

Clinical Skills Facilitator's

BASIC COURSE MANUAL 2007

Preface

In 2007 St Vincent's (Melbourne) was commissioned by the Department of Human Services (DHS) to design, develop and implement a training program for clinical skills trainers within Victorian Hospitals.

The project aims to equip Victorian health professionals, specifically hospital clinical educators, with the skills and knowledge required to deliver simulation-based clinical skills training.

The two courses offered are:

- The Basic Course which focuses on educators who currently use or intend to use part task trainers to teach clinical skills and the basics of scenario training.
- The Advanced Course which is for participants who have completed the Basic Course and who would like to progress to the advanced skills required to conduct medium fidelity simulation training.

The information in this manual is provided to participants to complement training provided in the Basic Course and as a resource in their workplace.

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- Debbie Paltridge, from Health Education Innovative Solutions for her tireless efforts as the primary author of the Clinical Skills Facilitator's Basic Course Manual.
- Robert O'Brien, Tess Vawser and Felicity Hutton at St Vincent's Education Centre for their contributions towards this manual.

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

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Clinical Skills Facilitator's Basic Course Manual

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Chapter 1. Understanding “the Terms”

Author: Debbie Paltridge

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.

Term	Definition	Reference
Education		
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. These are described in Chapter 2 of this manual.	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</i> (2e) 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.	http://www.nwlink.com/~donclark/hrd/history/pedagogy.html

Term	Definition	Reference
Learning Objective	Statements that are used to describe the intended change in behaviour of a learner following a learning activity. They are sometimes referred to as Behavioural Objectives. Written correctly they should be specific and measurable. Learning objectives assist educators to then design the learning activities/strategies, assessment and evaluation to achieve these objectives. The term learning objective and learning outcome are often used interchangeably.	Chapter 21: Study Guides, p196. In Dent, J and Harden R. (2005). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.
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 but the three broad types are behaviourist, cognitive and constructivist approaches (see below).	Chapter 20: Instructional Design+, p186. In Dent, J and Harden R. (2005). A practical Guide for Medical Teachers. 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

Term	Definition	Reference
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 schema 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>Constructivist 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. Constructivist teaching methods such as high fidelity simulation are especially suited to dealing with ill-defined problems through reflection-in-action. They are more suited to engaging and meeting the learning needs of experienced learners. There is greater scope for integrating complex skill development such as teamwork, leadership, effective communication, and decision-making into the curriculum.</p> <p>In essence, the constructivist approach to instructional design promotes transferral of knowledge, skills and attitudes to new situations. It acknowledges pre-existing knowledge and skills and builds upon this foundation.</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
Curriculum	The written plan or framework for the overall course of study/learning. Has elements of content, teaching and learning strategies, assessment and evaluation.	Cantillon, P Hutchinson, L and Wood D. ABC of Learning and Teaching in Medicine. (2003). BMJ Publishing Group: London.

Term	Definition	Reference
Learner Centred	Learner centred approach puts the learner in the pivotal position and encourages the learner to take responsibility for their learning by being an active participant in the learning experience. The learner is involved in determining the learning objectives, and in exploring and reflecting throughout the leaning activities.	Weimer, M. Learner Centered Teaching. (2002). Jossey-Bass: New York
Experiential Learning	Used to describe learning based on Experience. There have been several models including that by Kolb, which describe a cyclical process in which learners experience, reflect, conceptualise and plan.	Cantillon, P Hutchinson, L and Wood D. ABC of Learning and Teaching in Medicine. (2003). BMJ Publishing Group: London.
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. This is an important planning activity for all educators.	
Multidisciplinary	Where two or more health professionals from different disciplines learn side by side.	Barr, H. (2001). U.K. Centre for the Advancement of Interprofessional Education. Personal communication.
Interdisciplinary	<p>Where two or more health professionals from different disciplines learn “from each other and about each other in order to cultivate collaboration and professional insights”.</p> <p>The terms multidisciplinary and interdisciplinary are often used interchangeably. In addition, many programs purporting to be interdisciplinary are in fact multidisciplinary and the subtle difference in these two definitions is important to consider when designing true interdisciplinary education experiences.</p>	Barr, H. (2001). U.K. Centre for the Advancement of Interprofessional Education. Personal communication.

Assessment		
Term	Definition	Reference
Assessment	The process of making a judgement about the level of knowledge, skills and/or attitudes of a learner.	Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 1. Medical Teacher. 24;(2):216-219.
Formative Assessment	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.	Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 1. Medical Teacher. 24;(2):216-219. Newble D and Cannon R. A handbook for medical teachers. 4 th Ed. Kluwer Academic Publications, Netherlands.
Summative Assessment	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: <ul style="list-style-type: none"> • Judging mastery of knowledge and skills • Ranking learners • Allowing progression to the next level within a course • Measuring improvement over time • Diagnosing learners with difficulties • Setting standards • Quality control for the public • Guiding learners 	Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 1. Medical Teacher. 24;(2):216-219. Newble D and Cannon R. A handbook for medical teachers. 4 th Ed. Kluwer Academic Publications, Netherlands.

Term	Definition	Reference
Self Assessment	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.	Newble D and Cannon R. A handbook for medical teachers. 4 th Ed. Kluwer Academic Publications, Netherlands.
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. Medical Teacher. 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. Medical Teacher. 24;(2):216-219.
Performance	Performance is what is done in real life under varying conditions and times. There can be misunderstandings in the use of the terms competency and performance and in their application in the assessment arena.	Wojtczak, A. (2002). Glossary of Medical Education Terms: Part 5. Medical Teacher. 24;(6):658-660.

Term	Definition	Reference
Feedback	<p>Stenglehofen defines feedback as “information that a system uses to make adjustments in reaching a goal”.</p> <p>Feedback is a type of formative assessment aimed at improving the learner’s performance in the future. 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).</p>	<p>Stenglehofen, J (1993) Feedback (chapt 7) p 153- 159, in Teaching students in clinical settings. Chapman and Hill.</p> <p>Peyton, J. Teaching and learning in medical practice. (1998). Manticore Europe Ltd.</p>
Evaluation	<p>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, where as evaluation is used to describe the process for judging the program. The student should be an active participant in the program evaluation.</p>	<p>Cantillon, P Hutchinson, L and Wood D. ABC of Learning and Teaching in Medicine. (2003). BMJ Publishing Group: London.</p>

Clinical Skills		
Term	Definition	Reference
Clinical Skills	The term clinical skill encompasses a wide range of psychomotor tasks required for the assessment and management of patients, eg. 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). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.
Clinical Skills Laboratory	An environment specifically designed or designated to allow learners to practice 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). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.
Part Task Trainer	A part task trainer is a model designed to allow the practice of a specific skill or part of a task. An example of this is an 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 more high 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). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.

Term	Definition	Reference
Scenario Based Learning	<p>This is the use of clinical scenarios (or cases) to contextualise skills learning (sometimes referred to as case based learning). “Scenario-based learning puts the learner in a situation or context and exposes them to issues, challenges and dilemmas and asks them to apply knowledge and practice skills relevant to the situation” (University College London see ref). Scenario based learning can involve the use of actors, part task trainers or simulators.</p>	<p>http://www.ucl.ac.uk/learningtechnology/content/sbl/</p>
Role Play	<p>A teaching strategy where learners act out pre determined roles. Often used to illustrate particular points of learning in the affective domain eg communication skills.</p>	<p>Peyton, J. Teaching and learning in medical practice. (1998). Manticore Europe Ltd.</p>

Simulation		
Term	Definition	Reference
Simulation	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.	Chapter 23: Simulators and simulation based medical education, p211. In Dent, J and Harden R. (2005). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.
Simulator	This term is used to describe educational tools 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 tool. The degree of technology is also linked to the fidelity of the tool (see definition below).	Chapter 23: Simulators and simulation based medical education. p211. In Dent, J and Harden R. (2005). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.
Simulated Patient	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. Actors need to be specially trained not only in the condition they are to act but also in the interaction with the learner.	Chapter 8: Teaching in the clinical skills centre, p66. In Dent, J and Harden R. (2005). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.

Term	Definition	Reference
Virtual Reality (VR)	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.	Chapter 23: Simulators and simulation based medical education, p211. In Dent, J and Harden R. (2005). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.
Debriefing	This term is used to describe the discussion that takes place post simulation. It is a crucial element of high fidelity patient simulations using manikins but can also be used after simulated patients are used. It is a forum for reflection, feedback and review of learner performance.	Chapter 23: Simulators and simulation based medical education, p211. In Dent, J and Harden R. (2005). A practical Guide for Medical Teachers. Elsevier Churchill Livingstone: London.
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 matches the appearance and behaviour of the real system</p>	<p>Beaubien, J & 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>Ker, J, & Bradley, P. (2007). Simulation in Medical Education. Association for the study of medical education. Edinburgh: ASME medical education booklet.</p>



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- Cantillon, P Hutchinson, L and Wood D. ABC of Learning and Teaching in Medicine. (2003). BMJ Publishing Group: London.
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Notes



Chapter 2. Adult Learning Principles

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As described in the glossary, Malcolm Knowles first introduced the notion of andragogy or adult learning in the early 70's and since then the adult learning principles have had a profound influence on the practice of education of adult learners. They are inherent to the notion of "learner – centred" instruction, where the learner is viewed as an active participant in the learning interaction. These principles are relevant to health professional education and in particular to clinical skills and simulation training.

Firstly Knowles outlined 5 assumptions of how adults learn (Knowles, 1973). These assumptions can be summarised as:

1. As a person matures they move from being dependent to being self directing. They are therefore able to determine their own learning needs
2. An adult has a vast range of experiences accumulated over their lifetime which provides both a context and a resource for new learning
3. Adult's readiness to learn is linked to the applicability of the learning to their current life
4. Adults are more problem centred, that is they want learning relating to a problem they encounter in everyday life
5. Adults are more motivated to learn by internal factors such as desire to succeed, personal goals etc than external factors such as rewards

Since Knowles' original work, Knowles and other authors have developed principles of adult learning which should be used to guide adult learning activities (Cantillon et al, 2003). These can be summarised below:

- An effective educational climate should be established which allows the learners to feel safe and encouraged to express themselves without judgement
- Learners should be involved in determining their own learning needs so as to encourage their intrinsic motivation to learn. This process also helps to assist self reflection
- Encourage learners to determine specific learning objectives
- The learners should be involved in planning the methods to ensure relevance to their learning needs. This makes the learning experience a collaborative one between learner and teacher/facilitator
- Learners should be encouraged to identify appropriate resources to assist their learning
- Learners should be assisted to carry out their learning plans so that objectives are achieved
- Learners should be involved in evaluating their learning.

How then are these principles put into practice? Table 1 outlines some examples of how these principles could be incorporated into a course.

Table 1 – Application of Adult Learning Principles and Assumptions

Adult Learners	Application to courses
Have prior learning and experience	<p>Pre-course preparation includes materials that promote reflection on past experiences and practices. A case study with short answer questions to facilitate this reflection could be used.</p> <p>Group discussions provide opportunities for learners to draw on their own experiences and to learn from each other as well as the teacher.</p>
Are self directed learners	<p>At the commencement of a course, learning objectives should be reviewed by the learners to facilitate inclusion of personal learning goals where possible.</p> <p>Choice in learning activities allows opportunities for participants to choose activities which will address their individual objectives and suit their learning styles.</p>
Learn most effectively when they perceive a need for learning	<p>Inclusion of opportunities to reflect on individual work practices and environments will assist in establishing a need for the learning.</p> <p>A trigger case example from real life can help to establish relevancy for the learners.</p>
Prefer problem-centred approaches	<p>Case-based scenarios which require practical or theoretical problem solving responses provide both relevance to the adult learner, as well as an opportunity to actively engage in problem solving techniques.</p>
Self Evaluation	<p>Simulation training which incorporates debriefing provides an opportunity for reflection on action. This encourages self evaluation.</p> <p>Self evaluation activities can be incorporated into courses. This may take the form of a self administered questionnaire. Repetition of a pre course case study later in the course can assist in facilitating reflection of learning as a result of the course.</p>
Require Feedback	<p>Opportunities for feedback on performance should be incorporated into courses. This feedback can be from instructors or peers</p>

Adult Learners	Application to courses
Value experiential learning opportunities	Clinical skills and simulation courses provide opportunities for hands on experience. This is also the case where learners are involved in case based discussions and problem solving activities. Strategies such as the “lecture” where learners are passive recipients of information, should be avoided.



References:

- Cantillon, P., Hutchinson, L., & Wood, D. (2003). *ABC of Learning and Teaching in Medicine*. London: BMJ Publishing Group.
- Kaufman, D., & Mann, K. (2007). *Teaching and learning in medical education: how theory can inform practice*. Edinburgh: ASME: Association for the Study of Medical Education.
- Knowles, M. (1973). *The Adult Learner: A neglected Species*. Houston: Gulf Publishing Company.
- Knowles, M. (1980). *The Modern Practice of Adult Education: from Pedagogy to Andragogy* (2nd ed.). New York: Cambridge Books.
- Peyton, J. (1998). *Teaching and learning in medical practice*. Great Britain: Manticore Europe Ltd.



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Chapter 3. Small Group Theory

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Small group teaching 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 chapter includes a discussion of:

- Small group theory
- Problems associated with small group teaching
- Strategies to assist the effectiveness of small group teaching.

3.1 Small Group theory

3.1.1 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 7 and 8 as numbers less than this can be threatening, and more than this and group members can avoid participation (McCrorie, 2006).

The specific number in the group is less relevant than the characteristics of small group learning which is occurring. 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

In small group instruction the teacher is a facilitator, assisting 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”.

3.1.2 Advantages of Small Group Instruction

There are many reasons for adopting a small group teaching 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

3.1.3 Group Dynamics

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 problem solve together. Agreement and consensus are characteristics.
4. **Performing** – literature suggests not all groups reach this stage but if they are the group has become more strategic, has clear understanding of their goals, and has developed autonomy.

Later Tuckman added a 5th stage known as “adjourning” which describes the break up of the group at the end of the task.

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 progression 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).

3.1.4 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 chairperson, secretary and treasurer. 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.

3.1.5 Facilitator roles

There are a number of models of facilitator roles 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).

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. a circle 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 (1979) describes four roles that a tutor can adopt;

1. instructor – there to impart knowledge
2. devils 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.

3.2 Common problems in small group discussions include:

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. Judgemental responses to participant input
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
4. A participant who is not taking the activity seriously and jokes about undermining the group activity
5. Lack of participation in discussion "silence"
6. Participants want solutions to problems rather than to discuss and problem solve together.

3.3 Strategies to assist your facilitation of small groups

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

3.3.1 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 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.

There may be some activities suited to small groups within the larger group. Your role here is to move around the room making sure you are assisting each group with the task. These are sometimes referred to as “buzz groups” (Newble et al, 2001).

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).

3.3.2 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 as the facilitator you set the scene or the task/purpose of the discussion
2. Dialogue – where you promote discussion and listen
3. Closure – at the end of the discussion where you provide a summary of key points.

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

During the dialogue session 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).

3.3.3 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 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.

3.3.3 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)

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. This technique can also be used to elicit other group members when one participant is dominating the conversation.



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Notes



Chapter 4. Interdisciplinary/Interprofessional Education

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Interdisciplinary or interprofessional education “was 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, 1988) actively promote interprofessional education (Kaufman, 2001).

This chapter outlines the theory underpinning interdisciplinary education, the characteristics or dimensions of this type of education and the requirements for success.

4.1 Definitions

As previously outlined in the glossary, the terms multidisciplinary (or multiprofessional) and interdisciplinary (or interprofessional) education are often interchanged incorrectly and clarification of terminology is essential so that expectations are clear, to not only participants, but educators alike. Multidisciplinary can be defined as where two or more professions learn side by side. Interdisciplinary on the other hand is where two or more professions learn “from each other and about each other in order to cultivate collaboration and professional insights” (Barr, 2001).

Clearly the intent behind interdisciplinary education is quite different to that of multidisciplinary education. This is not to say that there is not a place for multidisciplinary education experiences and that indeed some learning from each other could still occur in this setting. However, true interdisciplinary education experiences require certain characteristics to ensure success.

For the remainder of this chapter the focus will be on interdisciplinary education.

4.2 Underpinning theory

The literature does not provide a unique theoretical basis to interdisciplinary education. In fact, Barr (2005, p. 17) states that “reports on interdisciplinary education tend to be light on theory”. The theoretical perspectives of interdisciplinary education must be drawn from within education theory in general. Adult learning principles, as outlined in previous chapters, can be modelled within interdisciplinary education, in areas such as:

- Provision of a real life context for practice of skills
- Opportunities for reflection
- Provision of relevance and hence motivation to each of the health professions involved in the interdisciplinary education.

In addition, theories underpinning experiential learning, problem based learning, role play, simulation and teamwork are also relevant to interdisciplinary education.

4.3 Outcomes of Interdisciplinary Education

In a Cochrane review undertaken in May 2004, they found “no conclusive evidence about the effectiveness of interprofessional education 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 interdisciplinary education, “none of the studies met the inclusion criteria for the review” (Zwarnstein et al., 2004). The authors suggested that more rigorous studies were required before conclusions could be drawn.

Claims within the literature suggest the following unsubstantiated outcomes of interdisciplinary education:

- 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).

In addition to outcomes, the benefits of interdisciplinary education 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 interdisciplinary education and ensure that outcomes do in fact improve teamwork and thus patient care and that interdisciplinary education is not just occurring for economics.

4.4 Characteristics of Interdisciplinary Education

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

1. Implicit vs explicit – implicit interdisciplinary education occurs daily in the workplace where as explicit interdisciplinary education 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 interdisciplinary education
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 educators, we need to assess opportunities for interdisciplinary education 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 interdisciplinary education

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

1. Interdisciplinary Planning – this ideally should occur with all the professions who will be taught within the interdisciplinary education 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 interdisciplinary education. 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 interdisciplinary education 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 interdisciplinary education 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 - Jones (2006) suggests that modelling of effective interdisciplinary communication by facilitators is also essential for effective interdisciplinary education. The facilitators also need to be champions of the interdisciplinary education process.
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 interdisciplinary education. 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 Obstacles to interdisciplinary education

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

- Differences in status of professions – which if not recognised can affect their ability to work together (Goble, 2001)
- Organisational commitment to interdisciplinary learning (Ross and Southgate, 2000). In the hospital setting, this could be in 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 interdisciplinary education 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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Notes



Chapter 5. Giving Effective Feedback

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5.1 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). Feedback is the most essential requirement for learning and the importance of positive feedback for learning has been well established (Kilminster et al., 2002). 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 facilitator.

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 “informed, non evaluative, and objective” (Ende, 1983, p. 779). Boehler et al., 2006 show that satisfaction ratings by learners following education are higher where praise is given vs feedback. However they suggest that learner satisfaction ratings are not an accurate measure of the quality of the feedback given.

5.2 Characteristics of Effective Feedback

Giving feedback is a skill in itself, which requires the educator to have both background knowledge and an opportunity to practice. 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. 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).

The 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. Feedback 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. 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. 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).

5.3 A model for giving feedback

As previously stated feedback is a skill and requires individual practice. Developing your own personal style for providing feedback is also important. 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
2. The learner is asked what went well and why
3. The facilitator/teacher says what went well and why
4. The learner is asked what could have been done better and why
5. The facilitator/teacher says what could have been done better and why
6. The facilitator/teacher summarises the strengths and up to 3 things to concentrate on.

Throughout this course you will have an opportunity to give your peers feedback and practice this skill. You will also see feedback modelled by the facilitators. A proforma has been developed to assist you with providing feedback and you may wish to develop something similar for your own practice upon return to the workplace.

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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Notes



Chapter 6. Designing a Course

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At the end of this chapter a module proforma is included for your use during the course and when you return to your workplace. 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 principles involved are the same and you will practice the process during the 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?
2. How much time do you have available?

The target audience will assist you in determining the learning needs of the group and the time available is necessary to make sure that you are realistic with the objectives that you set. You may have been asked to teach a specific skill to a specific target group, or you may have identified a need in a specific group and are now designing a course around this.

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). 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.

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.

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. They should be measurable and as such assist us to determine if learning has occurred (Peyton, 1998). 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 (Newble and Cannon, 2001).

For example:

By the end of the course the participant will:

1. Understand 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).

Knowledge objectives are most commonly written taking into account Bloom’s taxonomy (1984) of levels of cognitive functioning. These include:

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation.

It is important to consider the level of acquisition of knowledge required by your target audience. Do you want them to be able to recall facts, or do you want them to be able to apply the facts to a novel situation.

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.

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 chapters 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 etc
- Equipment e.g. IV syringes, ECGs, Plaster of Paris
- Administration requirements – e.g. attendance lists.

A table has been included at the end of this chapter 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.

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. It is not within the scope of this manual to cover all aspects of assessment however those interested in assessment may find Dent and Harden 2005 a good starting point.

6.9 Evaluation

Evaluation is a crucial component of course design and implementation. Detailed information regarding evaluation is given in Chapter 10.



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Designing a Course Proforma



1. Target Audience

2. Time available for the course

3. Course Aim

4. Course Learning Objectives

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

5. Teaching Strategies Design

Learning Objective	Teaching/Learning Strategy

Pre-reading Yes/No

6. Resources

Learning Objective	Teaching/Learning Strategy	Resources Required

7. Staff Required Yes/No

8. Course Design/timetable

9. Assessment Yes/No

10. Evaluation



Notes



Chapter 7. Teaching Clinical Skills

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As previously defined, 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.

Traditionally health professionals learnt the majority of their clinical skills in the hospital setting on real patients. 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 two models that could be used by a facilitator in their own educational practice.

7.1 Educational Theories relevant to teaching clinical skills

The educational theories relevant to teaching clinical skills are drawn from psychomotor theories. 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
3. Verbalisation – where the learner needs to hear the steps of the skill verbalised
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.

Similarly, Gagne describes three phases in instructional design relevant to teaching a technical skill including:

1. Cognitive phase – where the learner is developing cues from the facilitator
2. Associative phase – where there is integration of component parts
3. Autonomous phase – where the skill becomes automatic enabling other cognitive phases to be addressed.

Joyce and Showers (1980) emphasise the need for learning a psychomotor skill in context, in real time and with feedback and supervision.

Gentile (1972) describes two stages in learning a skill:

1. Getting the idea of the movement – this is where the learner needs to understand the need for the skill. In addition, they need to manage the stimuli within the environment that affect the performance of that skill. Gentile describes two types of skills; a closed skill in which the environment is relatively stable and an open skill in which the environment is constantly changing. For example learning how to perform a surgical hand wash (closed) vs. putting in an IV in an elderly confused patient (open)
2. Fixation/diversification – where the person practises the skill and learns to be able to modify it according to the environment.

Another central theory to 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 (Wooley 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. 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).

Another debate in the literature is around the issue of whole skill training vs part skill training. De Young (2003) suggests that the evidence would recommend that the part skill training method be used for the more complex skills while the whole skill training be used for the relatively straightforward skills. This requires the facilitator to analyse the skills to be taught and determine the level of complexity of that specific skill.

7.2 Models for teaching clinical skills

Using these theories a number of models have been described for teaching 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 with learner explaining the steps
4. Learner demonstrates the procedure under supervision.

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.

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

1. Modelling – can be done by giving learners a DVD 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 practice
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 many settings. The George (2001) and Peyton (1998) models are more readily adapted to any clinical skills setting.

7.3 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 much support for teaching the two components together to promote this awareness of both aspects being equally important. Kneebone et al, 2002, have developed an innovative model to teaching clinical skills which incorporates 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 incorporating the communication aspect into the demonstration by the facilitator and subsequent practise by the learner.

7.4 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 etc. 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).



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Notes



Chapter 8. Scenario-based learning

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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 chapter explores the educational theory underpinning scenario based learning and some factors to consider when developing scenarios.

8.1 Definition

The terms case based and scenario based learning are used interchangeably throughout the literature. They involve the use of a real or fictional case or scenario to provide learning opportunities based on “context or situations and social frameworks” (Lamos and Parrish, 1999). They provide the learner with not only a context in which to place the learning but a relevance to their workplace. 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.

8.2 Underpinning Theory

Scenario based learning is based on the concept of situated cognition (Lamos and Parrish, 1999). The underlying premise is “knowledge cannot be fully understood independent of its context” (Lamos and Parrish, 1999). The importance of this 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 learnt.

Kneebone et al, 2003 argue that focussing on 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.

8.3 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. Provide a patient focus to the education (Owen et al, 2007)
4. Link theoretical knowledge to practice (McFetridge and Deeny, 2004)
5. Opportunity to reflect, critically analyse and question (Stockhausen, 1994).

8.4 Characteristics of the Scenario

As an educator it is important to consider the characteristics required of an effective scenario or case. The following characteristics are suggested following a review of the literature:

1. The scenario or case should be as close as possible to reality (Cioffi, 2001)
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 prior to them practising a clinical skill. This means that the scenario is presented in a complete format and provides a situation for the learner to learn another skill in. 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. Simulations can provide this opportunity
3. Real cases vs fictional cases. Real cases need to be deidentified for ethical reasons. Fictional ones need to be as realistic as possible particularly for experienced clinicians
4. Level of complexity of the case/scenario – this depends again on the experience level of the learners and the objectives of the program. The addition of others within the scenario eg simulated patients is another consideration for the educator. This has been discussed in terms of context within the clinical skills chapter.



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Notes



Chapter 9. Assessment

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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 they are assessing, what they are assessing and when 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 chapter aims to provide the clinical educator with some considerations prior to implementing assessment and some potentially applicable assessment tools for the clinical skills arena.

9.1 Why Assess?

The purposes of assessment can include:

1. 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
2. To determine if a learner has achieved a standard for a particular qualification
3. To determine if a learner has achieved a certain level of competence
4. To predict future performance
5. To determine what has been learnt from a course of instruction
6. To rank learners
7. To measure improvement over time
8. To encourage future learning
9. To diagnose student learning difficulties.

(Newble and Cannon, 2001, and 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. 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 assessed with passing the hurdle rather than navigating the path to the end (Newble and Cannon, 2001). Educators should be aware of this when designing the type of assessment they will use for summative purposes.

9.2 What to assess?

As previously mentioned, learning objectives are important components of course design. 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 determining 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.

Generally speaking there are three broad areas which can be assessed:

- Knowledge
- Skills
- Attitudes.

The methodology chosen should consider which of these is to be assessed. 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 of assessment to be used.

9.3 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 faculty/facilitators or so called expert? The person to perform the assessment will influence the decision on the type of assessment methodology to be used. For example, 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.

9.4 How to assess?

There are a number of methodologies available for assessment. The following are suggestions 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.

Tool	Considerations	Reference
Knowledge		
Multiple choice questions (MCQS)	<p>MCQ is made up of a stem with 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.</p> <p>Main content should be in the stem and distractors should be as short as possible.</p> <p>Advantages are that MCQ's can be easily marked 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"> • The obvious distractor that is incorrect • Distractors of different length • The negative stem • Use of all of the above or none of the above • Trick questions 	<p>http://web.uct.ac.za/projects/cbe/mcqman/mcqchp2.html</p> <p>and</p> <p>Newble, D., and Cannon, R. (2001). <i>A handbook for medical teachers (4th ed.)</i>. Netherlands: Kluwer Academic Publications.</p>
True/False	<p>Test basic level of knowledge acquisition. Criticised for the 50/50 chance of a correct answer. When writing these, make sure that they are in fact true or false – no ambiguity. Need to avoid negative or double negative statements.</p>	<p>Newble, D., and Cannon, R. (2001). <i>A handbook for medical teachers (4th ed.)</i>. Netherlands: Kluwer Academic Publications.</p>
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>	<p>Schuwirth, and Van der Vleuten (2003). Chapter 9. Written Assessment. In Cantillon, Hutchison and Wood (2003). <i>ABC of learning and teaching in medicine</i>. London: BMJ Publishing Group.</p> <p>and</p> <p>Newble, D., and Cannon, R. (2001). <i>A handbook for medical teachers (4th ed.)</i>. Netherlands: Kluwer Academic Publications.</p>

Tool	Considerations	Reference
Short Answer Questions	<p>These are open ended questions where the learner has to answer a question in their own words without options given. Advantage are that they are more flexible and can test creativity. Disadvantage 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. Learners also need guidance as to the amount of detail required by the question.</p> <p>Additional advantage is that they can test attitudinal qualities.</p>	Schuwirth, and Van der Vleuten. (2003). Chapter 9. Written Assessment. In Cantillion, Hutchison and Wood. (2003). <i>ABC of learning and teaching in medicine</i> . London: BMJ Publishing Group.
Essay	<p>Similar disadvantage to short answer questions in that they require expert marking. However essay questions are capable of assessing problem solving, hypothesising, synthesising and higher order analysis of information. Additional disadvantage is the time required by learners to answer this type of assessment.</p>	Schuwirth, and Van der Vleuten. (2003). Chapter 9. Written Assessment. In Cantillion, Hutchison and Wood. (2003). <i>ABC of Learning and Teaching in medicine</i> . London: BMJ Publishing Group.
Skills		
Objective Structured Clinical Examination (OSCE)	<p>This examination uses 'stations' to allow learners to problem solve in a "realistic" environment. Each station has a Stem. The learner then interacts with a standardised patient and performs a skill. There is a checklist developed for the assessor which highlights the main components of the skill and the marks allocated to each component. There is also specialised training for the assessors and the standardised patients to ensure that the objectives of the station are understood.</p>	Smee, S. (2003). Chapter 10. Skill Based Assessment. In Cantillion, Hutchison and Wood. (2003). <i>ABC of learning and teaching in medicine</i> . London: BMJ Publishing Group.
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 then the findings, diagnosis and clinical reasoning is presented to the assessors. There has recently been criticism as to the validity of this type of test and the need for multiple long cases to gain the same level of reliability as the OSCE.</p>	<p>Smee, S. (2003). Chapter 10. Skill Based Assessment. In Cantillion, Hutchison and Wood. (2003). <i>ABC of learning and teaching in medicine</i>. London: BMJ Publishing Group.</p> <p>and</p> <p>Wass, V., and Van der Vleuten, C. (2004). The Long Case. <i>Medical Education</i>. 38: 1176–1180.</p>
Directed Observation of Procedural Skills (DOPS)	<p>This is a checklist tool introduced by the NHS to assess junior doctors' procedural skills as part of the new Foundation Years programme. It is a form of workplace based assessment.</p>	<p>http://www.mmc.nhs.uk/pages/assessment/dops</p>

Tool	Considerations	Reference
Mini CEX	This is an observed focussed interaction with a patient (approx 10-20 minutes). It is designed to assess clinical skills and attitudes. Can be used for formative or summative assessment.	Epstein, R. (2007). Assessment in Medical Education. <i>The New England Journal of Medicine</i> . 356:387-96.
Video Analysis	Video taping 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). Assessment in Medical Education. <i>The New England Journal of Medicine</i> . 356:387-96.
Attitudes		
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. An example of workplace assessment.	Smee, S. (2003). Chapter 10. Skill Based Assessment. In Cantillion, Hutchison and Wood. (2003). <i>ABC of learning and teaching in medicine</i> . London: BMJ Publishing Group.
Case Based Discussion	Introduced by the NHS to assess junior doctors' as part of the new Foundation Years programme, this tool involves the junior medical staff choosing a patient's notes and discussing it with their supervisor. It enables exploration of clinical decision making including ethical considerations.	http://www.mmc.nhs.uk/pages/assessment/dops
Global Rating Scales	Often used within the workplace, when a health professional completes a specific term or rotation. Involves subjective rating of the learner's performance.	Newble, D., and Cannon, R. (2001). <i>A handbook for medical teachers (4th ed.)</i> . Netherlands: Kluwer Academic Publications.
360 Degree Appraisal	<p>Can be used in formative or summative assessment. Involves peers rating the learner using a rating scale and open ended questions. The results are collated by the learner's supervisor and fed back to the learner. The NHS has introduced an example of such a tool into their assessment portfolio (Mini PAT).</p> <p>This tool is used widely outside the health practitioner field.</p>	http://www.mmc.nhs.uk/pages/assessment/dops

Tool	Considerations	Reference
	Previously listed tools including: <ul style="list-style-type: none"> • Observation • Mini CEX • Long Case • OSCE 	

9.5 Additional Considerations

Since summative assessment is used to make a judgment about a learner's performance, it is essential that any tool used is deemed to be:

- 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).
- Reliable – refers to the repeatability of the assessment. e.g. intra rater reliability is when the assessment if repeatedly performed by the same assessor on the same candidate gets the same result. Inter rater reliability occurs when more than one rater uses the assessment tool and gets the same result for the learner. (McAleer, 2005, p. 305).
- 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 – educational impact 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 tool not previously implemented.



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Notes



Chapter 10. Fidelity in Training

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The debate surrounding fidelity in clinical skills training and simulation has been topical in the literature surrounding health professional education as well as industries such as aviation in which simulation first evolved. Manikins are labelled high, medium and low fidelity in an arbitrary manner and these terms create confusion amongst trainers and learners alike. Beaubien and Baker (2004) argue that the terms high fidelity simulation and simulation are being used synonymously and that this “overemphasises the instructional technology to the detriment of more substantive issues, such as the training goals, content and design.” (p. 151).

There is also an impression created that the higher the fidelity of the manikin the better the training outcome which is not necessarily so (Beaubien and Baker, 2004). There are a number of factors which affect the efficacy of clinical skills and simulation training and fidelity is just one.

This chapter attempts to define fidelity, classify types of fidelity and discuss the educational theories regarding immersion and negative transfer of learning which are often discussed in relation to fidelity of training.

10.1 Definition

Fidelity is really referring to the realism. However it is important to differentiate if you are talking about the fidelity of a manikin or a training experience/situation. Simulation fidelity has often referred to the manikin and as such is defined as “the degree to which the simulator replicates reality” (Beaubien and Beker, 2004, p152). However there is more to a simulation than the manikin so that the definition of fidelity of a simulation may be better defined as “the extent to which the appearance and/or behaviour of the simulation or simulator matches the appearance and behaviour of the real system” (Ker and Bradley, 2007).

10.2 Classification of Fidelity

Reymann et al, 1995 developed a typology of fidelity which includes three aspects:

1. Equipment fidelity – which relates to the physical characteristics of the simulator or manikin
2. Environmental fidelity – which relates to the extent to which the simulator duplicates sensory information eg motion cues, visual cues etc
3. Psychological fidelity concerning the reality perceived by the learner.

Dieckmann, 2005 described another three part typology being:

1. Physical – what can be measured eg weight and size
2. Semantical – relationship between variables e.g. the extent to which the blood pressure drops when fluid is lost
3. Phenomenal – reality of feelings regarding the clinical situation.

Diekermann, 2005 also argued that what the trainer thinks is realistic is not necessarily what the participant thinks is realistic. This is often the experience post a simulation, where trainers are concerned with one aspect of realism and the learner is focussing on another aspect.

There is obvious interrelationship between the variables. However the importance of each aspect of fidelity should be linked to the desired outcomes of the training. For example, Beaubien and Baker, 2004, argue that the psychological dimension is the most important for team training. In addition, technology with good physical and environmental fidelity may increase psychological fidelity but not in the presence of poorly designed scenarios (Oser et al., 1999).

In reality a number of factors influence the fidelity required in clinical skills training and simulations. These include:

1. The learning objectives - for example where the learning objective is to practise time critical decision making, the temporal aspect of fidelity will be important
2. The level of the learner – the more experienced clinician will be more critical of the physical and environmental fidelity in order to achieve psychological fidelity
3. Complexity of the situation e.g. individual skill training such as IV insertion vs team training in anaesthetics.

10.3 Relevant Educational Theories

In previous chapters the need for contextualisation of learning has been discussed and the way in which fidelity to the real clinical environment can be enhanced by the use of lower physical fidelity manikins with simulated patients (Kneebone et al, 2002). In addition the transference of learning from the skills environment to the clinical environment has been discussed. Ker and Bradley suggest a number of factors to aid transference of learning with fidelity causing “suspension of disbelief” (2007, p. 23). There has also been a suggestion that attention to environmental factors such as noise, numbers of staff, physical size of the room can also influence transferral of learning (Ker and Bradley, 2007, p. 24).

As clinical educators we also need to be aware of the potential for negative learning. This has the potential to occur where learners are encouraged to practise in a manner different to the environment in which they work. E.g. being told not to dispose of sharps in the sharps container, because as the trainer, you want to reuse the equipment for the next training session. In this instance, an alternative would be to encourage correct disposal and retrieve the equipment after the training session is complete.

Fidelity has also been suggested to effect the immersion in the simulated environment and hence the potential for learning, however there has been no direct relationship established between the level of fidelity and the effectiveness of team training (Beaubien and Baker, 2004). In aviation, there has been some research that suggests “a high physical fidelity makes the simulation more acceptable to pilots” (Roscoe, 1991). While others suggest that a skills or procedural trainer does not require high fidelity to achieve its goal (Johnson, 1981). The need for immersion depends on the goals of the educational experience and hence the need for fidelity.

10.4 Methods to enhance fidelity

As a clinical educator there is not a lot that can be done to enhance the physical fidelity of a manikin. However it is worthwhile to provide manufacturers with feedback on what learners consider realistic so that they can continue to improve this aspect of the realism. There are a number of ways to improve the environmental and psychological fidelity. Examples are:

1. Use realistic resources – find out the environment in which your learners will be working and gather the resources they would see e.g. drug vials, patient charts, linen etc
2. Learner attire – if you are doing an operating theatre session, the learners and staff should be in theatre attire to mimic the real environment. This should include where appropriate hats, footwear and gloves/masks
3. Prescenario briefing – make sure that you set the scene prior to the training. This will assist the learner to get into role prior to the scenario commencing. This is important if you are doing a role play, a clinical skills session or simulation
4. Plan scenarios carefully so that as the educator you have anticipated equipment and assistance the learner may request. This will mean that you will be able to respond appropriately at the time.



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Notes



Chapter 11. The Importance of Evaluation

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11.1 Definition

Jolly (1998) defines evaluation as “judging of an educational process or course in order to guide future direction”. As the design and development of an effective course is an ongoing process, evaluation, both formal and informal, will inform as to the effectiveness and ongoing needs of the participants and the program itself. The use of evaluation tools is the most common form of feedback used within structured and organised courses. Hattie et al (1996) explains that feedback is amongst the most important factor in effecting learning and therefore, the information acquired through evaluation is vital.

11.2 Characteristics of Evaluation

The evaluations utilised within programs should predominantly be of the interactive and impact format. Interactive evaluation will provide the facilitator with data to establish if the design of the program is meeting the needs of the participants, and assist in the recognition of prior learning and ongoing program development. The impact of the program may be measured to ascertain if the objectives have been achieved and whether any modifications are recommended for the future. This type of evaluation may also be administered periodically after the completion of the program to measure the impact of the program on the practice of the participants.

Evaluation has many purposes. Amongst them are:

1. Ascertain the achievement of clearly outlined learning objectives
2. Establish whether the participants learning needs are being met
3. Identify areas for improvement in course design, delivery and content
4. Provide feedback to facilitators and trainers as to their performance

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.

11.3 Importance of Evaluation

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.

Analysing evaluation data at the completion of a course is pivotal to the ongoing development of the facilitator and the course. Jolly (1998) explains that evaluation is a “cyclical process”. To encourage double loop learning where the data becomes the basis for ongoing learning, development and change within an organisation, data should be shared and acted upon where necessary.



Consensogram

Purpose

This tool is a quick way of measuring whole group's perception on an issue based on individual responses to a focus question.

Process

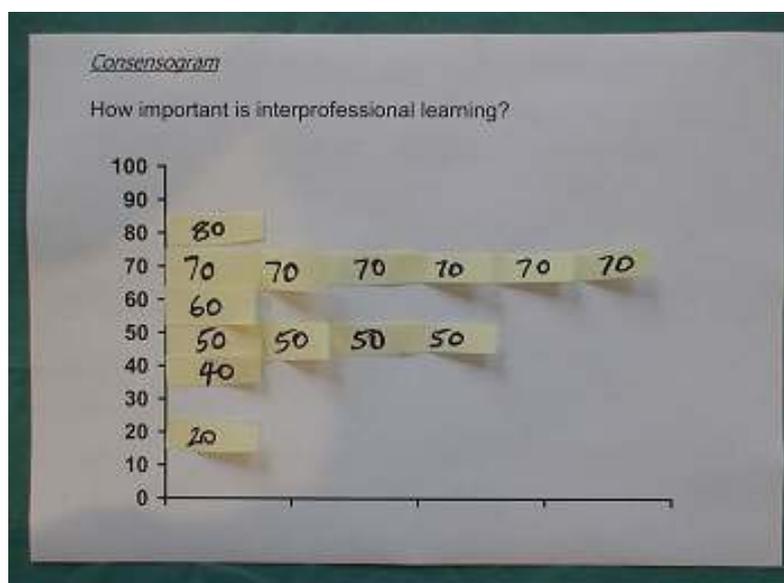
1. Prepare X and Y graph axes on a large sheet of paper
2. Write a focus question across the top
3. Provide participants with self adhesive notes and a pen
4. Ask the focus question explaining that you are looking for an opinion expressed as a numerical value
5. The vertical axis is scaled from 0% to 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?



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.

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

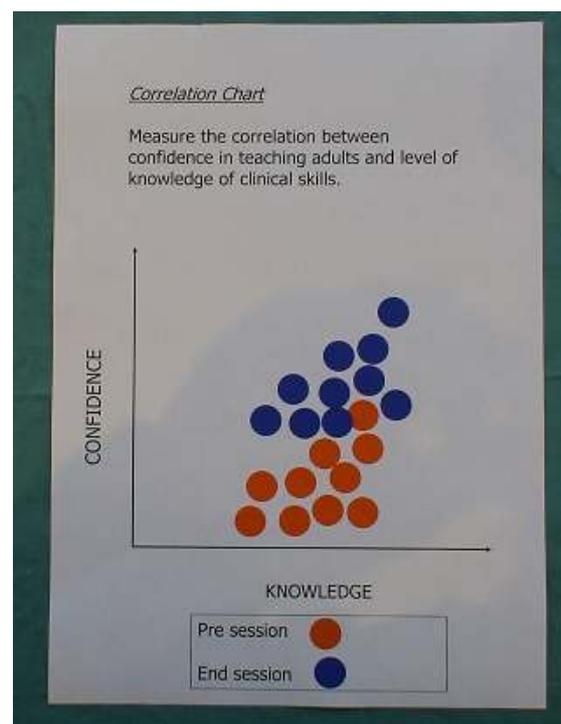
Product

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.



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.

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.

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

Learning Objectives of facilitators course	Strongly disagree	Disagree	Slightly agree	Agree	Strongly agree
a) Understand the course philosophy and structure	<input type="checkbox"/>				
b) Revise Adult Learning principles and small group teaching	<input type="checkbox"/>				
c) Familiarise participants with each of the modules	<input type="checkbox"/>				
d) Practice a facilitated discussion and mini scenario	<input type="checkbox"/>				
e) Identify logistical considerations in conducting a clinical skills courses	<input type="checkbox"/>				



DIGA

Purpose

DIGA (**D**escribe, **I**nterpret, **G**eneralise, **A**pply) is an evaluation tool technique for deep reflection for individuals or small groups.

Process

1. Distribute DIGA Sheets to individuals or groups
2. Individuals complete the sheet solo; or groups discuss each of the stages with one person as designated scribe
3. Each stage has prompting questions to assist in the answering of the questions

Product

DIGA provides the opportunity to deeply reflect on and record responses to different levels of a learning experience from description, through personal interpretation and generalisation to opportunities for application.

Example

Reflect on this clinical skills teaching session.

Reflect on the teaching and learning model of the Train the Trainer Course.

DIGA Instructions

Evaluation technique for individuals or small groups

Describe

What happened today? Describe your experiences.

Interpret

Interpret or internalise the experience. What does this mean for me or us? What had the most impact? What did or did not make sense?

Generalise

Generalise the learning from today. What are the general principles from the work done today? What message should I take away with me?

Apply

How will I apply the learning? What actions will I take as a result of today? What are the opportunities for implementing the learning from today?

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).



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.

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 (Δ).
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 focus attention on what needs to be improved.

Plus (+) What went well?	Delta (Δ) What could be changed or improved?

Example

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

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).



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Notes