Learning Outcomes and Competent Practice
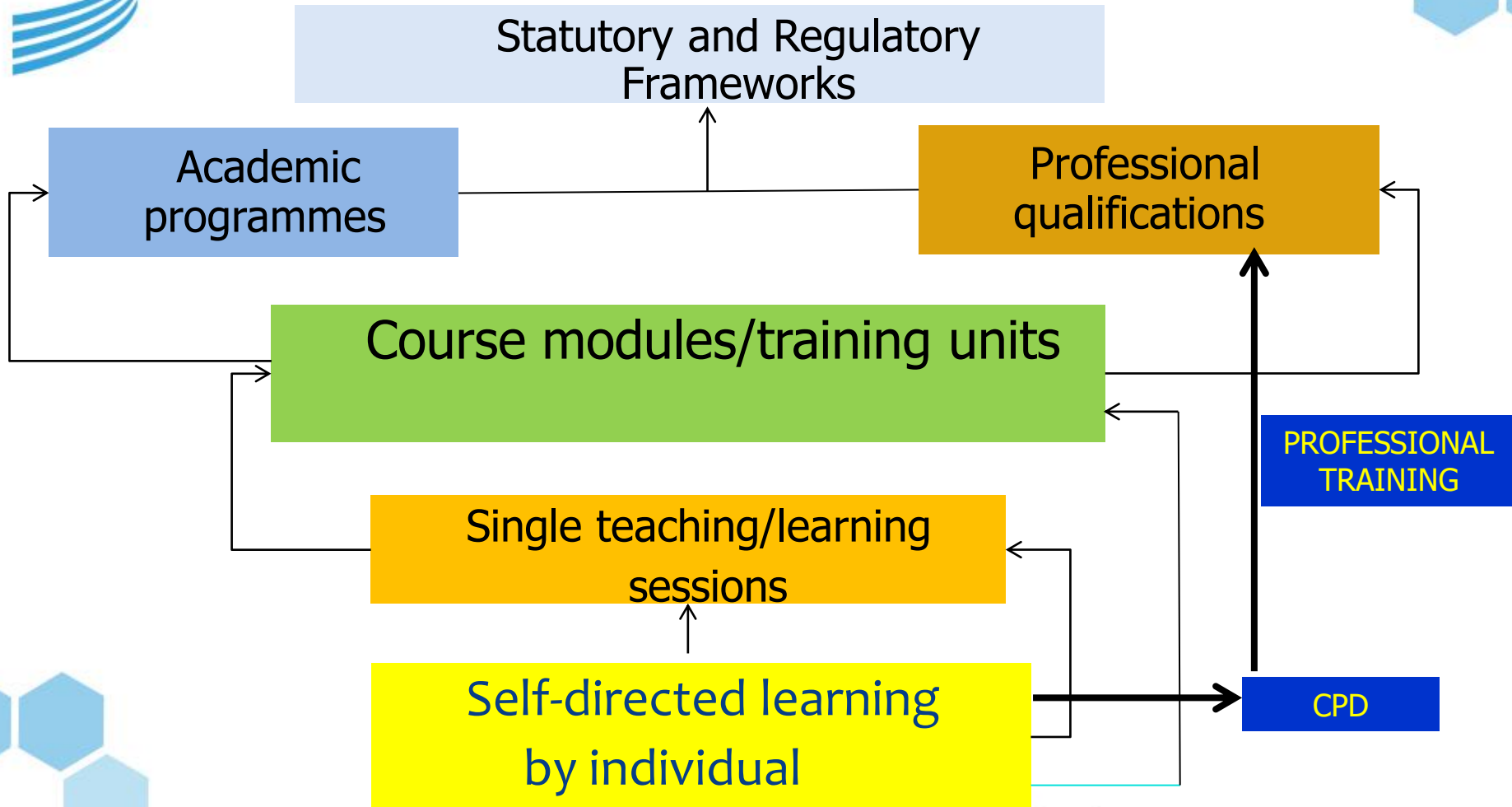
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Setting the Scene

* 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.

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Areas where learning outcomes should be defined

Statutory and Regulatory Frameworks

Academic programmes

Professional qualifications

Course modules/training units

PROFESSIONAL TRAINING

Single teaching/learning sessions

Self-directed learning by individual

CPD

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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

Level	Description
6. Evaluation	Ability to judge value of for a given purpose (appraise, interpret)
5. Synthesis	Ability to put parts together (devise, develop, explain)
4. Analysis	Ability to break down information into its components, look for relationships, ideas (compare, contract, criticise)
3. Application	Ability to use learned material in new situations, e.g. put ideas and concepts to work in solving problems (assess, examine)
2. Comprehension	Ability to understand and interpret information (classify, describe, illustrate)
1. Knowledge	Ability to recall or remember facts without necessarily understanding them (define, examine, identify, recollect)

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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

6. *Evaluate* proposals for introducing new automated analysers.

PSYCHOMOTOR ("Doing") DOMAIN

❖ Involves co-ordination of brain and muscular activity.

❖ Active verbs for this domain:

    handle, operate, perform (skilfully).

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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.

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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.

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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.

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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

Knowledge	(cognitive)
Skills	(psychomotor)
Attitude	(affective)

* Specific activities can be observed and appraised

* General competencies are difficult to assess

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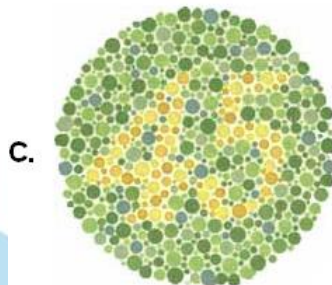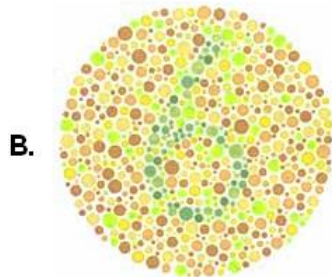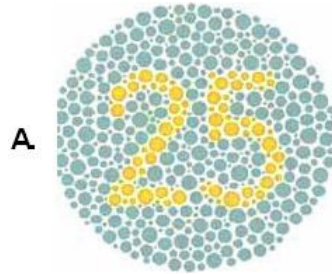
Knowledge

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Ability
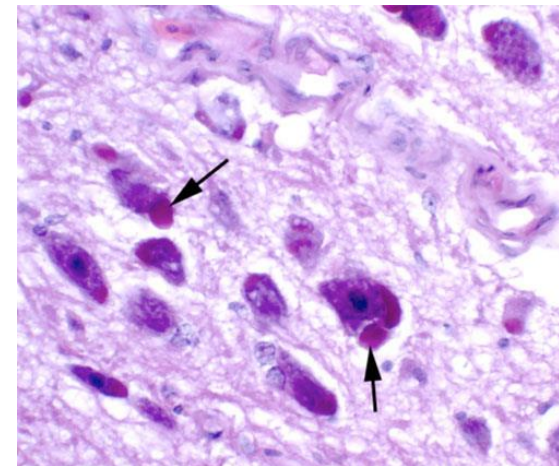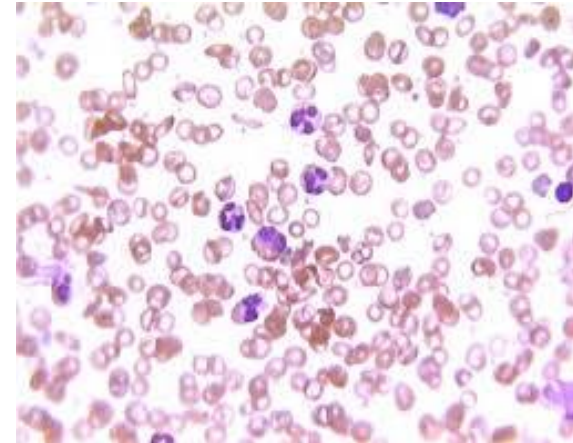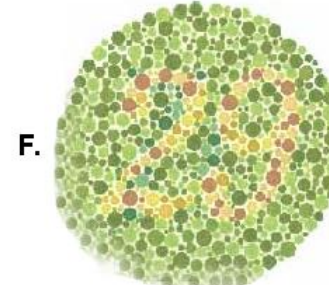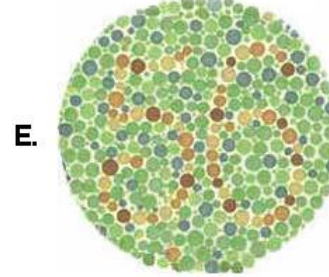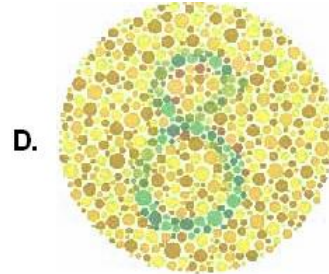
Competence-based training system

The <u>unit of progression</u> is mastery of knowledge and skills

Focusses on the trainee and is <u>output based</u>

End-point is <u>readiness to bear professional responsibility</u>

* "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)

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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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REGISTRATION TRAINING PORTFOLIO
FOR THE IBMS CERTIFICATE OF COMPETENCE

LABORATORY TRAINING LOGBOOK

hcpc
registered

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CONTENTS

SECTION 1 | PROFESSIONAL CONDUCT

Module 5: Professional Relationships

To complete this module you must demonstrate that you can sustain a consistent approach to work relationships in the context of the role of a biomedical scientist in order to achieve the best results for service users. This is achieved by recognising and valuing the contributions of other team members and demonstrating the ability to work effectively with others and develop productive working relationships.

The next two sections must be completed by the person(s) responsible for confirming that the candidate has met each of the HCPC standards of proficiency.

KNOWLEDGE	ASSESSED BY:	DATE:
Registered biomedical scientists must:		
1. Understand the need to build and sustain professional relationships as both an independent practitioner and collaboratively as a team member (HCPC SoP 9.2)		
2. Understand the need to engage service users and carers in planning and evaluating diagnostics, treatments and interventions to meet their needs and goals (HCPC SoP 9.3)		
3. Be aware of the impact of pathology services on the patient care pathway (HCPC SoP 9.5)		
4. Recognise the role of other professions in health and social care (HCPC SoP 13.3)		
5. Understand the structure and function of health and social care services in the UK (HCPC SoP 13.4)		
6. Understand the concept of leadership and its application to practice (HCPC SoP 13.5)		

COMPETENCE	ASSESSED BY:	DATE:
Registered biomedical scientists must be able to:		
a. Work appropriately with others (HCPC SoP 9)		
b. Work, where appropriate, in partnership with service users, other professionals, support staff and others (HCPC SoP 9.1)		
c. Contribute effectively to work undertaken as part of a multi-disciplinary team (HCPC SoP 9.4)		
d. Gather information, including qualitative and quantitative data, that helps to evaluate the responses of service users to their care (HCPC SoP 12.2)		

Regulatory standards of proficiency are grouped together in modules so that it is more obvious where similar standards overlap in the knowledge and skill component of a task.

The trainer must sign each standard to confirm it has been met.

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Evidence of Achievement

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.**

Title	
Evidence Type	
Justification	

Title	
Evidence Type	
Justification	

Title	
Evidence Type	
Justification	

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.

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REGISTRATION PORTFOLIO

GUIDANCE FOR CANDIDATES AND TRAINING OFFICERS

CONTENTS

APPENDIX ONE | INDICATIVE LEARNING OUTCOMES

Section One: Professional Conduct

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.

Module One: Personal Responsibility and Development

i) Describe how you apply the principles of self-management and time keeping in relation to service delivery and prioritisation of workload. HCPC SoP 1.2

ii) Work within departmental sample turnaround times, correctly identify urgent samples as specified in departmental protocol and prioritising performance of analysis to meet urgency of request. HCPC SoP 1.2

iii) Demonstrate you understand the role of a biomedical scientist and the relationship to other professionals and your personal scope of practice with reference to the departmental structure and the relationship of pathology to service users. HCPC SoP 2.1, 2.2, 3.1

iv) Demonstrate an understanding of the role of the Health and Care Professions Council (HCPC) by describing its role and requirements for statutory regulation withy specific reference to:
- How HCPC standards of proficiency apply to professional practice.
- How the HCPC code of conduct, performance and ethics apply to professional practice.
  HCPC SoP 2, 2,1, 2.2, 2.3, 2.4, 2.8, 3.1

v) Demonstrate an understanding of how the Institute of Biomedical Science document Code of Conduct and Good Professional Practice for Biomedical Scientists applies to your scope of practice. HCPC SoP 2, 2.1, 2.2, 2.3, 2.4, 2.8, 3.1

vi) Conduct duties and responsibilities in accordance with local, professional and regulatory policies and practice. HCPC SoP 2.3, 2.5, 2.6, 2.7

vii) Demonstrate awareness of pathology accreditation systems by being able to describe the principles of accreditation systems for pathology laboratories in the UK. HCPC SoP 2.6

viii) Demonstrate you are aware of the legal and professional requirements for the handling, retention, storage and respectful disposal of human tissues and samples. HCPC SoP 2.6

ix) Demonstrate you are aware of the implications of the European Community (EC) Working Time Directive (1996) and its principles. Demonstrate how you comply with departmental time-keeping policy. HCPC SoP 2.6

x) Understand the importance of maintaining physical and mental well-being and demonstrate that you know how to take appropriate action in response to your own health issues. HCPC SoP 3, 3.2

xi) Describe how you apply the requirements for personal responsibility in the context of health and safety and for the safety of colleagues. HCPC SoP 3.2

xii) Describe the limits of your professional practice and describe the referral mechanisms available in order to take appropriate action when personal limit of practice has been reached. HCPC SoP 1.1, 4, 4.1, 4.2, 4.5

xiii) Describe where and how to access information of relevance to the problem or request for advice and be able to give examples of relevant guidelines or personnel where interpretation of protocol is unclear. HCPC SoP 1.1, 4.3 – 4.5

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).

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APPENDIX TWO | EXAMPLE PERFORMANCE INDICATORS

Section One: Professional Conduct

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.

Module 1: Personal Responsibility and Development

- Produce a signed witness statement or personal testimony countersigned by your line manager that shows you are aware of what your personal limit of practice is and when to ask for advice.
- Produce a signed witness statement to confirm that a professional attitude to work has been demonstrated on a regular basis.
- Produce a signed witness statement to demonstrate your ability to prioritise samples.
- Describe with reference to legal and professional requirements, how the laboratory(s) in which you have been trained stores and disposes of human samples.
- Produce a signed witness statement or personal statement countersigned by your trainer to confirm the application of knowledge in accordance with the required standard.
- Produce a signed witness statement to confirm that a professional attitude to work has been demonstrated on a regular basis.
- Produce a signed witness statement to confirm procedures have been followed correctly.
- Produce a signed witness statement based on direct observation of practice to confirm procedures related to informed consent have been followed correctly.
- Describe the role of the Health and Care Professions Council and what is required to be a registered biomedical scientist.
- Describe the purpose of the IBMS guide to good professional practice and code of conduct.
- Provide examples of CPD and reflective practice.
- Show how you take responsibility for self-directed learning (e.g. reflective learning sheet, IBMS CPD portfolio).
- Give an account of a personal situation in your training when you felt your personal limit of practice might be exceeded and what you did about it.

Module 2: Equality and Diversity

- Produce a personal statement, countersigned by your line manager, describing how you demonstrate 'equal opportunities' in practice.
- Describe how the HCPC code of conduct, performance and ethics applies to your professional practice.
- Give examples of how you practice in a non-discriminatory manner.

Module 3: Communication

- Produce a witness statement based on direct observation of practice (DOPs) to confirm ability to use basic laboratory information management systems (LIMS) in accordance with standard operating procedures to access and input data.
- Provide a worked example or case study, including reflection, to confirm you have demonstrated good interpersonal skills.
- Produce a signed witness testimony that shows you have demonstrated/explained how you perceive that information or a result is understood by the recipient.
- List various ways or situations in which information is given to, and disseminated between staff, within the work area.
- List the various ways or situations in which information is given to, and disseminated between staff, within your work area.

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.
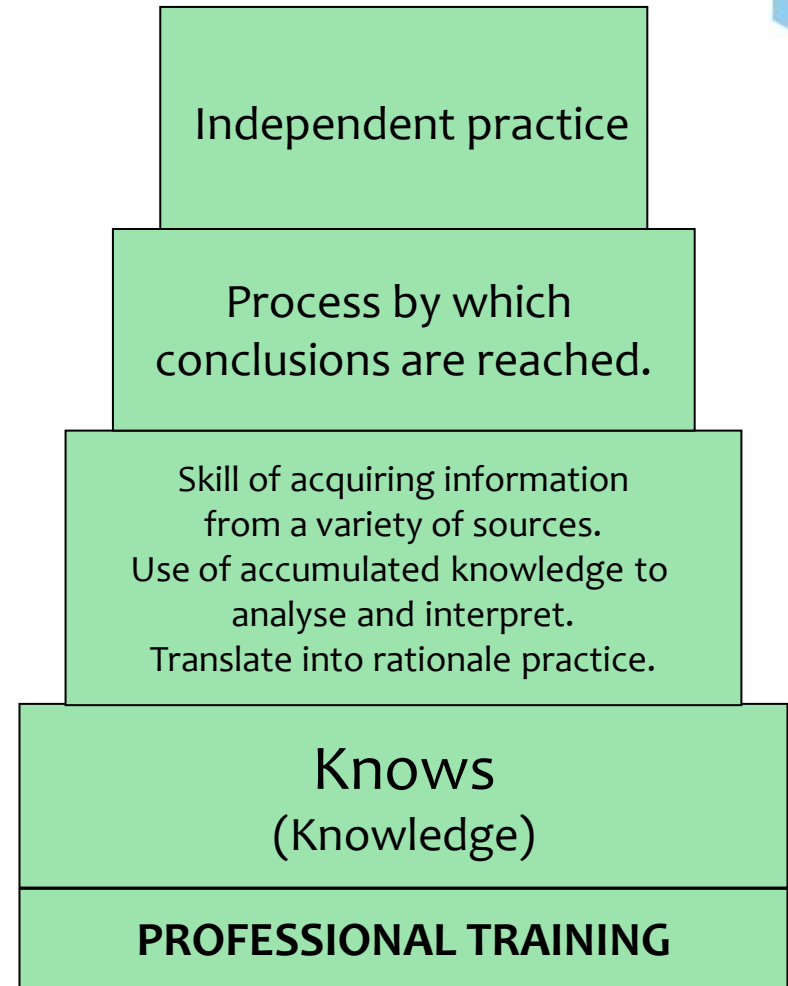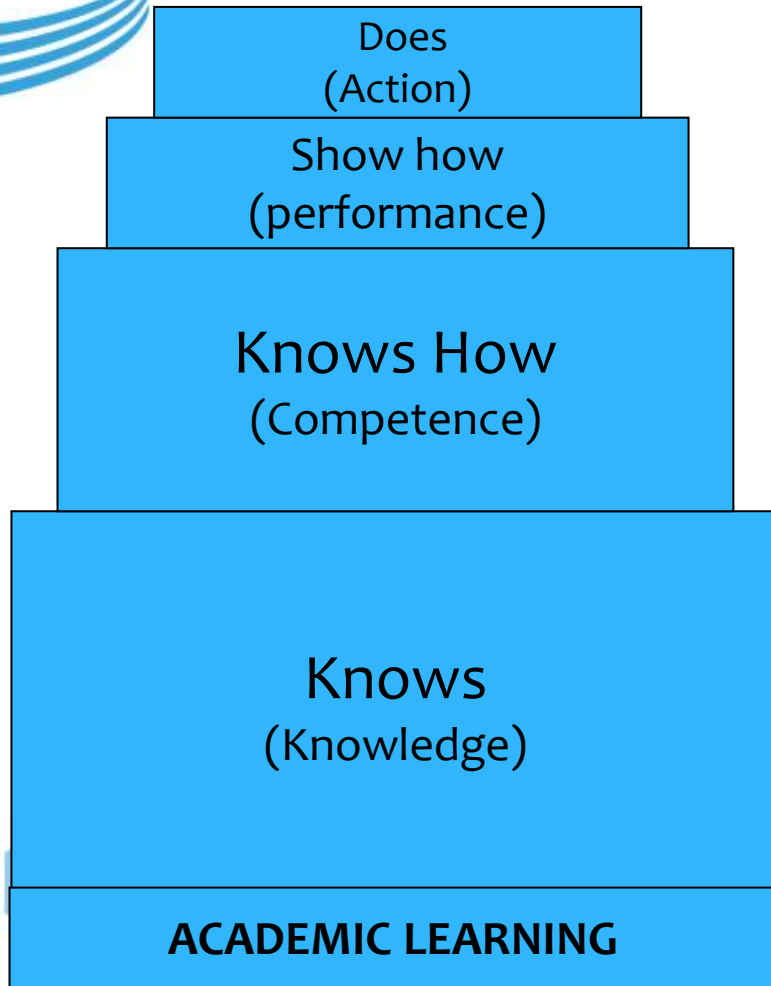
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Measuring competence

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 <u>knowing how</u> is important there is more to professional practice.
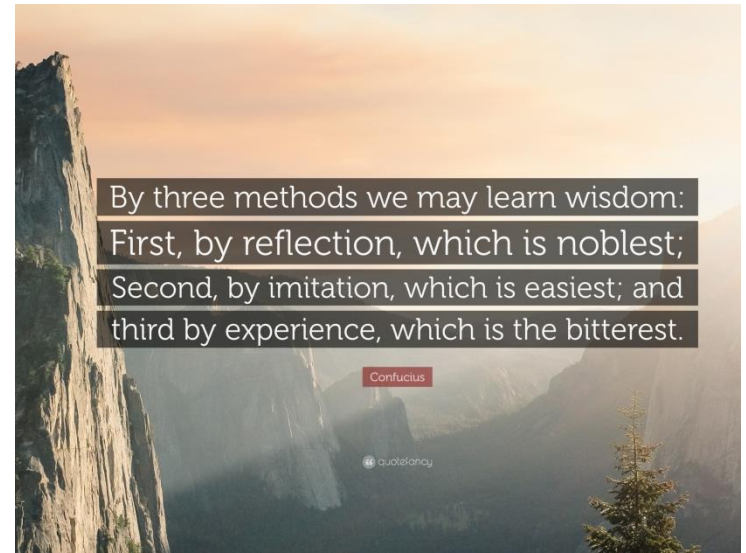
Assessment frameworks

Academic Learning (blue pyramid, bottom to top):

Does
(Action)

Show how
(performance)

Knows How
(Competence)

Knows
(Knowledge)

ACADEMIC LEARNING

Professional Training (green pyramid, bottom to top):

Independent practice

Process by which conclusions are reached.

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

Knows
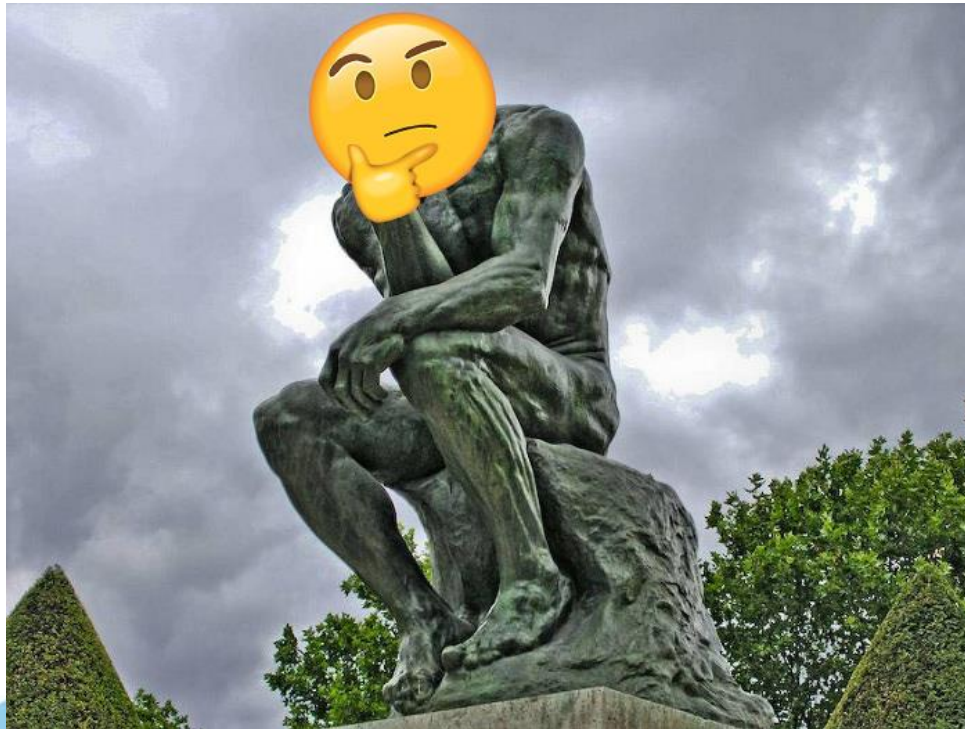(Knowledge)

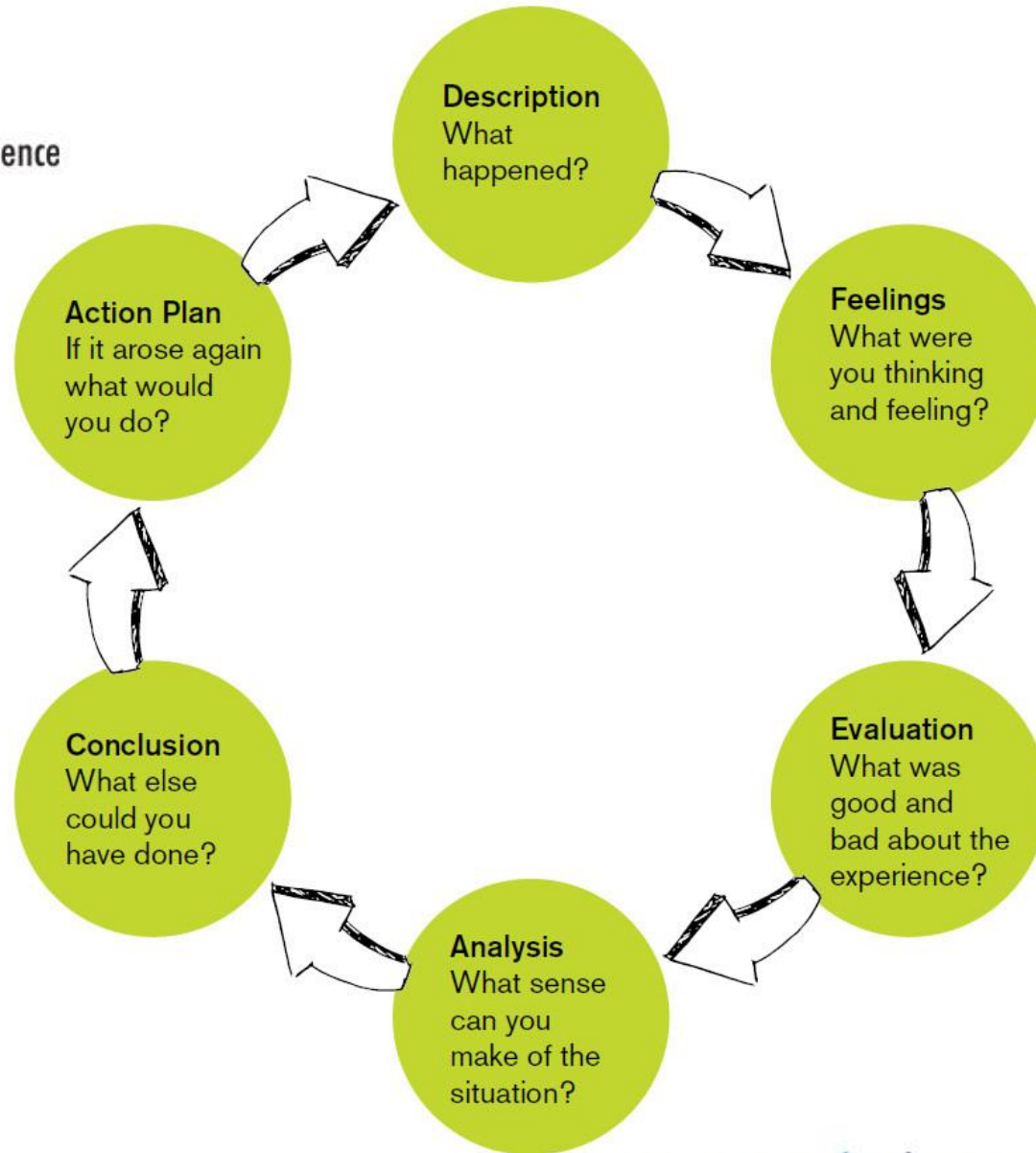**PROFESSIONAL TRAINING**

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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.

Confucius

* Reflection is about making sense of a situation and its outcomes.

* An examination of <u>practice</u> - 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 <u>discrepancies</u> 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.

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Thank you for listening