Learning Outcomes and Competent Practice

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Setting the Scene

* Relationship between learning outcomes and competence.
* What do we actually mean by competence?
* How we can assess this in the context of professional training and competent practice:
  * transferring knowledge, developing skill, building experience
  * process of explanation, demonstration, observation, feedback, end-point assessment to an agreed standard
  * developing professional attitude and personal effectiveness (i.e. performance) in new situations.
Areas where learning outcomes should be defined

- Statutory and Regulatory Frameworks
- Academic programmes
- Professional qualifications
- Course modules/training units
- Single teaching/learning sessions
- Self-directed learning by individual
- CPD

PROFESSIONAL TRAINING

At the heart of healthcare
Why learning outcomes?

* Specific intentions of a programme, course, teaching or training.
* Statements of what an individual should know, understand, or be able to do.
* Linked to teaching/learning activities and assessment.
* Help to focus on what is to be taught/achieved.
* Related to (Bloom 1956)
  - Cognitive (knowledge and intellectual skills)
  - Psychomotor (physical)
  - Affective (feelings and attitudes)
* Provide a practical guide to assessment of training through quantifiable or observable outcomes (competence)
  * Action verbs: ability, analyse, apply, calculate, critique, demonstrate, design, discuss, explain, operate, perform
Cognitive domains

1. Knowledge
   - Ability to recall or remember facts without necessarily understanding them (define, examine, identify, recollect)

2. Comprehension
   - Ability to understand and interpret information (classify, describe, illustrate)

3. Application
   - Ability to use learned material in new situations, e.g. put ideas and concepts to work in solving problems (assess, examine)

4. Analysis
   - Ability to break down information into its components, look for relationships, ideas (compare, contract, criticise)

5. Synthesis
   - Ability to put parts together (devise, develop, explain)

6. Evaluation
   - Ability to judge value of for a given purpose (appraise, interpret)
Examples

**Ability to:**

1. *Recall* the characteristics of a perfect fixative
2. *Explain* the criteria to be taken into account when dealing with patient samples
3. *Apply* principles of evidence-based medicine to determine clinical diagnoses
4. Critically *analyse* the advantages and disadvantages of laboratory screening methods for bowel cancer
5. *Propose* solutions to address a long-term shortage of qualified staff
PSYCHOMOTOR ("Doing") DOMAIN

❖ Involves co-ordination of brain and muscular activity.

❖ Active verbs for this domain:
  handle, operate, perform (skilfully).
Examples

Laboratory skills
* Operate the range of instrumentation specified in the module safely and efficiently in the chemistry laboratory.
* Perform titrations accurately and safely in the laboratory.

Clinical Skills
* Perform a comprehensive history and physical examination of patients in the outpatient setting and the general medical wards, excluding critical care settings.
* Perform venepuncture and basic CPR.

Presentation skills
* Deliver an effective presentation.
* Demonstrate a range of graphic and verbal communication techniques.
AFFECTIVE DOMAIN ("Feeling")

1. Receiving
   - Willingness to receive information
2. Responding
   - Active participation in own learning
3. Valuing
   - Commitment to a value (embrace, follow)
4. Organisation
   - Comparing, relating, synthesising values
5. Characterisation
   - Integration of beliefs, ideas and attitudes
Examples

* Accept the need for professional ethical standards.
* Appreciate the need for confidentiality in the professional client relationship.
* Display a willingness to communicate well with patients.
* Relate to colleagues, patients and service users in an ethical and humane manner.
* Resolve conflicting issues between personal beliefs and ethical considerations.
* Participate in class discussions with colleagues and with teachers.
Competence

A general description of the behaviour or actions needed to successfully perform within a particular [work] context (e.g. job, group of jobs, function).

The attainment of sufficient skill and knowledge to perform the activity or service to a degree and quality that is acceptable to the profession/service user and commensurate with other competent persons.

Competence has an incremental relationship to level of responsibility/expertise/outcomes in terms of professional responsibility.
Some thinking on competence

* “… to be competent we must constantly review & change our practice” (Hodkinson & Issit, 1995)

* “The distinguishing characteristics of the professional is that he does what he does intelligently not routinely” (Pearson, 1984)
Problems with competency

* Thought of as broad, general attributes which we can use to judge ability:
  * qualified (competent) biomedical laboratory scientists can perform a range of routine tests

* But when assessing competence we tend to reduce these to detailed knowledge and skills or individual activities:
  * assess suitability of samples
  * carry out procedures accurately and precisely
  * troubleshoot and take corrective action
  * interpret/assess significance of results
  * give accurate advice

* Specific activities can be observed and appraised

* General competencies are difficult to assess

- Knowledge (cognitive)
- Skills (psychomotor)
- Attitude (affective)
Knowledge
Ability
Competence-based training system

The unit of progression is mastery of knowledge and skills

Focusses on the trainee and is output based

End-point is readiness to bear professional responsibility

* “fitness to practice”
* “fitness for purpose”

Key components are:

❖ Skill – a task of group of tasks performed to a specified standard of proficiency that involved manipulations of tools/equipment or expertise that is knowledge/attitude based

❖ Competency – a skill performed to a specified standard under specific conditions

❖ Performance – professional attitude and personal effectiveness (includes confidence and enthusiasm)
Competence-based assessment principles

❖ Current: takes place within a short time of learning.
❖ Valid: components requiring assessment must be assessed and there is sufficient evidence to ensure candidate meets competency specified by current standard.
❖ Reliable: assessment must stand up to scrutiny and evidence demonstrate consistency.
❖ Flexible: there is no single approach. A variety of learning outcomes require different assessment approached. Evidence should be relevant to the needs of the situation and trainee.
❖ Fair: assessment should not discriminate against individuals or groups.
❖ Safe: must comply with health and safety requirements.
Underpinned by quality assessment

❖ Quality of assessment directly correlates to the quality of learning.
❖ If assessment material has clear learning objectives, trainee has a clear understanding of:
  • what they have to learn (knowledge and skills)
  • to what depth they have to understand it (ability)
  • how they are expected to demonstrate their knowledge and understanding (application in professional practice)
Framework for competency based assessment: portfolio approach

* Regulatory standards of proficiency are used as a template for professional training.
* These are used as clear statements of knowledge and competence requirements.
* Indicative learning outcomes inform expected achievements at the end of work-based training.
* Performance indicators guide how evidence of training and assessment can be produced.
* External verification of professional ability
  * review of evidence
  * professional “interview”
* External quality assurance for consistency.
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The trainer must sign each standard to confirm it has been met.
For each module the candidate is required to produce three separate pieces of evidence in support of the knowledge and skills detailed. Please note, one piece of evidence must be in support of HCPC SoP 9.3.

**Evidence of Achievement**

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**Evidence of completion of this module verified and passed by:**

- External Verifier’s Signature: __________________________
- External Verifier’s Name: __________________________
- Date: __________________________

For each module the candidate is required to produce 3 separate pieces of evidence in support of the knowledge and skills detailed in the standards.

Choice of evidence must be justified.
The following statements are representative of the expected outcomes of work-based training that has taken place in an IBMS approved laboratory.

Some elements of this training may be informed by an IBMS accredited degree programme.

Trainees must know HOW to use the knowledge that has been accumulated (competence).
The following are only suggested examples that may be used for evidence of training and assessment to show how some of the standards of proficiency have been met. They are NOT defined tasks that need to be completed.

Evidence is generated by HOW theory is applied to practice.
Measuring competence

Common approaches:

* Observation
* Mimic
* Practice
* Repetition
* Simulation

Alternatively, we can think in terms of student creativity.

* Rather than “do stuff” get trainees to find/handle information and communicate results.
* Focus on the process: how is knowledge used and evaluated.
* But, whilst knowing and knowing how is important there is more to professional practice.
Assessment frameworks

Knows (Knowledge)

Skill of acquiring information from a variety of sources. Use of accumulated knowledge to analyse and interpret. Translate into rationale practice.

Knows How (Competence)

Process by which conclusions are reached.

Does (Action)

Independent practice

ACADEMIC LEARNING

PROFESSIONAL TRAINING

At the heart of healthcare
Competent practice

* Showing how it is done (performance) is the basis for assessing professional practice.
* Evaluating what is done is the basis for measuring effectiveness.
* Competent practice is the integration of wide-ranging competencies resulting in performance and effectiveness to agreed professional standards.

A key aspect of this is personal reflection:
* what has been learned
* how it applies in practice
* benefits, new dimension, greater insight.
Why reflection?

By three methods we may learn wisdom:
First, by reflection, which is noblest;
Second, by imitation, which is easiest; and
third by experience, which is the bitterest.
* Reflection is about making sense of a situation and its outcomes.

* An examination of practice - the ability to pay critical attention to the practical values and theories which inform everyday actions, i.e. the values, assumptions, ideas, theories, and strategies supporting our behaviour patterns, lifestyle or professional decisions and skills.

* Process or clarification that may reveal discrepancies between intentions, values and actions.

* Leads to increased personal effectiveness.

* Great way to increase confidence and become a more proactive and qualified professional.
Concluding thoughts

* Learning outcomes extend the principles of good academic teaching and assessment into effective training and assessment of competent practice.

* Competent practice is the measure of how units of competence contribute to personal effectiveness within a defined scope of practice.

* Assessment frameworks should recognise that the application of theory to practice is a shift of emphasis from knowledge to the ability to conduct independent practice to defined and acceptable standards.
Thank you for listening