1. Communicating clear learning outcomes

The first item in eVALUate asks students their level of agreement with this statement:

*The learning outcomes in this unit are clearly identified.*

This document aims to assist teachers to communicate clear unit learning outcomes to their students.

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1. What are learning outcomes?
Unit learning outcomes are what students are expected to know, understand or be able to do in order to be successful in a unit. Unit learning outcomes begin with an action verb and describe something observable and measurable.

2. Why are learning outcomes so important?
Learning outcomes are the most important section of your unit outline. They
- clearly communicate the type and depth of learning students are expected to achieve
- provide a benchmark for prior learning assessment
- clearly communicate graduates’ skills to prospective employers
- indicate to the students how they might organise their learning programme.

3. How do unit learning outcomes relate to the course learning outcomes?
Unit learning outcomes contribute to students’ achievement of the course learning outcomes (which derive from Curtin’s nine graduate attributes). The course team interprets the outcomes for a course or degree programme and the learning stages that students need to progress through to achieve these outcomes. This known as the course curriculum map. (For a full explanation of this process, refer to Teaching and Learning at Curtin at http://lsn.curtin.edu.au/publications/tlc.html).

For example, a course learning outcome could be that students ‘produce a comprehensive review of relevant literature in a particular field and present the review in the format of paper suitable for publication in a particular professional journal.’ At some point within their course, students must learn to:
- use the library, library catalogues and/or scholarly databases or locate other sources of relevant information;
- use appropriate computer technology – for example the Internet, database search tool, word-processing tool and Endnote for referencing and/or searching;
- reference appropriately;
- write in the style of the discipline or genre;
- distil ideas from disparate sources and synthesise a new structure from them; and
- produce a document that meets specified requirements.

These various learning stages become the unit learning outcomes at different stages of the course.

4. What do I do if my course does not yet have a curriculum map?
If your course team is yet to work on its curriculum map, then in the meantime, you should reword your unit objectives or outcomes using the following process:

1. Imagine that a couple of prospective students come to see you, and say that they are thinking of enrolling in your unit. They want to know exactly what it is they will be able to know or do if they are successful in your unit.
2. Write down three or four statements which explain to those students exactly what it is that they will be able to do when they have successfully completed your unit. Rework the
statements until they are clear and concise, and readily understandable by a person who has not yet passed the unit (use a colleague or friend to test this).

3. Begin to craft the statements into learning outcomes.
   a. First, make sure every statement begins with a verb which clearly describes exactly what the students will be expected to achieve. Describe specific and achievable tasks (such as “describe” or “analyse” or “evaluate”) rather than vague tasks (like “appreciate”, “understand” or “explore” or “consider”). The tasks should assess a range of cognitive abilities—not just memorization (the lowest level task) but analysis, synthesis, and evaluation. For more information, see the work based on Bloom’s Taxonomy in the Appendix.
   b. Then, ensure that the outcomes are intellectually challenging and important, measuring achievement of essential rather than trivial learning.
   c. Think about how you will know when a student has achieved each one—how will you assess them. Make sure assessment is feasible—that you and the student will know when an outcome has not been achieved, and (conversely) that it will be clear when students have achieved an outcome at a very high level. Make sure the assessments tasks you have in mind are going to be fair and equitable for all students.

In summary, good unit learning outcomes are:

<table>
<thead>
<tr>
<th>Clearly stated tasks of higher thinking abilities</th>
<th>They are free from jargon and complex vocabulary, and they describe specific and achievable tasks (such as “describe” or “analyse”) rather than vague tasks (like “appreciate”, “understand” or “explore”).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important learning goals</td>
<td>They describe the essential (rather than trivial) learning in the unit which a student must achieve.</td>
</tr>
<tr>
<td>Achievable</td>
<td>They can be achieved within the study period and there are sufficient resources are available.</td>
</tr>
<tr>
<td>Demonstrable</td>
<td>They can be demonstrated in a tangible way.</td>
</tr>
<tr>
<td>Measurable</td>
<td>They are assessable (and achievement, and quality of achievement, can be observed).</td>
</tr>
<tr>
<td>Fair and equitable</td>
<td>Students with disabilities or constraints can achieve them.</td>
</tr>
</tbody>
</table>

Here are some examples of how good unit learning outcomes might be expressed.

**Successful students in this unit can:**

- Construct and justify logical arguments about [a significant issue in the field].
- Critically analyse [a significant issue in the field].
- Conduct a critical review of [a significant issue in the field].
- Produce a [significant document] at a level acceptable to [stakeholders in the field].
- Collaborate with [stakeholders or peers] in the successful production of a [significant document].
- Plan and carry out a [significant event] for [stakeholders in the field].
- Use [discipline resources] to effectively [manage a discipline-related problem].
- Evaluate [a scenario in the field] and produce [a significant report].
- Work effectively as a team member to solve [a significant problem in the field].
- Use \textit{[a discipline-related]} theory to develop a solution to \textit{[a significant problem]} within the context of discipline.

### 5. Designing learning outcomes which stimulate higher order thinking

\textbf{Unit learning outcomes} can be pitched at various levels of thinking. According to Bloom (1956), assessments which require a lower order of thinking skills require students to demonstrate their \textbf{knowledge} and \textbf{comprehension}. More demanding tasks—and those more suitable to university education—require students to demonstrate \textbf{application}, \textbf{analysis}, \textbf{synthesis} and \textbf{evaluation}. The table below gives examples of these sorts of tasks, and includes ‘cues’—keywords in assessment tasks, which may indicate what level of thinking is required. While tasks at levels 1 and 2 are acceptable, the bulk of assessment items at undergraduate level should aim to require students to perform at levels 3 and beyond.

<table>
<thead>
<tr>
<th>Competence</th>
<th>Skills Demonstrated</th>
</tr>
</thead>
</table>
| 1. Knowledge | observation and recall of information  
knowledge of dates, events, places  
knowledge of major ideas  
mastery of subject matter  
Cues: list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, state, indicate, who, when, where, etc. |
| 2. Comprehension | understanding information  
grasp meaning  
translate knowledge into new context  
interpret facts, compare, contrast  
order, group, infer causes  
predict consequences  
Cues: summarise, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend, arrange, review, express, explain. |
| 3. Application | use information  
use methods, concepts, theories in new situations  
solve problems using required skills or knowledge  
Cues: apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover, sketch, employ, select, schedule, dramatise. |
| 4. Analysis | seeing patterns  
organisation of parts  
recognition of hidden meanings  
identification of components  
Cues: analyse, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer, differentiate, discriminate, calculate, categorise, examine, analyse (data), question, criticise. |
| 5. Synthesis | use old ideas to create new ones  
generalise from given facts  
relate knowledge from several areas  
predict, draw conclusions  
Cues: combine, integrate, modify, rearrange, substitute, plan, create, design, construct, invent, what if?, compose, formulate, prepare, generalise, rewrite, arrange, formulate, assemble, manage, organise, compose, propose, conduct. |
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6. Evaluation

| compare and discriminate between ideas |
| assess value of theories, presentations |
| make choices based on reasoned argument |
| verify value of evidence |
| recognise subjectivity |

Cues: assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarise, appraise, argue, predict, estimate


6. Communicating the learning outcomes in your unit outline

The following table illustrates how a unit outline might show how the unit learning outcomes are aligned with (i) the course learning outcomes, (ii) external professional competencies and (iii) assessment tasks.

<table>
<thead>
<tr>
<th>Unit: Information Skills in Animal Science 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index No: 12345</td>
</tr>
<tr>
<td>Credits: 25</td>
</tr>
<tr>
<td>Contact Hours: 2 hours lecture; 2 hours tutorial each week</td>
</tr>
<tr>
<td>Pre-Requisite: nil</td>
</tr>
<tr>
<td>Syllabus: Students learn to locate and critically evaluate information from a range of primary and secondary academic resources to produce a professional report for a company, as well as oral presentation for a lay audience.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Learning Outcomes</th>
<th>Unit Learning Outcomes</th>
<th>Accreditation Competencies from the Association of Animal Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Apply knowledge</td>
<td>1.1 Apply their knowledge in this discipline to a range of current animal science issues</td>
<td>1.1</td>
</tr>
<tr>
<td>2 Think critically</td>
<td>2.2 Construct a sustained logical and rational argument drawing on evidence from academic sources; 2.3 Think creatively to generate possible solutions to issues;</td>
<td>2.2</td>
</tr>
<tr>
<td>3. Access, evaluate and synthesise information</td>
<td>3.1 Find information in academic texts, journals, and government reports; 3.2 Evaluate the strengths and weakness of information from a range of sources; 3.3 Synthesise information from several sources;</td>
<td>4.1, 4.6</td>
</tr>
<tr>
<td>4. Communicate effectively</td>
<td>4.1 Produce a professional report on an animal science issue; 4.2 Present an engaging and convincing oral presentation to a lay audience on an animal science issue</td>
<td>3.1, 3.3</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Assessment Tasks</th>
<th>Value</th>
<th>Unit learning outcomes assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Critical reflection on searching strategies (week 3)</td>
<td>10%</td>
<td>1.1, 3.1, 3.2</td>
</tr>
<tr>
<td>2 First draft of section 1 of the report showing correct use of referencing (week 5 – in class)</td>
<td>10%</td>
<td>3.1, 3.2</td>
</tr>
<tr>
<td>3. Professional report—first draft (week 8)</td>
<td>30%</td>
<td>1.1, 2.2, 2.3, 3.3, 4.1</td>
</tr>
<tr>
<td>4. Professional report—final (week 11)</td>
<td>30%</td>
<td>1.1, 2.2, 2.3, 3.3, 4.1</td>
</tr>
<tr>
<td>5. Oral presentation (weeks 12-14)( Peer and tutor assessment)</td>
<td>20%</td>
<td>2.2, 2.3, 3.3, 4.2</td>
</tr>
</tbody>
</table>

In order to pass this unit, a student must demonstrate achievement of all the unit learning outcomes.

7. Ensuring your students are clear about the unit learning outcomes

In addition to the unit outline, you should reiterate the learning outcomes to your students on a regular basis. The learning outcomes, after all, are the essential learning achievements in the unit. Remind your students what they are, and refer to them in lectures, tutorials, labs, and particularly in clinical or teaching practice. You should particularly draw your students’ attention to them in relation to each assessment task.

8. For further assistance

Teaching development staff are available for help with individuals or teams.

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Resources to help you

A range of resources to help you to develop strategies to improve items which have been identified as needing improvement, are available from the eVALUate website, or alternatively a hard copy can be forwarded to you by Terri Crowe (x2305 or T.Crowe@curtin.edu.au). Resources are available for each of the following items of the eVALUate questionnaire.

1. Communicating clear learning outcomes
2. Creating engaging learning experiences
3. Creating effective learning resources
4. Assessing student achievement of learning outcomes
5. Providing feedback for student learning
6. Improving student perceptions of workload
7. Improving student perceptions of teaching quality