



THE UNIVERSITY OF
WESTERN AUSTRALIA

FACULTY OF
Medicine, Dentistry
and Health Sciences



Developing Learning Outcomes

Linking Outcomes to Assessment



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How to Develop Outcomes and Relate them to Assessment

1. Implement the given Faculty of Medicine Dentistry and Health Sciences directive to practice Outcome Based Education (OBE).
2. Use the defined elements of OBE to determine teaching, learning, and assessment practices in The Faculty of Medicine and Dentistry.
3. Write clear Learning Outcomes that define the specific competencies to be achieved in terms of skills, knowledge, attitudes and values.
4. Select or design assessment materials that are directly linked to Learning Outcomes.
5. Develop a clearly defined framework within which a learner can organize his or her efforts to complete the learning tasks.
6. Derive instructional material and content from the defined OBE framework.
7. Define the special conditions that apply to the actual activity that the learner will perform or demonstrate.
8. Specify the degree of accuracy or proficiency (standard or scale) that the learner must meet.

Defining Outcome Based Education (OBE)

OBE is an approach to education that shifts emphasis from what the teacher will do to what the student will do. It emphasizes the student learning by:

- clear and explicit identification of what a learner is expected to know, comprehend, or be able to do
- assessment that transparently and defensibly aligns with the outcomes
- teaching and learning activities that elicit the specified outcomes
- assessment tasks that are detailed and marked consistently using explicit criteria.

How is OBE implemented at UWA?

At its meeting on 4 April, 2001, the Academic Council resolved (R29/01) to endorse the introduction of Outcomes Based Education throughout the University of Western Australia in the 2004 academic year.

There are three ways in which OBE is currently being implemented at UWA:

1. A comprehensive top-down approach:

The outcomes for the course are clearly defined from the point of view of what is expected from its graduates. These outcomes consist of those that are discipline-specific and those that are generic to many courses or the university as a whole. From those principles and outcomes the curriculum of the course is constructed, the subdivision of the structure into units is made, and the outcomes specific to each of the units are derived.

2. A comprehensive unit approach:

The outcomes for a single unit are clearly defined within a “clean-slate” exercise. From those principles and outcomes the curriculum of the unit is constructed, and the criteria used in assessment are explicated.

3. Re-focusing a unit:

The existing objectives of a unit, or if there are none, the existing elements of the content, are rewritten in outcomes format, such that it becomes clear to the students what they are expected to understand and be able to do.

Applying Outcome Based Education in the Faculty of Medicine Dentistry and Health Sciences

The Faculty is applying the **top-down** approach. The Graduate Outcomes, Year Outcomes, and Unit Level Outcomes for Medicine, Dentistry and Health Science are being clearly identified in consultation with staff and students. The learning experiences and assessment processes used to collect evidence of achievement of the intended outcomes will be documented through the use of curriculum blueprints. Units and courses will be encouraged and supported to develop some criterion referenced formative and summative assessments and blueprint these against the intended student Learning Outcomes.

What is a Learning Outcome?

A Learning Outcome quantifies and qualifies the level of knowledge, or skill, to be attained. A standard level of performance is defined by the specific behaviour (knowledge or skill), the conditions under which the behaviour is to be observed, and the criteria by which the behaviour will be judged.

For example: Health Care Systems. **X**

Discuss the Health Care systems within Australia and interpret their implications for the management of health. **✓**

Hint:
Well-written Learning Outcomes include qualifiers to define the conditions, standards and terms under which Outcomes are met.

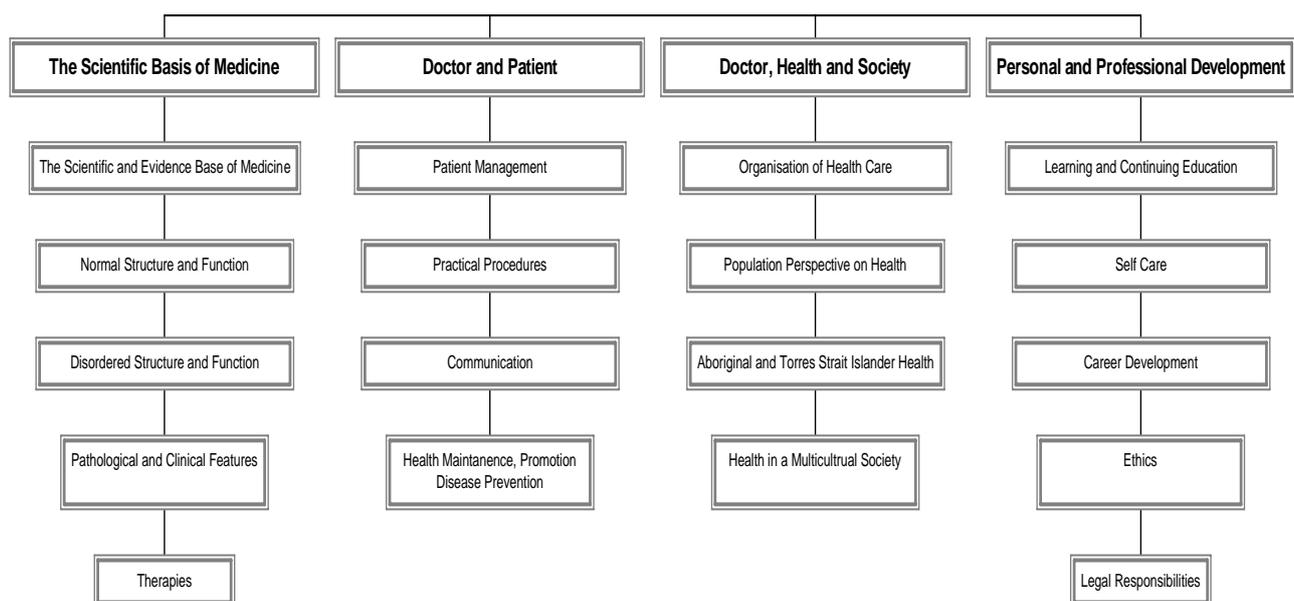
Graduate Outcomes for the UWA Medical Curriculum

The UWA medical course aims to produce doctors who:

- Understand the meaning and application of the social determinants of health and their implications for the health and health care needs of individuals, families and communities.
- Have sufficient knowledge and understanding of human structure and function, and behaviour to extend this understanding to the management of health and disease.
- Have the appropriate skills and attitudes to provide responsible clinical care within their professional limitations.
- Can demonstrate capacity for continuing self-education and further learning in their chosen field of medicine.
- Apply ethical standards of behaviour and knowledge of legal responsibilities to professional practice.
- Can apply understanding of population health issues to the health needs of individuals, families and communities.
- Have the ability and motivation to contribute to the advancement of medical and scientific knowledge.
- Have sufficient knowledge of the health care system to understand its impact upon the delivery of sustainable health care services.

Learning Outcomes for the UWA Medical Graduate

Learning Outcomes for the medical course are organised around four themes: Scientific Basis of Medicine (ScBM); Doctor and Patient (DP); Doctor, Health and Society (DHS); and, Personal and Professional Development (PPD). These themes describe important professional characteristics and skills that students will acquire during the course, and employ after course completion:



The Four Medical Themes

Hint:
Each Outcome statement should relate to one or more of the themes.

1. Scientific Basis of Medicine (ScBM)

1. Apply the scientific/evidenced based approach to medicine and practice.
2. Demonstrate in depth knowledge of normal human structure, function and behaviour.
3. Evaluate and discuss Disordered Structure, Function and Behaviour of the human in response to internal and external factors.
4. Apply knowledge of the pathological and clinical features of disease.
5. Apply knowledge of therapies to health, illness, and disease.

2. Doctor and Patient (DP)

6. Provide effective and safe patient assessment and management.
7. Perform and practice practical procedures effectively and safely.
8. Use effective communication skills and styles.
9. Apply and evaluate health maintenance, promotion and disease prevention approaches to clinical practice.

3. Doctor, Health and Society (DHS)

10. Apply knowledge of the organisation of the health care systems delivery in Australia.
11. Apply a population perspective to health and health care in the community.
12. Demonstrate a working knowledge of the socio-cultural context of health care of Aboriginal and Torres Strait Islander peoples and an ability to plan and provide comprehensive, multidisciplinary culturally secure care.
13. Demonstrate an in depth knowledge of the effect of a multicultural society on health.

4. Personal and Professional Development (PPD)

14. Apply the principles of life-long learning, teaching and continuing education.
15. Apply principles of self care.
16. Engage career development pathways.
17. Apply ethical behaviour to professional practice.
18. Know own legal and professional responsibilities.

Focus of Themes in Teaching Blocks

Teaching Block	Foundations and Normal Systems (FNS)	Foundations of Clinical Practice (FCP)	Integrated Paraclinical Sciences (IPS)	Clinical Practice
Theme				
Scientific Basis of Medicine	✓	✓	✓	✓
Doctor, Health and Society		✓		✓
Doctor and the Patient		✓		✓
Personal and Professional Development	✓	✓	✓	✓

Writing Learning Outcomes to Match Themes

The following example from Obstetrics and Gynaecology (Year 5) relates to a clinical attachment where the emphasis is primarily on diagnosis and management. The Outcomes are linked to the four themes and provide greater detail about the learning expected to occur in a particular teaching session during the clinical attachment. The number of Learning Outcomes will vary for each teaching session:

SCIENTIFIC BASIS OF MEDICINE	<ul style="list-style-type: none"> Explain how to manage a normal pregnancy. (K) Describe the routine management of minor complications of pregnancy (e.g. haemorrhoids, varicose veins, nausea, hyperemesis). (K) ...etc
DOCTOR AND PATIENT	<ul style="list-style-type: none"> Perform a normal delivery under supervision (S). Give a patient advice on exercise, alcohol, smoking and/or work during pregnancy (S) ... etc
DOCTOR, HEALTH AND SOCIETY	<ul style="list-style-type: none"> Investigate the causes of perinatal morbidity and mortality through examination of current perinatal statistics for WA and identify (or evaluate) options to minimise this. (K, S) Examine societal expectations and issues surrounding fertility and infertility. (K, A) ... etc
PERSONAL AND PROFESSIONAL DEVELOPMENT	<ul style="list-style-type: none"> Use medical records objectively and concisely for documentation of routine care (antenatal/gynaecological outpatients, partograms, observation charts, impatient records). (S, A) ... etc

A minimum provision is to clearly state the knowledge and skill/s that are expected of students as a result of the learning experiences.

Learning Outcomes for the UWA Dental Graduate

1. Integrated Science of Medicine and Dentistry

- 1.1 Demonstrate knowledge of aspects of normal human structure and function.
- 1.2 Evaluate and discuss disorders of human structure and function and their effects on health.
- 1.3 Identify and interpret the implications of systemic medical conditions to the management of oral health.
- 1.4 Formulate diagnosis of systemic medical conditions that present with oral symptoms and initiate appropriate management.
- 1.5 Interpret pathological and clinical features of disease and apply to dental practice.
- 1.6 Demonstrate and apply critical thinking to practice problems.
- 1.7 Apply an evidence-based approach to dental practice.
- 1.8 Apply and evaluate research and new information to dental practice.

2. Fundamentals of Clinical Dentistry

- 2.1 Apply appropriate diagnostic processes.
- 2.2 Identify the oral health care needs of patients.
- 2.3 Apply and evaluate strategies for oral disease prevention, health maintenance and health promotion for individuals and the community.
- 2.4 Provide effective and appropriate clinical management of patients.
- 2.5 Identify the social and behavioural nature of individuals and evaluate the associated management implications.

3. Clinical Dental Practice

- 3.1 Demonstrate the knowledge and skills of specialised areas of dentistry at a level that is appropriate for a general dentist.
- 3.2 Recognise complex situations and appropriately manage such situations in liaison with specialist health practitioners.
- 3.3 Evaluate and apply the current trends in the management of oral disease.
- 3.4 Recognize and interpret the health care systems in Australia and overseas and where appropriate apply this to dental practice.

4. Personal and Professional Development

- 4.1 Use effective communication skills.
- 4.2 Demonstrate a strong commitment to continuing education in order to maintain and further develop skills and knowledge.
- 4.3 Appraise and apply the legal, ethical and professional responsibilities required of a practising dentist.
- 4.4 Identify one's own intellectual and physical limitations and apply this awareness to the practice of dentistry.
- 4.5 Identify the impact and implications of a multicultural society on the patterns of oral health care.
- 4.6 Demonstrate an awareness of the issues regarding indigenous oral health.

Learning Outcomes for the UWA Health Sciences Graduate

Please note that the year level and graduate outcomes are currently under review.

1. Scientific and Evidence Bases of Health (SBH)

1. Integrate scientific knowledge and skills to the management of health
2. Develop, implement, and critically review research relevant to health science

2. Health in the Community (HC)

3. Describe and compare the organisation and delivery of Australian and global health systems, critically review and evaluate policies in resource allocation and health care; and develop and implement programs in the management of health
4. Analyse population health needs and promote healthy behaviours and environments through actions with individuals, communities and society and discuss equity from a public health perspective
5. Design culturally appropriate health strategies
6. Demonstrate a working knowledge of the socio-cultural context of the health of Aboriginal and Torres Strait Islander people and the ability to plan, deliver and evaluate effective strategies to promote and improve health

3. Personal Development and Professional Practice (PDPP)

7. Know and apply ethical and professional responsibilities
8. Use effective communication skills
9. Apply principles of life long learning
10. Apply principles of self care

Learning Outcomes for the UWA Podiatry Graduate

1. Integrated Science of Medicine and Podiatry (ISMP)

1. Apply the scientific/evidence based approach to podiatric practice
2. Apply an in depth knowledge of relevant normal human structure, function and behaviour
3. Evaluate and apply knowledge of abnormal human structure, function and behaviour and their effects on general and podiatric health
4. Apply knowledge of pathological and clinical features of diseases relevant to podiatry

2. Clinical Podiatric Practice (CPP)

5. Provide effective and safe patient assessment and management
6. Perform practical procedures effectively and safely
7. Use effective communication skills
8. Apply and evaluate strategies for health maintenance, promotion and disease prevention with patients and colleagues

3. Podiatric Health in the Community (PHC)

9. Apply knowledge of the organisation and delivery of the care system in Australia
10. Demonstrate a working knowledge of the socio-cultural context of health care of Aboriginal and Torres Strait Islander peoples
11. Demonstrate knowledge of the effects of a multicultural society on health care

4. Personal and Professional Development

12. Apply the principles of life-long learning and continuing education
13. Apply principles of self care
14. Engage in career development pathways
15. appraise and apply the ethical and professional responsibilities required of a podiatrist
16. Apply legal and professional responsibilities
17. Share acquired knowledge and skills with colleagues, members of the health team and the community

Applying Outcome Based Education to Course Units

While the themes present the scientific underpinnings of the medical course and clearly specify various graduate attributes students would be required to attain, it is important to indicate how the themes will be identified, evaluated and assessed. Each Outcome statement should relate to one or more of the course themes, as shown in the matrix below.

EXAMPLE: Learning Outcomes for: Year 5 Obstetrics and Gynaecology

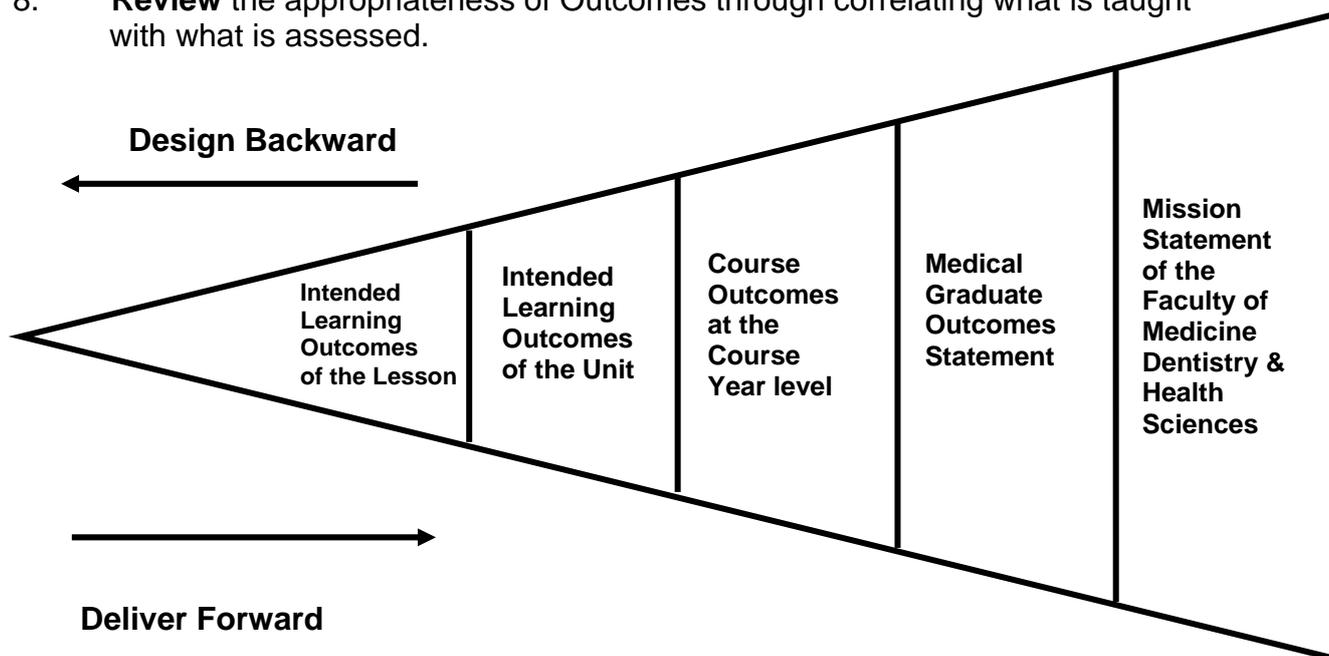
Unit Outcomes At the end of this unit, students should be able to:	Specific Unit Learning Outcomes	Year Level Outcomes	Theme and Graduate Outcomes	Teaching & Learning Experiences	Assessment
Integrate knowledge of anatomy, physiology, biochemistry and endocrinology to reproductive health and the management of specific women's health, illness and disease presentations	<ul style="list-style-type: none"> Summarise female sexual maturation Summarise normal sexual function Apply knowledge of physiology, biochemistry, histology of the menstrual cycle..... 	2.5.1 Integrate knowledge of normal human structure and function with health and illness presentations	Scientific Basis of Medicine 2. Demonstrate an in depth knowledge of normal human structure, function and behaviour	PBL sessions, CBL sessions Fixed Resource Sessions Clinical Skill Workshops Revision from previous years.	Presentation at PBL & CBL sessions. Written Examination (end of year). Clinical Examination (end of year)
Discuss and evaluate transitions and outcomes surrounding pregnancy and birth throughout the woman's reproductive life.	<ul style="list-style-type: none"> Demonstrate ability to conduct a consultation of a woman using a problem solving approach: elicit a history perform a complete and or organ specific systematic physical examination formulate a differential diagnosis.... 	6.5.1 Provide effective and safe patient assessment and management with supervision s	Doctor and Patient 6. Provide effective and safe patient assessment and management	PBL and CBL sessions Fixed Resource Sessions Ward experience.	Presentation at PBL & CBL sessions. Case Presentation. Written Examination
Apply health promotion, maintenance, disease prevention approaches to women's health	<ul style="list-style-type: none"> Explain concepts surrounding reproductive health care for well women Provide appropriate advice for a pregnant woman regarding exercise, alcohol, smoking, work and, medications 	9.5 Apply health promotion, maintenance and disease prevention behaviours with patients and colleagues <ul style="list-style-type: none"> 11.5 Apply a population perspective to health and health care 	Doctor, Health and Society 11. Apply a population perspective to health and health care in the community	PBL & CBL sessions Fixed Resource Sessions Clinical Team Attachments	Presentation at PBL& CBL sessions Case Presentation. Written Examination (end of year) Clinical Examination (end of year)

Steps in Writing Learning Outcomes

Hint:
Work backwards from existing data.

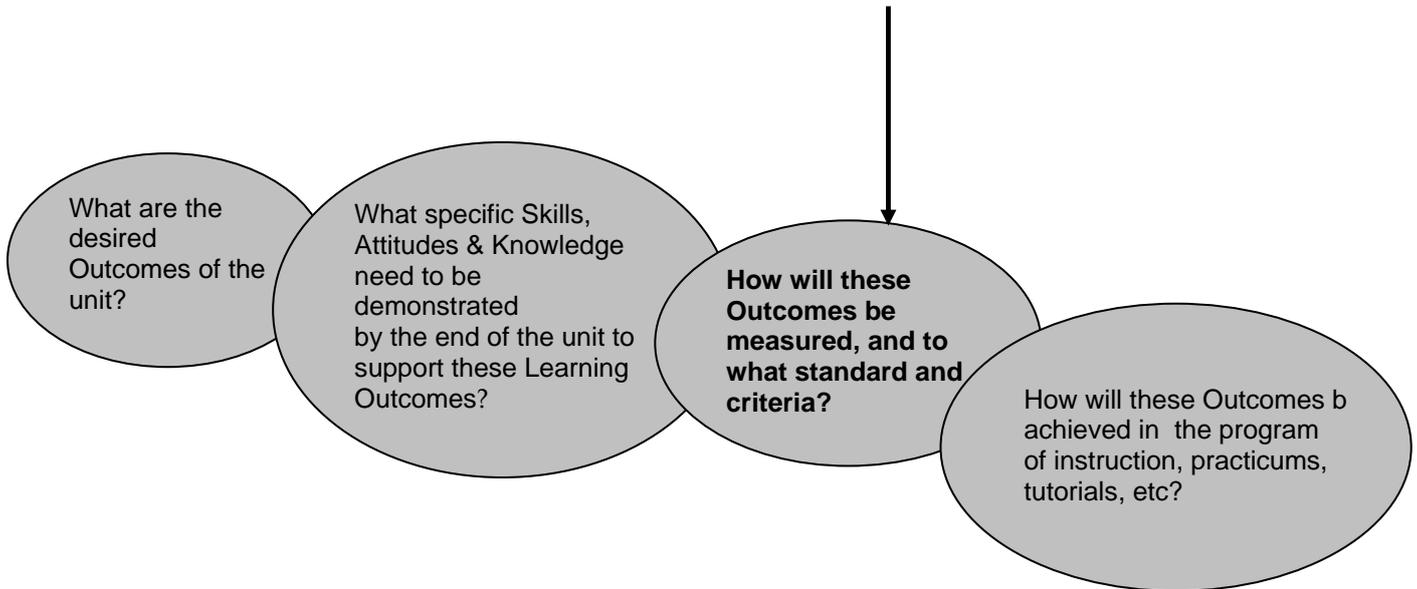
1. **Review existing course aims**, literature, course documents and reports to benchmark appropriate standards required for writing the Learning Outcomes.
2. **Identify professional attributes of ideal graduating students** (refer to professional bodies, such as Australian Medical Council and Australian Dental Council). Use the Graduate Outcomes (pages 4, 7 & 8) to decide appropriate Learning Outcomes for the course. Outcomes for each Year level in Medicine are available on the Faculty Website. Individual Unit Outcomes are derived from both Course and Year Level Outcomes.
3. **Determine Learning Outcomes** from desirable terminal practice-based knowledge, skills and behaviours implicit in graduate attributes.
4. **Assign priority to the four course themes for Outcomes** but include all themes.
5. **Assign priority to learning levels** (knowledge, skills, attitudes). The knowledge domain for Medicine and Dentistry should be complete, and comprehensive. This means that the link between knowledge, content and skills need to be carefully detailed.
6. **Agree on a basic educational philosophy** which captures preferred teaching methodologies and assessment approaches.
7. **Establish ways of measuring attainment** of Learning Outcomes through the selection of appropriate assessment tools.
8. **Review** the appropriateness of Outcomes through correlating what is taught with what is assessed.

Hint:
Well-written Learning Outcomes are clearly defined, valid, observable, measurable and specify a standard or scale of performance.



Writing Learning Outcomes

Learning Outcomes should be written in clear language in the *present tense*, identify important learning requirements, and must be assessable. There must be agreement on pre-defined criteria or conditions to ensure that learners have achieved the appropriate standard in each of the Outcomes. **Expected standards of performance must be clearly specified in the wording of each Outcome.**



Learning Outcomes must define assessment practice, which in turn should guide the approaches to teaching materials, activities, and instructional methods.

Hint:
Remember to directly link the Teaching and Learning activities to the Learning Outcomes being assessed.

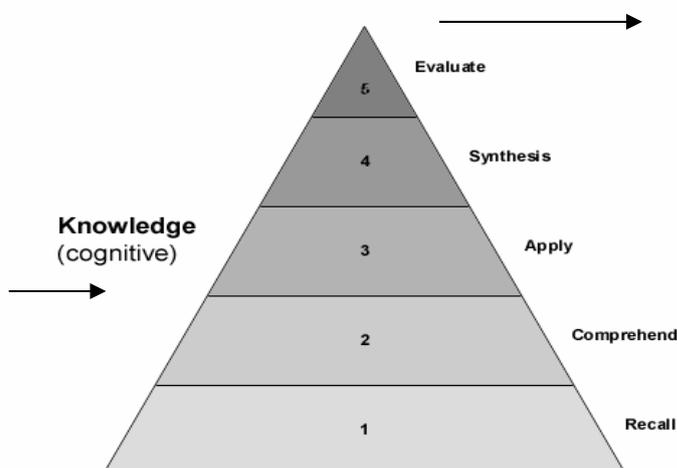
Grouping Outcomes by Domain Levels

The three groups of domains identified by educational psychologist, Benjamin Bloom, are commonly used to group objectives and learning outcomes. These are:

Hint: Include Knowledge, Skills and Attitudes Outcomes

- **Cognitive domain** – encompasses intellectual or thinking skills
- **Psychomotor domain** – encompasses physical skills or actions
- **Affective domain** – encompasses attitudes and values

Within each Domain there are several levels or **scales** you may wish to specify in your Outcomes writing. This will depend upon the extent of detail that is required in the curriculum and what you know about the learning style and readiness of the students.

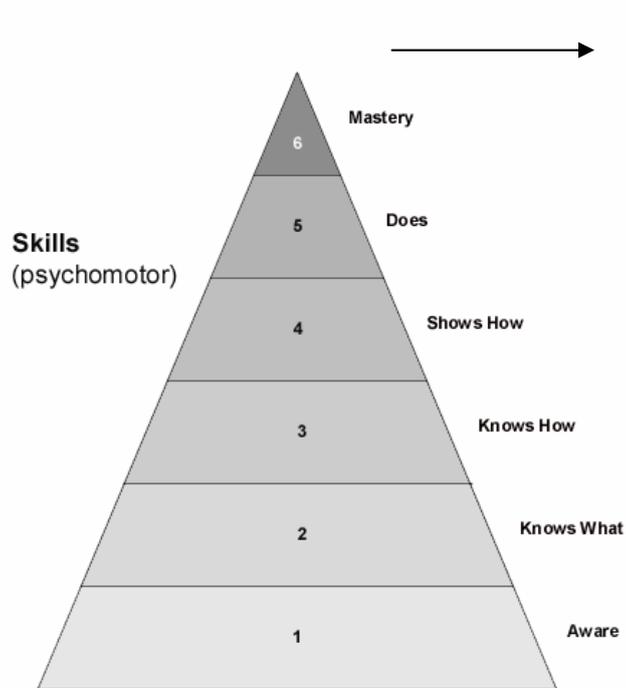


Example

Make decisions based on diagnosis, investigation and management (Levels 3-5 on the Knowledge scale)

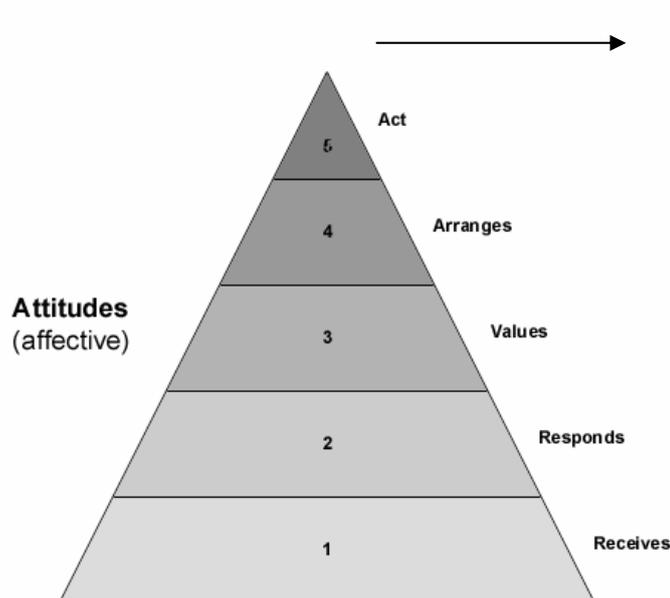
Describe the complications of hypertension (Level 2 on the Knowledge scale)

Hint:
A variety of cognitive levels should be represented in the Outcomes.



Perform a complete physical examination (Levels 3-5 on the scale)

Perform a venipuncture (Levels 3-5 on the Skills scale)



Further develop a professional attitude and conduct (Level 5 on the Attitudes scale)

Demonstrate a willingness to be critically evaluated by others (Level 3 on the Attitudes scale)

Sources:

Bloom, B.S. (1956). *Taxonomy of Educational Objectives: The Classification of Educational Goals*. New York: Longman Inc.

Miller, G. E. (1990). The assessment of clinical skills/competence/performance, *Academic Medicine*, 65, pp S63-S67.

Each domain has a list of suitable verbs for describing that level or scale when writing Learning Outcomes.

Use the following scales to write your Learning Outcomes:

Knowledge is the least complex level of thinking, with evaluation being the most complex.

TAXONOMY OF THE COGNITIVE DOMAIN	
Level	Use these verbs in written outcomes to describe the associated cognitive level:
<p>1.00 Knowledge</p> <p>1.10 of Specifics 1.11 of terminology 1.12 of specific facts</p> <p>1.20 of Ways and Means of dealing with Specifics 1.21 of conventions 1.22 of trends and sequences 1.23 of classifications and categories</p> <p>1.30 of the Universals and Abstractions in a Field 1.31 of principles and generalizations 1.32 of theories and structures</p>	<p>arrange, categorize, class, define, describe, find, identify, label, list, match, memorise, name, nominate, order, outline, read, recall, recognize, record, relate, repeat, select, sequence, state, suggest</p>
<p>2.00 Comprehension</p> <p>2.10 Translation 2.20 Interpretation 2.30 Extrapolation</p>	<p>associate, conclude, differentiate, discuss, explain, estimate, extend, extrapolate, generalise, give examples, regroup, infer, interpret, locate, paraphrase, predict, rearrange, reorder, restate, rewrite, show, summarize, transform, translate</p>
<p>3.00 Application</p>	<p>apply, assemble, calculate, compute, demonstrate, determine, discover, generalize, illustrate, manipulate, modify, operate, organize, perform, practise, prepare, structure, sketch, solve, transfer, use</p>
<p>4.00 Analysis</p> <p>4.10 of Elements 4.20 of Relationships 4.30 of Organizational Principles</p>	<p>analyse, break down, compare, contrast, deduce, detect, diagram, discriminate, differentiate, distinguish, experiment, infer, inspect, outline, point out, question, separate, sub-divide, test</p>
<p>5.00 Synthesis</p> <p>5.10 Production of a Unique Communication 5.20 Production of a Plan, or Proposed Set of Operations 5.30 Derivation of a Set of Abstract Relations</p>	<p>combine, compile, create, design, derive, develop, devise, generate, integrate, modify, plan, produce, propose</p>
<p>6.00 Evaluation</p> <p>6.10 Judgements in Terms of Internal Evidence 6.20 Judgements in Terms of External Criteria</p>	<p>appraise, assess, compare, conclude, consider, criticize, contrast, evaluate, interpret, judge, justify, measure, rate, score, select, support, validate, value</p>

Source: Tuckman, B.W. (1988). *Testing for Teachers*. New York, Harcourt, Brace, Jovanovich.

Note: some verbs may apply at several levels. For example, *modify* (comprehension → synthesis).

COGNITIVE DOMAIN

Know – Can students RECALL information?

Who, What, Where, When, How	Which one
How much	Name
Describe	Label
Define	List
Memorise	Reproduce
Literal questions	Recall

Comprehend – Can students EXPLAIN ideas?

Explain	What are they saying
Describe in your own words	Explain what is happening
Inferential questions	Give an example
Summarise	State in 5 words
What would go better	Explain what is meant
Select the definition	What restriction would you add
Read the graph table	Translate
This represents	Outline
Condense this paragraph	Locate
What part doesn't fit	Match

Apply – Can students USE ideas?

What is this used for?	How would you use
Make a model	Tell what would happen
If...how	Demonstrate how
Construct how	Show how
How much would there be if...	Design a lesson
Choose the statements that don't apply	

Analyse – Can students DETERMINE relationships?

Whole into parts	Analyse, Research, Survey
Group, Categorise, Compare and Contrast	What inconsistencies, fallacies
Arrange	What is the relationship
Chart	What is the function of
Diagram	What conclusions
Reason for...	What does the author believe
Investigate	Make a distinction
Cause for	What motive is there
Conclude	State the point of view
Separate	What relationship
Similar	Graph
Like	Differentiate
Dissect	Categorize
Distinguish fact from opinion	What persuasive technique

Synthesize – Can students combine ideas and CREATE a new entity?

New ways of doing	Take risks
Consider the unexpected	Pose an alternative
Hypothesize	Create
Compose	Solve
Design	Blend
Construct	How else would you
Build	Combine
Solve the following	Imagine
Plan	Predict
Link concepts in an unusual and flexible way	Make
What if	Make a film
Invent	Propose an alternative

Evaluate – Can students make JUDGEMENTS and support them?

Evaluate quality, relevance, reliability, truth
Argue critically
Determine the accuracy and effectiveness
Rate
Grade
Verify
Dispute
Criticise
Find the errors
Appraise
Judge
Editorialise
Defend
Rank by order of importance
Defend
Which is best
Choose and explain why
What fallacies, consistencies, inconsistencies appear
Which is more important, better, moral, appropriate, inappropriate, useful, clearer, suits the purpose, achieves the goal, logical, valid

Hint:
Keep Outcomes simple,
and unambiguous in
order to convey clear
intentions.

Checking the Quality of Outcomes

- ✓ Do they reflect appropriately all the intended Learning Outcomes and do they sit well with the present state of knowledge of the students?
- ✓ Are they observable and measurable, and is the desired exit behaviour clearly defined to a specified standard or set of conditions?
- ✓ Are they attainable by intended learners and in the time available?
- ✓ Do they reflect the course and curriculum aims?

Outcomes must:

- **define specific outcomes** or competencies **to be achieved** in terms of skills, content mastery, attitudes or values
- **form the basis** upon which **to select or design instruction materials, content or techniques**
- **provide the basis for determining or assessing** when the instruction purpose has been accomplished
- **provide a framework** within which **learners can organize their efforts to complete the learning tasks**

Well-written Learning Outcomes:

- Are carefully worded to include standards, conditions and terms which must be met.

Criteria/standards: defined levels of accuracy, quality, quantity, time constraints

- Include special conditions that apply to the actual activity *in the present tense* that the learner will perform.

Performance:
The learner will [verb]...

- Specify the degree of accuracy or proficiency that the learner must meet.

Conditions:
Given “x”... without “y “

Example: Elicit and interpret clinical symptoms and signs by history and examination and apply this information to plan management.

Blueprinting – An Example

The following matrix ties Outcomes with themes and assessment, and categorises Learning Outcomes into Knowledge Attitudes and Skills.

Unit Name		Year 5 Obstetrics & Gynaecology														
Unit Co-Ordinator		Di Carmody														
		Unit Length: Eight Week Block														
#	Summative Assessment Type	Description and/or Format	Core/Elective	Theme/s DP/DHS/PPD/SBM	Knowledge Skills Attitude	Barrier Yes/No	Weighting %	A	B	C	D	E	F	G	H	I
1	Continuous	CBL & PBL Presentations	Core	SBM	K, S, A	No	10	√	√	√						
2	Summative	OSCE	Core	SBM DP	K, S, A	No	N/A	√	√		√		√			
3	Continuous	Ante & Gynae Exam	Core	DP	K, S, A	Yes	20		√		√	√				
4	Continuous	Reflective Case Studies	Core	PPD	K, S, A	No	5				√		√			
5	Summative	CARF	Core	DP	S, A	No	5				√	√				
6	Summative	Final Written Exam	Core	SBM DP	K, A	Yes	60	√	√	√			√			

Key for course Outcomes which were addressed in the various assessment components

A	Outcome 1 Apply knowledge of anatomy, physiology, biochemistry and endocrinology to the female reproductive system.
B	Outcome 2 Discuss and evaluate transitions and outcomes surrounding pregnancy and birth throughout the woman's reproductive life.
C	Outcome 3 Explore scientific knowledge surrounding the management of specific health problems for women.
D	Outcome 4 Commence development of effective clinical. and interpersonal skills related to women's health.
E	Outcome 5 Develop skills related to interactions with health care professionals and colleagues.

F	Outcome 6 Explore related medico-legal and ethical issues.
G	
H	
I	

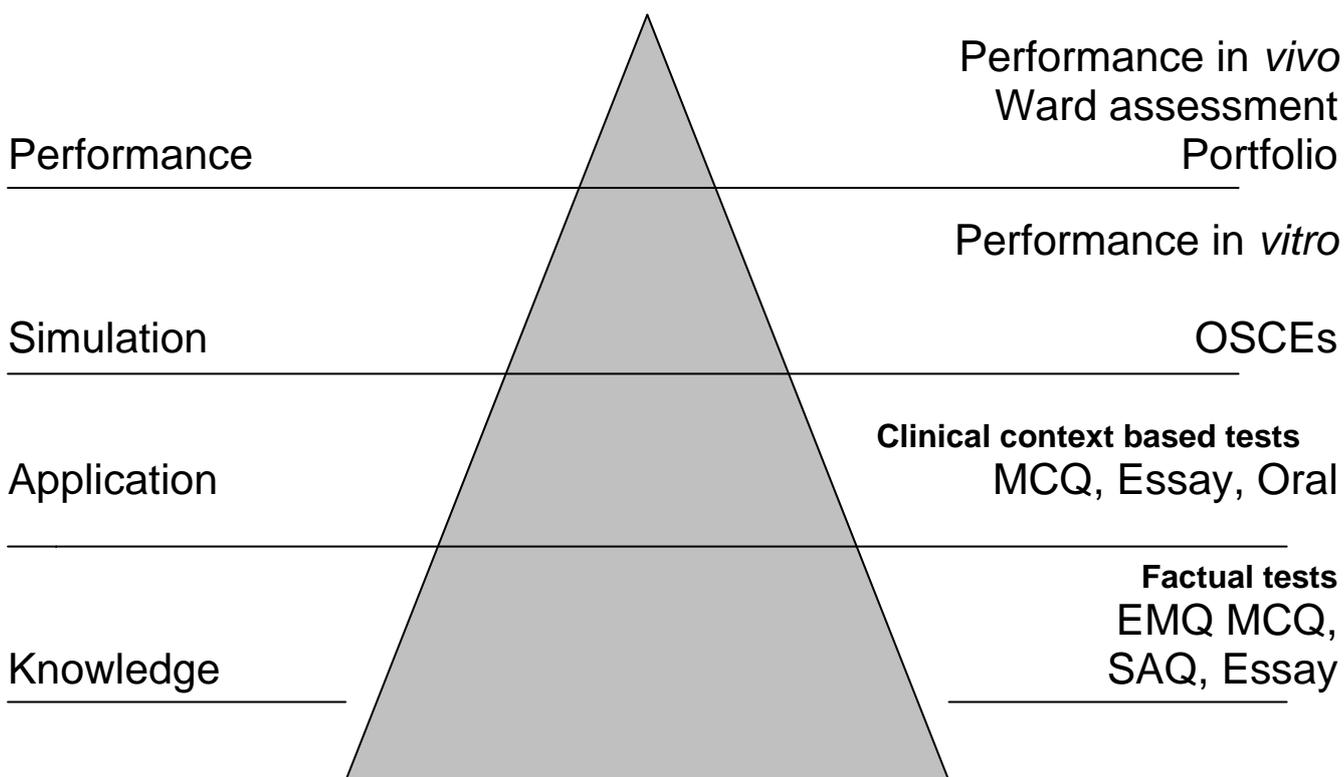
State Outcomes that can be Assessed

Learning Outcomes must provide a useful basis for creating test questions, they must contain verbs that describe *observable, measurable, demonstrable* actions or skills, and *specific levels of thinking*, because these are things that can be tested.

Hint:
 Avoid the use of vague qualifiers such as *very, fully, completely, totally and quickly*

Avoid words like.....	Use words like.....
Know	List
Understand	Describe
Be familiar with	Evaluate
Appreciate	Identify
Be aware of	Design
Have a good grasp of	Explain
Have a knowledge of	Select
Realise the significance of	Distinguish
Believe	Construct
Be interested in	Solve

Miller's (1990) Pyramid shows how the hierarchy of various learning levels can be matched to particular types of assessment



Source: Miller, G. E. (1990). The assessment of clinical skills/ competence/ performance. *Academic Medicine*, 65, pp 563-567.

Choose assessment methods to suit your desired Learning Outcomes and course content:

• Assessing knowledge and comprehension

Essays	Reflective journals/portfolios
Report	Critical incident analysis
Short answer questions	Concept mapping
Reflective case summary	Case based article
Videotaped consultation	Critical appraisal

• Assessing critical thinking skills

Essay	Critical evaluation of the literature
Report	Critique on an issue
Critical incident analysis	Reflective journal writing
Assessing Peer feedback	Seminar presentation

• Assessing problem solving skills

Simulation	Problem Based Learning (PBL)
Report	Poster
Clinical assessment	Simulated patient interviews
Essay Question	Viva voce
Observed long case	

• Assessing performance of procedures and demonstrating techniques

Mastery performance tests	OSCE
Video skill assessment	Web-based skills assessment
Assessment of competence in simulation	Ward rating
Case History exercises	Special clinical skills exam
Clinical tutor evaluation	Laboratory reports
Observed long case	Case presentation
Clinical tutor assessment	Case assessment

• Assessing ability to reflect upon learning and integrate into professional practice

Reflective journals	Portfolio
Simulations	Critical incidents
Case Study	Project
PBL	Log diary
Clinical tutor evaluation	Clinical experience record
Videotaped consultation	Reflective case summary
Case presentation	Clinical tutor rating

- **Assessing independent learning skills**

Learning contracts

Peer assessment

Critical appraisal

Clinical experience record

Portfolios

Project

Reflective case summary

Case based article

- **Assessing collaborative learning skills**

Group projects where the group *process* and *group outcomes* are assessed (using criteria against which the group can assess itself and determine future, more effective ways of functioning)

Peer tutoring

- **Assessing research skills**

Research assignment that is professionally relevant (and where students are assisted to develop the requisite skills)

Develop a database on a particular area

Writing an annotated bibliography

Case based article

Research Paper

Literature review

Hint:

Prior to Unit commencement, provide students with a statement of the Learning Outcomes and indicate where the learning is to be covered in the nominated Unit curriculum.

Glossary of Terms

Account	Account for, state reasons for, report on. Give an account, or narrate a series of events for transactions
Analyse	Identify components and the relationship between them; draw out and relate implications
Apply	Use, utilise, employ in a particular situation
Appreciate	Make a judgment about the value of
Assess	Make a judgment of value, quality, outcomes, results or size
Calculate	Ascertain/determine from given facts, figures or information
Clarify	Make clear or plain
Classify	Arrange or include in classes/categories
Compare	Show how things are similar or different
Construct	Make, build, put together items or arguments
Contrast	Show how things are different or opposite
Critically analyse/ evaluate	Add a degree or level of accuracy, depth, knowledge and logic, questioning, reflection and quality to analysis/evaluation
Deduce	Draw conclusions
Define	State meaning and identify essential qualities
Demonstrate	Show by example
Describe	Provide characteristics and features
Discuss	Identify issues and provide points for and/or against
Distinguish	Indicate as being distinct or different from; note differences between
Evaluate	Make a judgment based on criteria; determine the value of
Examine	Inquire into
Explain	Choose relevant and/ or appropriate details
Extrapolate	Infer from what is known
Hypothesize	Explain the cause from which a plausible mechanism can be advanced
Identify	Recognise and name
Interpret	Draw meaning from
Investigate	Plan, inquire into and draw conclusions about
Justify	Support an argument or conclusion
List	Ordering of related items
Outline	Sketch in general terms, indicate the main feature of
Predict	Suggest what may happen based on available information
Propose	Put forward (a point of view, idea, argument) for consideration or action
Recall	Present remembered ideas, facts or experiences
Recommend	Provide reasons in favour of
Recount	Retell a series of events
Summarise	Express concisely the relevant details
Synthesize	Put together various elements to make a unique composite

Blueprinting – A Sample

Unit Name

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Unit Co-Ordinator

Unit Length:

#	Summative Assessment Type	Description and/or Format	Core/ Elective	Theme/s DP/DHS/ PPD/SBM	Knowledge Skills Attitude	Barrier Yes/No	Weighting %	A	B	C	D	E	F	G	H	I

Key for course Outcomes which were addressed in the various assessment components

A	
B	
C	
D	

E	
F	
G	
I	

Notes: