggest that effective feedback requires:

- Adequate time
- Clear goals
- Direct observation of learners, and
- Skills in giving feedback.

The following issues should be considered when giving feedback:

**1. Environment** – feedback requiring critique of a performance should be given to the individual learner privately (Vickery et al., 2005). Ende (1983) suggests the setting should be relaxed with attention given to seating so that both the teacher and learner are equal participants in the discussion.

**2. Learner input** – it is important to involve the learner in the feedback session.

Feedback in health professional education has often been conceptualized as a one-way process in which feedback is provided by a teacher to a learner and the principles of effective feedback then focus on the giving feedback rather than the process of receiving feedback and the impact of the relationship between the learner and teacher on the process of feedback (Telio et al, 2015).

Feedback should be a two-way process in which the learner is asked to reflect on their performance. This promotes self-evaluation and allows the learner to consider how they

have performed. Peyton (1998, p. 28) suggests asking questions such as what went well, what they thought they did the best and progress to what they could change next time. Open ended questions used by the facilitator will assist in promoting this involvement (Ende, 1983). Curtis et al (2014, p945) suggest “the self-monitoring of one’s actions is considered integral to lifelong learning” and as such this is an important component of the feedback process.

Feedback should involve the recipient in exploring alternatives or solving problems. This is not to say the feedback provider cannot assist in problem solving, but rather that they should act as a facilitator for the recipient to be self-critical and proactive in their approach to the feedback. It should also be sensitive to the goals of the recipient.

**3. Observation** - feedback should be based on what is observed (Norcini, 2010). This is important for the “credibility” of the feedback from the learner’s perspective (Voyer et al, 2016, p952). It should be given on what is observed or heard without interpretation or judgement. It should focus on the behaviour and not an interpretation of why that behaviour occurred. The educator needs to explore the learner’s rationale rather than imposing their own interpretation on observations made.

**4. Specific** – feedback is most effective when it is specific rather than global. Remembering the aim of feedback is to reinforce or change behaviour, then the more specific the information provided the better the feedback will be for the learner. Feedback also needs to be unambiguous to avoid misunderstandings (Kilminster et al., 2002).

**5. Timing** - Immediate/Delayed - Where possible feedback should be given close to the time of the behavior being observed. This has been shown to be the most effective form of feedback (Stenglehofen, 1993 and Vickery et al., 2005). There are times when immediate feedback is not appropriate, particularly in emotionally charged situations, for example if the learner or teacher is upset this will interfere with the ability to receive or give feedback (Stenglehofen, 1993).

**6. Active Listening** - feedback requires active listening by the facilitator to ensure that an understanding from the learner’s perspective is gained. Listening to a learner as to why a particular performance did not go as plan, can assist the facilitator in planning the next educational intervention.

**7. Frequency** - In the situation where you will have interaction with the learner over a period of time, regular feedback has a more profound motivating effect on the learner and learning outcomes than one off feedback session (Vickery et al., 2005).

Johnson et al (2016) identified four themes in high quality feedback, including;

- the learner having to do the learning – developing their understanding of the target behavior and how their performance varies from this,
- the learner is autonomous – the learner identifying the changes to be made and if how they will be made,
- the importance of the learner-educator relationship and its impact on the effectiveness of feedback, and,
- collaboration through dialogue.

In addition, they identified the following 25 educator behaviours in high quality feedback which are useful for educators to consider (Johnson et al, 2016):

1. The educator's comments were based on observed performance
2. The educator offered to discuss the performance as soon as practicable
3. The educator explained that the purpose of feedback is to help the learner improve their performance.
4. The educator indicated that while developing a skill, it is expected that some aspects can be improved and the educator is here to help, not criticise.
5. The educator described the intended process for the feedback discussion.
6. The educator encouraged the learner to engage in interactive discussions.
7. The educator asked the learner about their learning priorities for the observation and feedback discussion, and responded to them.
8. The educator encouraged the learner to consider the issues and possible solutions during the feedback discussion.
9. The educator encouraged the learner to discuss difficulties and ask questions regarding the performance so the educator could help the learner to develop solutions.
10. The educator acknowledged and responded appropriately to emotions expressed by the learner.
11. The educator showed respect and support for the learner.
12. The educator asked the what the learner understood about the benefits of self-assessment and helped clarify.
13. The educator asked the learner to identify key similarities and differences between the learner's performance and the target performance.
14. The educator clarified with the learner key features of the target performance and explained the reasoning.
15. The educator clarified with the learner similarities and differences between the learner's performance and the target performance.
16. The educator's comments focused on key issues for improving performance.

17. First the educator described, using neutral language, what the learner did (action, decision or behavior) and the consequences.
18. The educator clearly explained their perspective on the learner's actions, including the reason for their concern.
19. The educator explored the learner's perspective and reasoning to reveal the basis for the learner's actions (e.g. what was the learner trying to do and options considered/difficulties encountered).
20. The educator's comments were focused on the learner's actions, not personal characteristics.
21. The educator helped the learner to select a couple of key aspects of the performance to improve.
22. The educator helped the learner to work out how they could improve their performance and specify the practical steps to achieve it.
23. The educator checked if the learner understood their learning goals and action plan, by asking them to summarise it in their own words.
24. The educator checked if the learner understood the rationale for their learning goals and action plan.
25. The educator discussed with the learner possible subsequent opportunities for the learner to review their progress.

Beckman and Lee (2009, p341) developed the FIT and ABLE mnemonics to assist educators to remember the components of effective feedback:

F – Frequent

I – Interactive (learners and clinical teachers need to give each other feedback)

T – Timely (immediately or within 24 hours)

A – Appropriate for learner's level of competence

B – Behaviour specific and balanced (positive and corrective components)

L – Labelled (let the learners know you are giving feedback)

E – Empathetic (be aware of social context in which you are giving feedback e.g. privacy required).

### 3.3 A model for giving feedback

As previously stated feedback is a skill and requires individual practise. Developing your own personal style for providing feedback is also important. There are a number of models presented in the literature however more important than the specific model used is

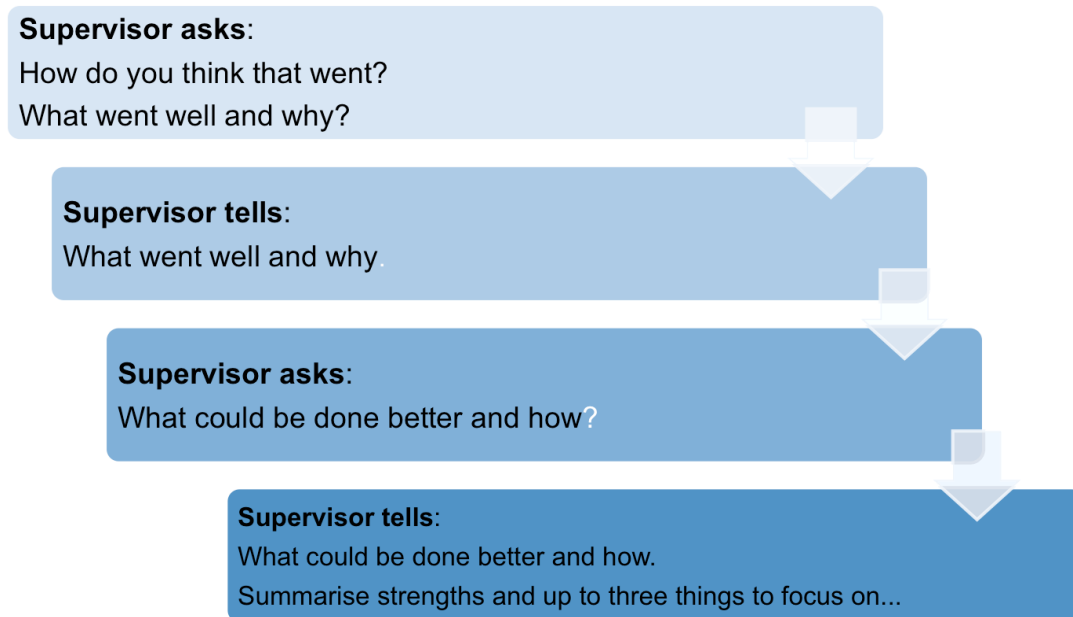
the characteristics of effective feedback that have been discussed previously. Ideally the educator should describe the process to be used in the feedback discussion and the aims/goal of the feedback prior to starting the discussion (Johnson et al, 2016).

The following model is provided as an example of one approach to providing feedback. Pendleton (1984) describes the following model for giving feedback:

- 1. The learner is asked how they felt** (It is important to start with this question to ascertain any emotions that the learner has in regards to their performance that need to be addressed prior to the self-evaluation).
- 2. The learner is asked what went well and why** (This is the first part of the self-reflection by the learner and should focus on the elements of their performance that are at the target performance level. The addition of “and why” is important for ensuring the learner understands the relationship between their performance and the target performance).
- 3. The facilitator/teacher says what went well and why** (This element is now for the teacher to highlight areas of the learner’s performance that they may not be aware of that were at the desired target performance level)
- 4. The learner is asked what could have been done better and why** (This is the final stage of the self- reflection and focusses on the learner’s understanding of how their performance did not meet the target performance).
- 5. The facilitator/teacher says what could have been done better and why** (This element requires the teacher to highlight where the learner’s performance did not meet the target performance).
- 6. The facilitator/teacher summarises the strengths and up to 3 things to concentrate on** (it is important that there is an agreed plan or goals established that will be revisited at a later stage to ensure that it does not “end” with the feedback) (Boud and Molloy, 2015).

Figure 3 displays the Pendleton’s model for giving feedback

**Figure 3:** Pendleton's recommended model of giving feedback



Ideally you should practise the skill of giving feedback and if possible ask peers to observe you and provide you with feedback on the process. Sometimes a proforma with the feedback model on one side and blank spaces on the other side, can help you to write down your points before commencing.

Preparation for a feedback session is important to ensure you have clearly identified what you want to discuss and have specific examples to support your assessment of the learner's performance.

It should be noted that provision of feedback should have a motivational as well as a corrective influence on the recipient, if provided constructively.



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## Module 4: Interprofessional Education

### 4.1 Introduction

Interprofessional Collaborative Practice (ICP) is “two or more professions working together as a team with a common purpose, commitment and mutual respect” (L-TIPP, 2009, p.iv). If ICP is the desired outcome, then Interprofessional Education (IPE) is the means to achieve this.

IPE “was first conceived as a means to overcome ignorance and prejudice amongst health and social care professions” (Barr, 2005, p. 10). There was a hope that if people from different professions learnt together they would develop a better understanding of each other and thus improve tolerance and teamwork. The issue of teamwork has been identified as crucial for optimal patient care and organisations such as the World Health Organisation (WHO) actively promote IPE. Paradis et al suggest “the ability to collaborate is increasingly seen as a fundamental competency for 21st-century clinicians” (2017, p862).

Brown and Overly (2016, p179) state “for teams to function safely and effectively in high-stakes, high-risk settings, it is critical that they use clear communication and demonstrate quality teamwork behaviors”. Failures in team communication and functioning have been associated with poor patient outcomes (Reed et al, 2017, De Vries et al, 2017).

There is therefore a well-accepted need for students and junior health professionals to “learn about the professional identity and roles of others and to develop their own self-identity” (Yu et al, 2016). IPE allows learners to explore team roles and behaviours, and professional identities as they function in the healthcare environment.

The WHO state “Interprofessional education is a necessary step in preparing a ‘collaborative practice-ready’ health workforce that is better prepared to respond to local health needs” (WHO position paper, 2010).

This module outlines:

- Definitions and theoretical basis
- Outcomes
- Characteristics of IPE
- Requirements for successful IPE
- Barriers to successful IPE

## 4.2 Definitions and theoretical basis

The Centre for Advancement of Interprofessional Education (CAIPE, 2002) provides one of the most widely accepted definitions of IPE:

“... when two or more professions learn with, from and about each other to improve collaboration and quality of care...” (p.2)

The World Health Organisation (WHO), describe IPE as “the process by which a group of students or workers from the health related occupations with different backgrounds learn together during certain periods of their education, with interaction as the important goal, to collaborate in providing promotive, curative, rehabilitative, and other health related services (WHO, 1988, p.6-7). This differs from multiprofessional learning (MPL), which is defined as “when two or more professions learn side by side for whatever reason” (CAIPE, 2002, p.2).

Intraprofessional education has recently drawn attention, where learners within the same discipline, but different levels, learn together e.g. 2<sup>nd</sup> year undergraduate nurses, 3<sup>rd</sup> year undergraduate nurses and graduate nurses (Leonard et al, 2010) or registered nurses and enrolled nurses. The term has also been used to describe training programs of the same discipline e.g. physicians and general practitioners (Janssen et al, 2017).

It should be noted that IPE is primarily focused on understanding and respecting the differences between professions. It is therefore not concerned with substitution or replacement of professional roles (Barr & Waterston, 1996). This is described as transprofessional education.

There are problems associated with terminology in this field. Barr et al. (2005) described this as a “sinking in the semantics” with the field being “bedeviled by competing terms” (p.31). Suffixes and prefixes are therefore important to clarify:

**Suffixes:** The suffix *Discipline* refers to ‘subject’, ‘discipline’ or ‘field of study’, e.g. a surgeon or a physician or critical care nurse / mental health nurse; and *Profession* refers to ‘a calling requiring specialised knowledge after academic preparation’ e.g. nurse, doctor or allied health professional (Oandasan & Reeves, 2005a).

**Prefixes:** The prefix *Multi* refers to ‘side by side’, *Inter* is ‘collaborative’, *Intra* is *collaborative but within discipline* and *Trans* refers to ‘role blurring’ or ‘transprofessional’ (Oandasan & Reeves, 2005a).

Embedded in the idea of IPE is that there is shared learning which aims to “enhance understanding of others’ professional roles and responsibilities, help develop skills needed for effective teamwork and increase knowledge of particular skills and topics” (Parsell & Bligh,

1998, p.89).

Benefits of IPE are well reported in the literature and can be seen in Table 4.

**Table 4: Benefits of IPL** Adapted from (Abu-Rish et al., 2012; Bradley et al., 2009; Braithwaite & Travaglia, 2005; Drynan & Murphy, 2010; Hall, 2005; Ker, Mole, & Bradley, 2003; Lorente.M., Hogg, & Ker, 2006; Reeves et al., 2016) \*less substantiated claims reported in the literature

Benefits to the patient	Benefits to the health care system	Benefits to the health professional/health professional student
<ul style="list-style-type: none"> <li>• Enables quality, holistic, safe, patient centred care</li> <li>• Improves clarity of objectives for the patient</li> <li>• Enhances patient-family-community centres goals and values</li> <li>• Enhances patient compliance</li> <li>• Meets patient's functional status needs</li> <li>• Supports the management of complex health care needs</li> <li>• Meets multiple patient needs</li> <li>• Improves health outcomes (decreased hospitalisations, shorter stays, less medical error*)</li> <li>• Increases patient access to choice of provider</li> <li>• Delivers higher rates of patient satisfaction</li> <li>• Reduces patient mortality and morbidity*</li> </ul>	<ul style="list-style-type: none"> <li>• Greater health care efficiency (reduces duplication and hospitalisations)</li> <li>• Ensures Less fragmented care</li> <li>• Facilitates more creative and integrative responses in healthcare (diversity of team)</li> <li>• Common curricula develops a common world view (common values, language and perspectives)</li> <li>• Enables care to be delivered care across health care settings</li> <li>• Increases accountability</li> <li>• Integrates specialist and holistic care</li> <li>• Enables greater focus on preventative care</li> <li>• Less medical error*</li> <li>• Reduces health care costs*</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces the 'silo' effect in education</li> <li>• Less hierarchy, competition and conflict between professions</li> <li>• Modifies negative attitudes and perceptions of others</li> <li>• Remedies failures in trust and communication (provides for continuous communication)</li> <li>• Empowers all health professions</li> <li>• Enhances professional relationships (fosters respect)</li> <li>• Improves working/learning environment</li> <li>• Provides for greater job satisfaction</li> <li>• More positive impact on student learning, professional practice</li> <li>• Increases knowledge of other professions and their contributions/skills</li> <li>• Develops interpersonal and team working skills and collaborative competence</li> </ul>

Educational principles important in IPE include:

- Creating a safe learning environment
- Providing a real life context for practice of skills
- Providing opportunities for reflection
- Ensuring relevance learning experiences that motivate each health professions involvement.

## 4.3 Outcomes of IPE

In a Cochrane review undertaken in May 2004, they found “no conclusive evidence about the effectiveness of IPE in relation to professional practice or health care outcomes”. This was thought largely due to the lack of rigour around studies into interdisciplinary education, meaning that although a large body of literature was identified relating to IPE, “none of the studies met the inclusion criteria for the review” (Zwarenstein et al., 2004). The authors suggested that more rigorous studies were required before conclusions could be drawn.

Hammick et al's 2007 BEME systematic review found more positive than negative outcomes and suggested that “in general for these studies, learners responded well to the IPE, knowledge and skills necessary for collaborative practice were learnt and there were positive changes in behavior, service organization and patient/client care” (2007, p748). They did however find that “changes in perceptions and attitudes are more likely to show mixed results than the other outcome measures” (Hammick et al, 2007, p749) and that educators need to be aware that attitudes towards other professions may not change or even worsen following IPE. However, Paige et al (2017) showed positive attitudinal change in medical and nursing undergraduate students following a IPE simulation program.

Claims within the literature suggest the following unsubstantiated outcomes of IPE.

- changes in attitude of the professions towards each other
- a common knowledge to assist in collaboration
- changed behaviours
- improved teamwork
- improved patient care (Dent et al., 2005: Barr, 2005: Mattick and Bligh, 2003, Hammick et al, 2007).

Many of these outcomes have been illustrated in simulation learning environments and further research is required to address the issue of transference of learning from the simulated environment to the “real life” clinical environment in order to determine the volume of IPE necessary to result in changed behaviors in practice (Reed et al, 2017, Yu et al, 2016). Likewise, IPE literature has been criticised as often being individual perception based and short term (Reeves, 2016, p405).

In addition to outcomes, the benefits of IPE have been suggested as an ability to:

- share curricula (economies of scale)
- sustain viability of some programs

- optimise use of specialist teachers with limited time availability
- enable substitution amongst professions
- assist movement from one profession to another
- enhance collaboration (Dent et al. 2005).

Despite potential benefits, further research is needed to verify outcomes from IPE and ensure that outcomes do in fact improve teamwork and thus patient care and that IPE is not just occurring for economics.

## 4.4 Characteristics of IPE

Barr (2005) suggests there are eleven dimensions to consider when assessing IPE opportunities. These dimensions are summarised as:

1. Implicit vs explicit – implicit IPE occurs daily in the workplace where as explicit IPE is e.g. a workshop for a number of professions
2. Discrete or integrated – this is referring to multidisciplinary education experiences vs interdisciplinary (as discussed in the definitions section)
3. All or part – can be a whole program or part of a program
4. General or particular – this is about the focus e.g. a specific workplace, such as the operating theatre of a hospital or more generally about teamwork anywhere
5. Positive or negative – improving professional relationships or reinforcing poor relationships
6. Individual or collective – this refers to the types of outcomes and their assessment e.g. group assessment or individual
7. Work based or college based – undergrad vs postgrad, postgrad vs continuing professional development
8. Shorter or longer – duration of the education experience
9. Sooner or later – when the professionals first experience IPE
10. Common or comparative – this is about courses that focus on issues common to the professions or issues that are different and thus promote comparison
11. Interactive vs didactic – the methodology of the education used.

As clinical teachers, we need to assess opportunities for IPE and why we may want to take advantage of these. In addition, we need to be aware of the factors which affect the success of interdisciplinary ventures.

## 4.5 Requirements for successful IPE

There are a number of requirements suggested within the literature to maximise the effectiveness of IPE programs. These include:

1. Interdisciplinary Planning – this ideally should occur with all the professions who will be taught within the IPE experience. This ensures “that the needs of all the professions are taken into account equally” (Dent et al., 2005, p. 168). It also avoids feelings of resentment by one profession feeling like another knows what they need to know e.g. doctors designing a course for nurses. This also has the potential to reinforce stereotypes and attitudes.
2. Agreement on content areas suitable for IPE. Ross and Southgate (2000) suggest some areas suitable for interdisciplinary learning include ethics, epidemiology, critical appraisal skills, clinical skills, decision making and teamwork. The educators from each profession need to agree on common topics for use in the IPE they are planning.
3. Compatible aims and objectives. There needs to be compatible aims and objectives for each profession. The program cannot be designed for one profession and another profession “allowed” to join in. This is seen not as IPE but ‘tokenism’ by the other profession. The aims and objectives should be developed at the planning stage and be equally weighted.
4. Choice of Educational methodology to be used – different professions use different teaching and learning strategies and a combination of these should be chosen. In addition, methodology unfamiliar to a group can affect their ability to participate and should be identified by the educators. Methodology such as simulation, problem based learning, and role plays promote experiential opportunities and allow exploration of attitudes and teamwork. The choice of educational methodology should be made by the interdisciplinary faculty at the planning stage.
5. Facilitator modelling - The facilitators need to be champions of the IPE process (Brewer et al, 2017). Oandasan and Reeves, suggest “Faculty (e.g., teachers, tutors) play a key role in creating an environment that is supportive of the goals for IPE and indeed can act as role models for trainees” (2005, p32). They also suggest that facilitators need to take particular note of team formation and team maintenance and be “ready to encounter interprofessional friction between learners when they are working together” (Oandasan & Reeves, 2005, p32).
6. Balanced numbers between the professions (Barr, 2005). This balance prevents the needs of one profession overpowering another. However, it is also important in

some activities to have numbers that truly represent “the reality of practice” (Ker et al., 2003). In this instance, numbers may be deliberately unbalanced.

7. Learner level of experience - It is important to consider the experience levels of the various professions prior to embarking on IPE. Where one profession is vastly more experienced than another, there is the risk of this profession dominating the activities. This is not to say a mix of experience is not a rich learning environment, but rather that consideration by the planners/educators is necessary to ensure that this feature is an advantage for the educational experience not a hindrance. (Horsburgh et al., 2001).

## 4.6 Barriers to successful IPE

An awareness of potential barriers is important for educators planning IPE activities. The requirements for successful IPE as outlined in section 4.5 can also be obstacles if not considered. Additional obstacles outlined in the literature include:

- Professional cultures and stereotypes (Hall, 2005).
- Differences in status of professions – which if not recognised can affect their ability to work together (Hall, 2005).
- Organisational commitment to interdisciplinary learning (Ross and Southgate, 2000). In the hospital setting, this could be in the form of funding for the educator, which if it comes from one professional budget may not be seen as a priority for this educator to teach another profession.
- Time and space for shared activity (Ross and Southgate, 2000).
- Priorities of professions effecting focus (Ross and Southgate, 2000).

Despite these obstacles, carefully planned IPE experiences are both representative of the environment in which health professionals work, and provide rich opportunities for the different professions to learn from and about each other, whilst promoting collaboration and understanding.





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## Module 5: Assessment and Evaluation

### 5.1 Assessment

Assessment can be defined as the process of making a judgement about the level of knowledge, skills and/or attitudes of a learner (Wojtczak, 2002). When determining which assessment methodology to use, an educator must firstly determine why and when they are assessing, what they are assessing and how they will assess. They must also consider the characteristics of the assessment methodology such as the validity, reliability, feasibility and cost effectiveness.

Authors have written extensively on the topic of assessment and it is not within the scope of this manual to discuss every aspect of this vast topic area. Rather, this module aims to provide the clinical teacher with some considerations prior to implementing assessment and some potentially applicable assessment tools for the clinical skills arena.

#### 5.1.1 Why and When to Assess?

Assessment can be used to:

- provide the learner with feedback as to their performance so as to reinforce their current performance or to provide them with information to use to adjust their performance,
- determine if a learner has achieved a standard for a particular qualification,
- determine if a learner has achieved a certain level of competence,
- predict future performance,
- determine what has been learnt from a course of instruction,
- rank learners,
- measure improvement over time,
- encourage future learning,
- diagnose student learning difficulties, and,
- motivate learners.

(Newble and Cannon, 2001, Friedman Ben-David, 2005).

For some of these purposes the assessment needs to be ongoing throughout a course of instruction e.g. to provide the learner with feedback on their learning. This type of assessment is termed 'formative assessment' where "we assess in order to intervene with intent to improve" (Friedman Ben-David, 2001, p. 282).

'Summative' assessment is conducted at the end of a course of instruction and is used to make a judgment about a learner against a standard. This is not to say that summative assessment cannot provide the learner with information to use to improve their performance (Hays, 2008). It may contain information regarding strengths and weaknesses. However, it is summative in nature where a learner receives a quantified result against marking criteria that makes a judgment e.g. pass/fail, competent/not competent etc. (Friedman Ben-David, 2005, p. 282).

Formative assessment when provided as feedback, has long been recognized as one of the main influences on improving performance (Boehler et al, 2006). However summative assessment has often been criticized as driving learning and that learners can become obsessed with passing the hurdle rather than navigating the path to the end (Harrison and Wass, 2016). Educators should be aware of this when designing the type of assessment they will use for summative purposes.

### 5.1.2 What to assess?

In module 1.2 we discussed the importance of learning objectives. Not only do they assist the educator to determine the most appropriate teaching and learning strategies, but they also guide both assessment and evaluation. In order to assess if objectives have been met, the educator needs to determine which methodology is most appropriate to assess the learner's achievement of a specific objective. The more specific the objectives the more measurable and the more useful they are in assisting both the learner and the educator to understand what is required for competence (Friedman Ben-David, 2005).

In addition, Bloom's taxonomy as previously discussed (Bloom, 1956) outlines several levels of cognitive functioning. It is important to consider the level of knowledge acquisition required by the learner not only when writing learning objectives but also when determining the type and level of assessment to be used. For example, if the level of learning is at the remembering (lowest level of Bloom's taxonomy) then a simple multiple choice question may be appropriate, whereas if the level of learning required is at the analysis level then an extended match question may be more appropriate.

Likewise, the assessment should not test a higher level of learning than what was indicated by the learning objective. For example, if the learning outcome indicated that the learner would

identify the indications for inserting an intravenous cannula (remembering level of Bloom's taxonomy) then the assessment should not require them to analyse the appropriateness of an IV cannula for a specific patient (application and analysis levels).

### 5.1.3 Who will assess?

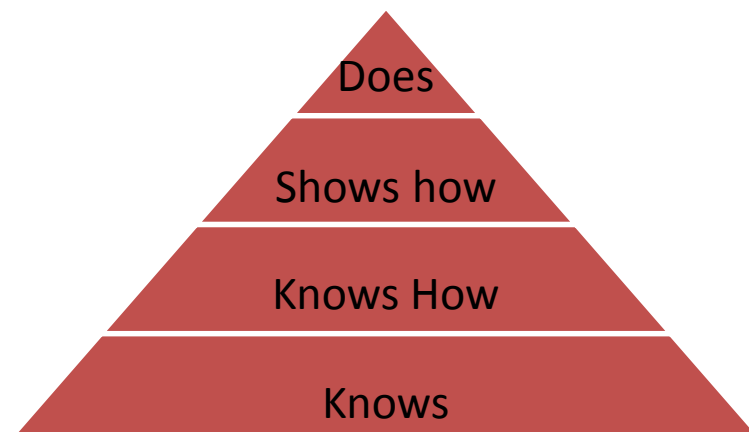
Consideration should also be given as to who will perform the assessment. Will it be a self-assessment by the learner? Will it be a peer assessment by fellow learners? Or will it be an assessment performed by the educators/facilitators or so called expert? The person to perform the assessment is one aspect that influences the decision on the type of assessment methodology to be used. For example, if the learner is going to self-assess, then an essay question would not be an appropriate assessment methodology as it requires an independent person to mark the essay. However, a portfolio which acts as a record and self-reflection device, would be appropriate for formative self-assessment.

### 5.1.4 How to assess?

George Miller in 1990 published a sentinel article that has influenced assessment in healthcare education since. He stated that no one assessment methodology was capable of assessing across the breadth of medical practice and proposed a 4 step pyramid structure to guide assessment and teaching (Miller, 1990). Miller's pyramid guides the selection of an appropriate assessment method. Demonstration of clinical skills competence falls into the 'shows how' category but this does not always predict day-to-day performance in real life ['does']. The ultimate goal demonstrated in Miller's pyramid is to perform tasks regularly in a competent fashion. Direct observation of work-based practices is therefore necessary to show how performance is integrated into practice.

See Figure 4

**Figure 4:** Miller's pyramid of clinical competency



The four levels known as Miller's pyramid range from:

- Knows (baseline knowledge),
- Knows How (is able to use knowledge),
- Shows How (is able to demonstrate competency),
- Does (what is done in real clinical practice) (Cruess et al, 2016, p181).

Assessment methodologies required to assess at the "Does" level of Miller's pyramid are Work-place based assessments, as the assessment has to occur in the authentic work environment.

Table 5 table outlines some common assessment methodologies for each of the knowledge, skill and attitude domains (although many are capable of assessing in more than one domain). A brief description of the tool and potential considerations are included. This is not intended as a comprehensive assessment methodology list, rather a brief outline of some of the more common tools used within clinical education.

**Table 5:** Assessment options and considerations

Tool	Considerations	Reference
<b>Knowledge</b>		
Multiple choice questions (MCQS)	<p>MCQs are typically made up of a stem with 4 or 5 alternative answers. One answer is correct and the other is called a distractor. Reportedly capable of testing to high levels within Bloom's taxonomy depending on the stem created.</p> <p>Main content should be in the stem and distracters should be as short as possible.</p> <p>Advantages are that MCQ's can be easily marked (including electronically) and are objective. There can be a bank of questions and these questions can be rotated into and out of tests to preserve the integrity of the test.</p> <p>Quality MCQ's are difficult to write. Care needs to be taken to avoid:</p> <ul style="list-style-type: none"> <li>• The obvious distracter that is incorrect</li> <li>• Distracters of different length</li> <li>• The negative stem</li> <li>• Use of all of the above or none of the above</li> <li>• Trick questions</li> </ul> <p>Audience Response systems can be used to implement MCQs throughout a session. There are free downloadable apps available such as Poll everywhere.</p>	Newble & Cannon (2001), Schuwirth & van der Vleuten (2004), Boland et al (2010), and <a href="https://www.polleverywhere.com/">https://www.polleverywhere.com/</a> (Accessed, August 2017).
True/False	<p>These questions usually have a stem in which correct information is provided and a statement which the student has to indicate whether it is true or false. They are often used to test basic level of knowledge acquisition.</p> <p>This methodology has been criticised for the 50/50 chance of a correct answer (i.e. even if the learner has another incorrect answer in mind they may still get the question correct). When writing these, make sure that they are in fact true or false – no ambiguity. Need to avoid negative or double negative statements.</p>	Newble & Cannon (2001), Schuwirth & van der Vleuten (2004),
Extended matching questions	<p>These have a lead in question, a list of options and some case descriptions. The learner has to choose from the list of options the best answer to apply to the case vignette, considering the question. These are very good at testing application of knowledge and problem solving. They have similar advantages to MCQ's as they are able to be scored easily and marked electronically. However likewise they are difficult to construct. An additional advantage to MCQs is their ability to increase the number of options.</p>	Newble & Cannon (2001), Schuwirth & van der Vleuten (2004), Campbell, (2011).



Tool	Considerations	Reference
Short Answer Questions (SAQs)	<p>These are open ended questions where the learner has to answer a question in their own words without options given. They are more flexible and can test creativity and attitudes.</p> <p>The disadvantage of SAQs is that they are not as easy to mark as MCQ's and require a marking schema of specific facts that the examiners are looking for and hence they are considered less reliable than MCQs. Learners also need guidance as to the amount of detail required by the question.</p>	Schuwirth & van der Vleuten (2004).
Essay	<p>Essay questions are capable of assessing problem solving, hypothesising, synthesising and higher order analysis of information. They have a similar disadvantage to SAQs in that they require expert marking. Additional disadvantage is the time required by learners to answer this type of assessment so that this type of assessment format is considered expensive.</p>	Schuwirth & van der Vleuten (2004)
<b>Skills</b>		
Objective Structured Clinical Examination (OSCE)	<p>This examination uses 'stations' to allow learners to problem solve in a "realistic" environment. The stations involve the learner undertaking clinical skills with real or "Standardised" patients in front of one or two assessors. Usually there is a checklist developed for use by the assessors to assist with objectivity. This format assesses at the "shows how" level of Miller's pyramid.</p>	Khan et al, 2013 and Khan et al, 2013.
Long Case	<p>This is a type of Viva or oral exam situation. The learner is presented with a patient to examine (usually not observed) and allowed typically 30-40 minutes prior to presenting their findings, diagnosis and clinical reasoning to the assessors. There has been extensive criticism as to the validity of this type of test and studies have indicated the need for multiple long cases to gain the same level of reliability as the OSCE.</p>	Wass, & Van der Vleuten, C, (2004), Epstein, (2007) and Wilkinson et al, (2008).
Directed Observation of Procedural Skills (DOPS)	<p>This is a checklist tool introduced by the NHS in the United Kingdom to assess junior doctors' procedural skills within the workplace. It is now used by many postgraduate medical education programs as both a formative and summative assessment.</p>	Norcini and Burch, (2007).
Mini CEX	<p>This is an observed focused interaction with a patient (approx 10-20 minutes) that occurs in the workplace as part of the practitioner's daily work. Clinical tasks that can be observed include taking a history, performing a physical examination, taking consent etc. It can be performed in a variety of clinical settings e.g. on the ward, in outpatients, in theatre or in emergency department. It is largely designed to assess clinical skills (cognitive) and attitudes. It can be used for formative or summative assessment.</p>	Epstein, R. (2007) and Norcini and Burch, (2007).

Tool	Considerations	Reference
Video Analysis	Videotaping performance and then reviewing either by peers, self or facilitators using a checklist is an alternative method of assessment. Rating scales can also be used with video analysis.	Epstein, R. (2007).
<b>Attitudes</b>		
Portfolios/Log books/Diaries	Learner selects samples of work or cases seen and records self-assessment to specific criteria. May include numbers of procedures performed, but intended to also encourage self-reflection and analysis of attitudes and feelings.	Epstein, (2007).
Case Based Discussion	Case Based Discussion (CBD) was first introduced in the united kingdom as part of the Foundation Program. It involves a trainee selecting two or three cases of which they take notes and present them to an assessor. The assessor choses one of these patients to discuss in detail considering clinical reasoning as presented in the patient documentation.	Norcini and Burch, (2007) and Epstein, (2007).
Global Rating Scales e.g. In Training Assessment forms	Often used within the workplace, when a health professional completes a specific term or rotation. Involves subjective rating of the learner's performance against a list of competencies e.g. communication, professionalism etc.	Scarff et al (2016).
Multisource Feedback	Multisource feedback involves collection of data from peers of the health professional. These peers may be senior to, at the same level or subordinate to the person being assessed. Ideally it will include workers from different professions e.g. nursing, allied health, medicine etc. A structured questionnaire is used to collect the data on observed behaviours as part of their day to day work and interaction with the individual. Data is usually collated and presented by the clinical teacher to the learner. It is thought to be most effective when it includes narrative responses.	Norcini and Burch, (2007) and Epstein, (2007), and Donnan et al, (2014).

### 5.1.5 Assessment in Simulation and Clinical Skills training

Traditionally, assessments undertaken in clinical skills training and simulation environments have used checklists or rating scales (Anson, 2009). They are commonly used to assess psychomotor skills (e.g. procedural skills such as putting in a NG tube) or non-technical skills such as communication, decision making etc.

There are a number of types of checklists that can be used in simulation and clinical skills training;

- Standard dichotomous checklists - typically rating done/not done, yes/no.
- Weighted (where some aspects are weighted higher than others e.g. mandatory criteria).

- Technical Behaviorally Anchored Checklists (where specific observable behavioural markers are assigned to a rating to help reduce the subjectivity of the rating) (Anson, 2009). An example of a behaviourally anchored checklist is the OSATS (Objective Structured assessment of technical Skill) (Martin, 1997).

Use of simulation in assessment is useful for providing a standardized situation for observers to rate. It is most often used to assess at the “shows how” level of Millers pyramid (Anson, 2009). Simulated or Standardised patients used in simulations can also be involved in rating/assessing participants by completing specially designed rating scales based as on their experience as a patient in the scenario.

Formative assessment using rating scales and checklists is appropriate. However, for summative or high stakes assessments, validated, reliable tools are required and many clinical teachers prefer to use previously developed tools as the process for determining reliability and validity of a new assessment tool is time consuming and costly.

## 5.1.6 Additional Considerations

Van der Vleuten (1996) first described the Utility Index for assessments. This was based on the notion that the utility of the assessment (usefulness) is based on the tool's validity, reliability, feasibility, acceptability and cost effectiveness. These criteria have long since been used in relation to assessment tools. However more recently, it has been argued that the utility index is better applied to an entire program of assessment rather than individual tools alone (van der Vleuten and Schwirth, 2005). When choosing assessment tool/s it is important to consider each element:

- Valid – is it measuring what it intends to measure? There are a number of types of validity. Content validity refers to the extent to which the tool measures the content of which it intends to measure. Concurrent validity refers to the validity compared to a recognized test with proven validity (i.e. how do the scores compare?). Face validity refers to its appearance (i.e. do learners think it is valid in what it is testing?). (McAleer, 2005, p. 305, van der Vleuten and Schwirth, 2005).
- Reliable – refers to the reproducibility of the scores from the assessment. e.g. intrarater reliability is when the assessment if repeatedly performed by the same assessor on the same candidate gets the same result. Interrater reliability occurs when more than one rater uses the assessment tool and gets the same result for the learner. (McAleer, 2005, p. 305, van der Vleuten and Schwirth, 2005).

- Feasible – this refers to the tools ease of use. Is it appropriate for the time available to implement the tool? Does it require extensive training of assessors? Is it logistically feasible in terms of administration?
- Appropriate – also referred to as educational impact (van der Vleuten and Schwirth, 2005) i.e. driving the learning in the intended direction. As assessment has been shown to influence student learning, does the tool chosen influence it in the desired direction e.g. does it highlight the important aspects of the course.
- Cost effective – this is linked with feasibility but in the current health climate is particularly important to ensure prior to recommending an assessment tool for implementation.

These elements are necessary to make the assessment judgments defensible. There are processes for determining validity and reliability and statistically verifying these. These processes should be undertaken when designing a new assessment tool.



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## 5.2: Evaluation

### 5.2.1 Definition

Jolly and Peyton (1998) defines evaluation as “judging of an educational process or course in order to guide future direction”. The design and development of an effective course is an ongoing process, and evaluation, both formal and informal, is therefore an essential aspect to ensure the needs of the participants and the program itself are met.

Central to the evaluation processes are values. Ruhe & Boudreau, (2013, p925) suggest that values are inherent in all aspects of the evaluation process from deciding the goals of the evaluation, what to evaluate, how to interpret the findings through to changes that are made as a result of the evaluation. Clinical teachers need to be aware of the impact of their own values when interpreting data to ensure that all stakeholders values are considered not just their own (e.g. the learners). Likewise, learner perceptions can be influenced by their emotions, relationships, perceived assessment outcomes and even mood (Schonrock-Aedema, 2013), and this should be accounted for in any analysis of evaluation data.

This module explores the essential elements of an effective course evaluation and gives examples of the types of evaluations that clinical educators may like to consider. As with assessment the process of evaluation is considered from the perspective of why, when, what and how.

### 5.2.2 Why and when to evaluate courses

Evaluation is an important part of any program or workshop to ensure continued growth and development. Evaluation is used to ensure program quality and this should be clearly and explicitly quantified to participants when undertaking any form of evaluation. Morrison (2003) explains that when a participant has a clear understanding of the purpose of why they are completing an evaluation they are more likely to provide more thoughtful data.

Evaluation has many purposes. They can be divided into program evaluation and teacher evaluation:

Program evaluation helps to determine:



- achievement of the clearly outlined learning objectives,
- whether the participants learning needs are being met,
- areas for improvement in course design, delivery and content,
- additional resource requirements,
- changes to logistic arrangements e.g. course timing, administration etc., and,
- impact of course on performance in the workplace (transfer of learning).

Teacher evaluation helps to:

- Provide feedback to facilitators and trainers as to their performance, and,
- Identify areas for teacher development

When to evaluate depends on the purpose. Ideally evaluation of individual short courses should occur as soon as possible after the completion of the course so that the experiences from the faculty perspective and participants are fresh in their minds. Some courses you may want to make changes on the go so evaluating throughout the course is necessary. Where information on the impact of a course is desired the evaluation will occur after the course when the participants have had an opportunity to implement what they have learnt on the course.

### 5.2.3 – What to evaluate

What to evaluate is linked closely with the purpose of the evaluation i.e. why you are evaluating. Morrison (2003) suggests that evaluation tools acquire two categories of information, process and outcome.

Process issues may include:

- Administration, relevant handouts, course delivery, teacher attributes, ability to ask questions, ability to answer questions, course content, clarity or relevance
- Outcome issues include:
- Participant self-ratings of their achievement of learning objectives on knowledge, skills and attitudes.
- Faculty assessment of outcomes via formal assessment processes

### 5.2.4 - How to evaluate

The methodology to evaluate again is linked to the purpose. The following examples are provided for both program evaluation and teacher evaluation.

## Program Evaluation Methodology



### Consenogram

#### **Purpose**

This tool is a quick way of measuring the whole group's perception on an issue based on individual responses to a focus question. It measures the degree of consensus between a group of stakeholders e.g. the learners (Blackbourn et al, 2011).

#### **Process**

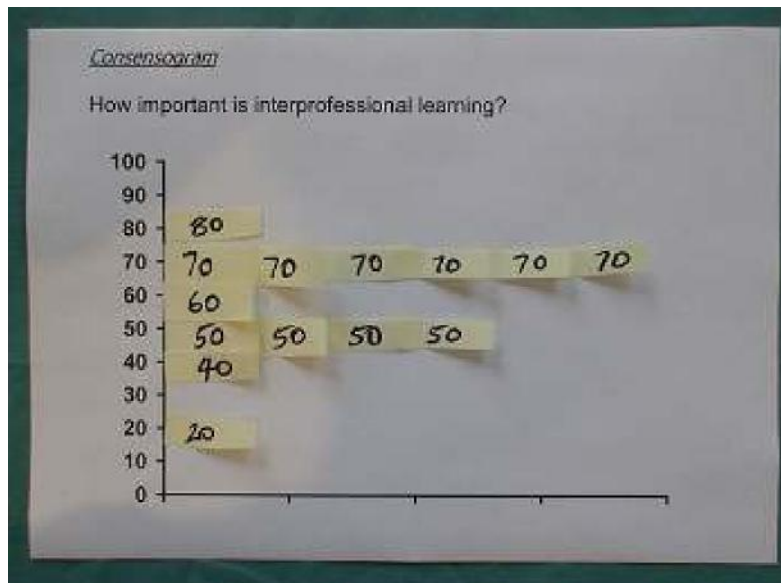
1. Prepare X and Y graph axes on a large sheet of paper
2. Write a focus question across the top
3. Provide participants with self-adhesive notes and a pen
4. Ask the focus question explaining that you are looking for an opinion expressed as a numerical value
5. The vertical axis is scaled from 0% to 100% in 10% increments
6. Participants write their responses to the questions as a numerical rating, in 10% increments, on a self-adhesive note
7. Participants are asked to come forward and place their note against the appropriate vertical scale mark. The more notes against a particular rating the longer the horizontal bar will become

#### **Product**

The consensogram provides a visual display of the entire group's response to the focus question. It is an effective tool to use before and after a workshop session.

#### **Example**

How important is interprofessional learning? (See Figure 5

**Figure 5** Example consensogram

(This tool has been modified from the Australian Academy of Science. (2007) Primary Connections- Linking science with literacy workshop, Making Connections: Facilitators Tools and Techniques (2007Trial).



## Correlation Chart

### Purpose

This is a tool that is used to measure the correlation between two separate factors on the same graph. It may be used with small or large groups. Often referred to as a “Scatter Plot” (<https://pmstudycircle.com/2014/08/what-is-a-scatter-diagram-correlation-chart/> Accessed September 2017).

### Process

1. Pre-prepare a graph on a large sheet of paper with an X and Y axes
2. The horizontal and vertical axes can be used to measure any two variables.
3. Participants place a small adhesive dot on the correlation chart which measures the judgement of the two factors

This may be repeated at the completion of an activity or workshop to gauge the growth in knowledge, skills, confidence etc.

### Product

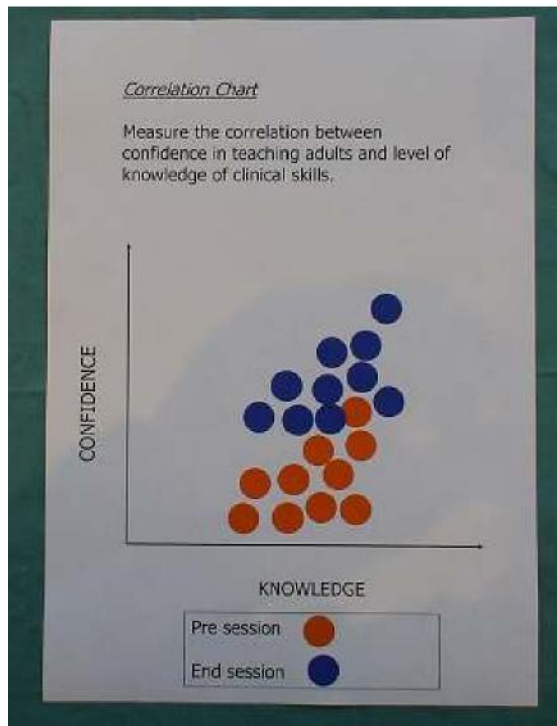
The correlation chart provides a group visual display of individual judgements of two

variables.

### **Examples**

Measure the correlation between confidence in teaching adults and level of knowledge of clinical skills. Correlation between the level of enjoyment of a workshop and the level of learning.

**Figure 6** Example correlation chart



*(This tool has been modified from the Australian Academy of Science. (2007) Primary Connections- Linking science with literacy workshop, Making Connections: Facilitators Tools and Techniques (2007Trial).)*



## **Likert Scales**

### **Purpose**

Likert (1932) proposed a summated scale for the assessment of survey respondent's attitudes. Individual items in Likert's sample scale had five response alternatives: Strongly approve, Approve, Undecided, Disapprove, and Strongly disapprove. Likert scales are commonly used to measure attitude. Likert noted that descriptors could be anything – it is not necessary to have negative and positive responses. Indeed, we see contemporary work using many classifications besides the traditional five point

classifications; the use of 3 or 7 items or some researchers use an even number of categories, deleting the neutral response. He implies that the number of alternatives is also open to manipulation (Likert, 1932).

Pett (1997) explains that Likert scales fall within the ordinal level of measurement. That is, the response categories have a rank order, but the intervals between values cannot be presumed equal. Likert scales have been discussed extensively in the literature as being open to abuse by assuming interval levels rather than an ordinal scale (Jamieson, 2004, Carifio & Perla, 2008, and Kiger, 2017).

**Product**

Likert scales are one of the most commonly used forms of assessment of workshops and programs as they provide feedback on specified foci and are quick to complete for participants and easy to analyse.

**Example**

**Table 6:** Example Likert scale ratings evaluation

Learning Objectives of facilitators course	Strongly disagree	Disagree	Slightly agree	Agree	Strongly agree
1. Understand the course philosophy and structure	▪	▪	▪	▪	▪
2. Revise Adult Learning principles and small group teaching	▪	▪	▪	▪	▪
3. Familiarise participants with each of the modules	▪	▪	▪	▪	▪
4. Practise a facilitated discussion and mini scenario	▪	▪	▪	▪	▪
5. Identify logistical considerations in conducting a clinical skills courses	▪	▪	▪	▪	▪



## Plus / Delta Chart

### **Purpose**

This is a quick and effective evaluation tool which can be used to follow an activity or process. It may be used with individuals and small groups. It involves learners identifying Plus (what went well) and Delta (what could be improved) aspect of the training (McClanahan & McClanahan, 2010).



### **Process**

1. Distribute a plus/delta chart to individuals or small groups.
2. Invite them to analyse an activity or process in which they have participated and record what went well (+) and what needs to be changed or improved ( ).
3. Ask participants to vote on which factors are the most important and that need to be changed to improve the activity or process.

### **Product**

The Plus/delta chart is a visual analysis of opinions about the quality of an activity or process, and focuses attention on what needs to be improved. See Table 7

**Table 7:** Example plus delta proforma

	
<b>Things done well</b>	<b>Opportunities for improvement</b>

### **Example**

Ask participants in a skills workshop to complete a plus / delta chart to provide feedback on the workshop facilitator.



### Harvard 1 minute paper

The Harvard 1-minute paper (Angelo and Cross, 1993) is a useful and easily implemented evaluation strategy for providing feedback to the clinical teacher from the learners' perspective. It involves asking at the end of the session two questions (or modifications of these questions):

1. What is the most useful or meaningful thing you learnt today?
2. What question/s remain uppermost in your mind as we finish this session? (Or what is the muddiest point from today's session).

This method is often used in university settings where a teacher has learners for a number of sessions but can be implemented for a single session.

### Teacher Evaluation Methodology

Individual clinical educators are encouraged to evaluate their own teaching. Brookfield (1998) suggests a model of four lenses to consider when evaluating your teaching:

- Student Lens
- Self Lens
- Peer Lens
- Literature Lens

### Student Evaluation

Brookfield (1998) suggests that any time we look at our teaching through the student lens we can learn something new. Lizzio et al (2013) suggest that the “strongest predictors of students using a deep approach to studying are their perceptions of the quality of the teaching and the appropriateness of the assessment”. Student Evaluation can be obtained through any of the program evaluation methodologies but most often it is done using a Likert scale end of course survey. An alternate approach is the use of Focus Group Interviews, which can be performed by an independent evaluator, using structured open questions, to gather qualitative data on perceptions of teacher performance (Williams and Brennan, 2004).

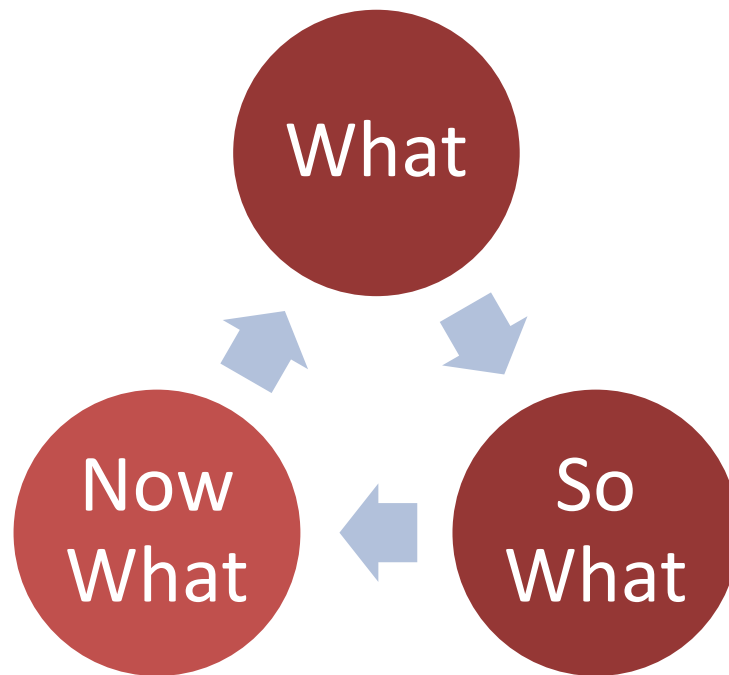
### Self-evaluation

Atkinson and Irvine (2013) suggest “It is impossible to become, and continue to be, an effective teacher without a personal commitment to **reflective practice**”. This means that

as a teacher you need to be able to develop the skill of self-evaluation. The purpose of self-evaluation is to improve teaching, professional development, improved confidence in teaching and avoiding reinforcing ineffective teaching.

A simple model to use for self-reflection was described by Driscoll (2001) for clinical practitioners to reflect on their practice. Figure 7 shows the three elements:

**Figure 7:** Model for self-reflection



1. **WHAT?** A description of the event - how did the course go from my perspective?
2. **SO WHAT?** An analysis of the event – what worked well, what could be improved?
3. **NOW WHAT?** Proposed actions following the event – how will I change my teaching next time.

### Peer Evaluation

This involves having a peer observe your teaching and provide you with feedback. The peer can use a proforma to provide feedback to you on specific aspects of your teaching. This proforma can be developed by you to focus on the important aspects you would like feedback on. Barnard (2011 and 2016) suggests a 4 step process:

1. Pre observation discussion – negotiation on purpose of observation and focus
2. Observation
3. Reflection and Feedback
4. Implementation – where agreed upon strategies for change are implemented.



Peer evaluation is helpful for not only the teacher being observed but also the teacher making the observations.

### Literature Lens

Brookfield (1995) suggests that the literature or scholarly lens can help to not only suggest different possibilities for practice, but also help us to understand better what we already do and think. Using the literature lens to evaluate our teaching requires us to read up to date educational literature to determine best practice, innovations and outcomes of clinical teaching. Ideally you will identify some journals that may be worth as a starting point. The following list are examples of journals you may be interested in reviewing (not an exhaustive list as there are many relevant journals):

- Medical Education
- Medical Teacher
- Clinical Teacher
- Academic Medicine
- Focus on Health Professional Education
- Journal of Continuing Education in the Health Professions
- Journal of Nursing Education and Practice
- Simulation in Healthcare



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## Module 6. Designing a Course

At the end of this module a session/course proforma is included for your use when designing a course or clinical skills/simulation training session. The proforma can be used to assist in designing a one hour clinical skills session through to a more advanced two-day simulation course.

The following sections discuss each stage in the process of designing a course.

### 6.1 Target audience

The first step is to answer the following questions:

**1. Who is the target audience?**

You need to know who you will be teaching. Is it a single profession e.g. a group of doctors or a group of nurses, or is it interdisciplinary? Are the participants all at the same level of training e.g. all interns, or all registrars? You will need to know this in order to undertake your needs analysis (see 6.2). Are you developing a course for a specific target group or are you developing a generic course that could be used for a number of target audiences?

**2. How much time do you have available?**

The time available is important to ensure that your objectives are realistic and achievable within the timeframe.

### 6.2 Needs analysis

The literature suggests that in relation to continuing professional development programs “learning is more likely to lead to change in practice when needs assessment has been conducted” (Grant, 2002). A needs analysis “ensures that training is the appropriate solution to a performance deficiency” (Cedaka, 2011, p29).

Also known as a training needs analysis (TNA), it is “a formal process of identifying a training gap and its related training need. It involves an assessment of the training requirements of any target group in terms of number of trainees, their educational and professional backgrounds, their present level of competence and the desired behaviour or

skill level acquired at the completion of any instigated training.” (Staniland et al, 2011, p36).

Gillam and Murray, 1996 define several forms of educational needs analyses including:

- Felt needs – which refers to self-reported needs
- Expressed needs – gleaned from observation
- Normative needs – which are defined by experts
- Comparative needs – which are gained by comparisons of groups.

Dickerson (2014) also suggests it is important to not only ask “what are the learning needs” but also “why are they needed”. The ‘why’ aspect can come from reviewing documents such as risk analysis data, quality improvement reports and state or national data.

Sometimes a needs analysis is not possible due to time constraints or access to/availability of learners. In this instance you will be starting with an understanding of the normative needs. You will be able to validate these at the beginning of the course when you discuss the session aims and objectives with the participants. Alternatively, an external group may have established the need for your program e.g. a university, postgraduate colleges.

If you do have time to undertake a needs analysis there are a number of methods available to you as outlined by Grant (2002):

- Gap or discrepancy analysis: comparing performance and competencies by self or peer assessment, or objective testing
- Individuals reflecting on their performance during or after an event
- Self-assessment by diaries, journals, log books, etc.
- Peer review
- Observation
- Critical incident review and/or significant event auditing
- Practice review, for example review of notes, records, prescribing, letters, referrals, investigation requests, etc.

Questionnaires are the most commonly used method for determining learning needs. Alternatively, you may decide to use a focus group interview methodology where you use structured open ended questions with a small group of the target audience to validate your ideas and establish learning needs.

## 6.3 Aims and Objectives

Once the need for the program has been established, you are able to determine the overall aim and specific objectives of the session/course.

An aim is a global statement that outlines to the learner the overall goal or intent of the session (Newble and Cannon, 2001). For example, an aim may be “to learn how to apply a plaster cast to a patient with a broken arm”.

Learning Objectives are more specific and should be a guide to the learner and facilitator as to the specific outcomes intended. Bloom was one of the earliest to describe learning objectives as "explicit formulations of the ways in which students are expected to be changed by the educative process" (Bloom, 1956, p. 26). **(Refer to Module 1.2 for more on learning objectives).**

For the learner, learning objectives:

- Provide a focus for the learner by clearly articulating the type and depth of learning in a topic area and what is expected
- Provide a link between what is happening in the period of instruction and the learning intended (this helps to reduce anxiety in the learner)
- Provide a structure upon which the learner can reflect at the end of the course to determine what learning gaps persist and what they have achieved
- Clarify what will be assessed
- Help the learner to stay on task
- For the instructor/educator/teacher, learning objectives:
- Help to plan the instruction so that it focusses on the important knowledge, skills and attitudes required to achieve the objectives
- Direct the choice of teaching strategies – e.g. if you want someone to learn how to insert an IV then they need an opportunity to practise rather than a lecture
- Direct the assessment strategies – you need to make sure that you are assessing the achievement of the objectives – has the learning occurred (Peyton, 1998).
- Provide a framework to evaluate the success of the educational intervention

In order to be effective, learning objectives need to be specific, measurable, achievable and relevant (Doran, 1981). When you are writing an objective you should indicate the behaviour that will be required by the learner. You should consider the knowledge, skill or attitudes that you desire as an outcome **(refer to module 1.2.1 what is needed for learning and the three learning domains).**

For example:

By the end of the course the participant will:

1. Describe the principles of plaster cast application (knowledge)
2. Apply a plaster cast to a patient with a forearm fracture (skill)
3. Develop a management plan with the patient that appreciates the impact of the plaster cast on their lifestyle (attitude).

As previously discussed (Module 1.2.1) there are taxonomies to describe learning at various levels within the 3 domains of learning. Educators need to consider these levels when writing their learning objectives so that appropriate verbs are chosen to clearly indicate the level of learning required. The example objectives above are now classified according to their level of learning:

1. Describe the principles of plaster cast application (**knowledge – level 1 remembering**)
2. Apply a plaster cast to a patient with a forearm fracture (**skill – level 1 imitation**)
3. Develop a management plan with the patient that appreciates the impact of the plaster cast on their lifestyle (**attitude – level 2 responding**).

It is important to be realistic when writing learning objectives as there is no point in having multiple objectives that you are not able to achieve within the timeframe or learning objectives that are at too high a level and not achievable by the learner.

## 6.4 Teaching and learning strategies

Once the learning objectives have been written you will need to choose the appropriate strategy to assist the learners to achieve the objectives. As discussed in previous modules, you will also need to take into consideration the applicable learning theories e.g. experiential learning, and adult learning theories which are relevant to your session/course. It is important to choose your strategies in such a way to allow for:

- Ongoing engagement of the learner – this will require variation to maintain attention of the learner
- Opportunities to interact and learn from each other
- Opportunities to practise where psychomotor skills are concerned
- Opportunities for feedback.

You should also consider if pre reading or pre course activities are necessary to achievement of any of the learning objectives. For example, you may want



participants to have a baseline understanding or knowledge of an area prior to the course.

## 6.5 Session/Course Design

At this stage you need to develop the teaching strategies and learning activities into a session/course. This involves determining:

- Timing of activities – time required to adequately complete the activity or achieve the objectives
- Sequencing – in what order should activities be timetabled to have maximal impact and ensure flow and connectivity. This involves grouping (Newble and Cannon, 2001)
- Priorities – what is essential to know, do etc. before moving on to something else.

## 6.6 Resources

The next stage in the course design is to identify the resources, equipment necessary for the course. This may include:

- Environment – which rooms etc. do you need
- Teaching resources e.g. whiteboard, projector, part task trainer, handouts etc.
- Equipment e.g. IV syringes, ECGs, Plaster of Paris
- Administration requirements – e.g. attendance lists.

A table has been included in the proforma at the end of this module which may assist you. You may also have to design some resources e.g. case examples, scenarios etc. to assist the learners to conceptualise issues.

## 6.7 Staffing requirements

Depending on the course you are designing you may need more than yourself to conduct the course. You may also require specific expertise. This will become obvious once learning objectives and strategies have been decided.

## 6.8 Assessment

Formative assessment in the form of feedback to participants should be scheduled into the session/course. As the facilitator you will need to consider when the most appropriate times

for this are and who will be giving the feedback e.g. facilitator or peers. Refer to the feedback module for ideal requirements of effective feedback e.g. timing.

In regard to summative assessment, appropriate valid, reliable, feasible methods of assessment must be chosen for each of the learning objectives. Self-assessment of achievement of learning objectives by participants is one method to determine if desired outcomes have been achieved, albeit subjective. More objective methods such as OSCEs (Objective Structured Clinical Examinations) and Mini Cex (mini clinical examinations) require time, planning and validation prior to implementation. Refer to the Assessment and Evaluation (**Module 5**) for more information on this topic.

## 6.9 Evaluation

Evaluation is a crucial component of course design and implementation. How will you know if the course has achieved its objectives, been a positive experience for the learners etc.? Detailed information regarding evaluation is given in **Module 5**.



**Target Audience**

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**Time available for the course**

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**Course Aims**

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**Course Learning Objectives:**

By the end of the course participants should be able to:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Teaching Strategies Design**

Learning Objective	Teaching/Learning Strategy

**Pre-reading Yes/No**

**Resources**

Learning Objective	Teaching/Learning Strategy	Resources Required

**Teaching staff Required** Yes/No

**Timetable** – Schedule

**Assessment** - Yes/No (If yes, complete table)

Learning Objective	Assessment Methodology

**Evaluation Methodology**



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