The University of Western Australia - Faculty of Life and Physical Sciences

MINUTES OF THE MEETING OF THE FACULTY
TEACHING AND LEARNING COMMITTEE
held in Room 1.58, First Floor, Physics Building on Tuesday 14 June 2011

Present:
Associate Professor Peter Whipp (Chair)
Ms Jenny Gamble (Faculty Manager)
Dr Jane Hallos (Student Advisor)

Representatives from Schools:
Dr Jan Meyer (Anatomy and Human Biology)
Winthrop Professor Alice Vrielink (Biomedical, Biomolecular and Chemical Sciences)
Winthrop Professor Ian McArthur (Physics)
Assistant Professor Vance Locke (Psychology)
Winthrop Professor Robert Grove (Sport Science, Exercise and Health)

Other Representatives:
Associate Professor Des Hill (Mathematics and Statistics)
Ms Merrilee Albatis (Science Library)
Mr David Enright (Program Manager/Offshore Programs)

Visitors:
Dr Joanne Castelli (PAL coordinator)

Apologies
Ms Marjan Heibloem (Representative from FNAS)
Mt Tiago Tomaz (Postgraduate Student Representative)
Associate Professor Thomas Martin (Faculty Offshore Programs Director)
Associate Professor Nancy Longnecker (Science Communication)
Mr Linden Blair (Undergraduate Student Representative)

Kath Williams (Executive Officer)

1. MINUTES

RESOLVED – 5
that the minutes of the meeting of Teaching and Learning Committee held on Tuesday, 10 May be confirmed.

2. DECLARATIONS OF POTENTIAL FOR CONFLICT OR PERCEIVED CONFLICTS OF INTEREST

No conflicts were declared.

3. ITEMS/BUSINESS IN PROGRESS FOR NOTING SINCE PREVIOUS MEETING

<table>
<thead>
<tr>
<th>Item/Business in Progress</th>
<th>Progress Update</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of assessment and amendment of Marks</td>
<td>Policies to be created</td>
<td>To be revisited</td>
</tr>
</tbody>
</table>
4. **CHAIRS REPORT**

The Chair advised members of the following:

- **Science Communication Research Skills (SCoReS) online Resource Project**

  At the meeting the Chair tabled two documents relating to the SCoReS Online Resource Project (Attachment A & B). Further development of the five modules was required and members were asked to:

  - Identify domain specific actions or processes that could be incorporated.
  - Provide annotated examples of students' work. Members were advised that should none be forthcoming examples would be provided, but it would be more beneficial to have authentic examples.
  - Provide teaching related material that would be valued such as a literature review. The material would then be turned into an interactive source such as drag and drop.

  One member asked what would be the inducement for students to take this zero point module and was informed that assessment needed to be built into assessment practices.

- **University Assessment Practices**

  At the meeting, the Chair provided members with a copy of the research project "University Assessment Practices at Level 1: Exploring Student Perceptions of Fairness, Transparency and Authenticity" (Attachment C). Members noted that financial support had come from the Teaching and Learning Development fund 2010. Some of the key features included:

  - Gender did not influence ratings of fairness, transparency and authenticity;
  - Exams were perceived to be significantly fairer than individual assignments;
  - Exams were seen to be significantly more transparent than group work and individual assignments;
  - For exams and individual assignments, students' perceptions about assessment appeared to be highly dependent upon the final mark they received for the assessment task.

  Members requested clarification on the terminology used and it was agreed that this report should be discussed in full at the next meeting of committee.

**ACTION** – Item to be placed on the Agenda for the June meeting of this committee.
5. DURATION OF EXAMS
Faculties were asked to consider moving from 3 hour to 2 hour examinations, which could reduce the examination period by 2 days. The table that was provided in the Agenda showed that the Faculty only had a small number of 3 hour exams and the Faculty Manager informed members that most schools in the Faculty had already reduced examination times to 2 hours or less. Possible units that still have 3 hour exams could be in Microbiology or Physiology. Members noted that the Business School have split their examinations into two 2 hour ones; of which one is taken mid semester.
ACTION – Executive Officer to identify those units with 3 hour exams and report this back to the Faculty Manager.

6. MATHEMATICS SKILLS
2011 saw the first intake of the WACE cohort entering University and the School of Mathematics and Statistics was now in a position to reflect upon the situation regarding the suite of new first year units introduced this year in order to accommodate the very significant changes to the high school Mathematics curriculum. The School of Mathematics and Statistics had recommended that:

- Students entering UWA with WACE Mathematics 3A/3B (but no higher level of WACE mathematics) be allowed to take MATH1050 Introductory Calculus if a solid elementary level of calculus was required for their studies.
- MATH1045 Intermediate Calculus be cancelled after semester 2 2011 and be replaced by MATH1038 Calculus and its applications.

Members recognised that students were entering University unprepared and were currently struggling with the mathematical content; however they felt that the recommendation above would not solve the problem. It was agreed that a working party be set up, to address this issue, with the following members; Student Advisor; PSB Program Manager; Mathematics representative and the representative from the School of Biomedical, Biomolecular and Chemical Sciences.

ACTION – Executive Officer to set up first meeting of working party.

7. PSB REPORT: INTEGRATION OF ACADEMIC PROCEDURES AND STUDENTS RIGHTS INTO AN ONLINE MODULE
The AUQA review of PSB had identified the need for offshore students to be more aware of academic assessment procedures and their rights as a student. Recommendations to address this issue were included in the agenda. The Faculty Manager felt that the current procedures and the new procedures that had been adopted had satisfied this requirement. These procedures included:

- Each student received a Survival Guide;
- Each student was required to attend Orientation;
- WebCT held information pertaining to this;
- Face to Face interviews had taken place (new procedure) and
- A Student/Staff Committee was to be developed.

Members were satisfied that this requirement had been met and suggested that no further action on this issue was necessary.

8. FACULTY MANAGER LEAVING
The Faculty Manager was sincerely thanked for the significant contribution and wise counsel that she had given to the Faculty.
Science Communication and Research Skills (SCoReS)
Online Resource Project

Request for Materials

Below are the five modules with associated tutorials now being developed for the SCoReS online resource.

You are requested to:

1. Identify the tutorials where you can provide domain specific actions/processes
2. Provide annotated examples of work – good or bad
3. Provide teaching related materials such as:
   - Interactive activities
   - Instructional activities, proformas
   - Discovery learning tasks/guided discovery tasks
   - Problem solving tasks

The table below provides examples of suggested learning strategies/interactive activities for each of the tutorials showing how and where the teaching related materials can be used.

<table>
<thead>
<tr>
<th>Module: Prepare to write</th>
<th>Suggested Learning Strategies (Interactive Activities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific writing style</td>
<td>Information is provided about the principles of scientific writing. These principles are followed by examples from different disciplines. Each example shows mark-up indicating how it has been edited to make it more precise, clear and brief. Multiple choice - scientific vocabulary. Learners select the correct definition for a series of scientific terms.</td>
</tr>
<tr>
<td>Types of scientific writing</td>
<td>Learners are provided with information about a range of scientific writing types. Key aspects of each type are presented. Information about audience and purpose are highlighted. Click and drag - Learners drag different examples (small images, excerpts or titles) of scientific writing into the appropriate category (type of writing).</td>
</tr>
<tr>
<td>Structuring an argument</td>
<td>Interactive diagram showing how an argument is structured.</td>
</tr>
<tr>
<td>Collecting scientific evidence</td>
<td>Interactive diagram: illustrating the evidence gathering process. Multiple choice quiz: Students are provided with short scenarios and select the most appropriate evidence from the options provided.</td>
</tr>
<tr>
<td>Evaluating scientific evidence</td>
<td>Click and drag: Students select the most appropriate types of evidence to support an argument from a range of options provided. They drag each piece of supporting evidence into the 'argument' category.</td>
</tr>
</tbody>
</table>

### Module: Write scientifically

#### Tutorial

**Suggested Learning Strategies (Interactive Activities)**

**Essays**
- Activity on selecting/structuring evidence to support an argument.

**Exam writing**
- Multiple choice quiz using scenarios and covering:
  - Reading and deconstructing the exam question
  - The planning process
  - Time management
- Image with pop-ups. Students are asked to identify errors in an excerpt from a sample exam response.

**Literature Review**
- Image response multi-choice quiz. Students are presented with excerpts from scientific literature reviews. Using the evaluation criteria provided, they rate the literature review and receive instant feedback.

**Lab reports**
- Image with pop-ups: Students identify areas of a lab report that are not presented correctly. Hot spots are hidden and students receive feedback in a pop-up box if they can correctly identify and click on errors.

**Scientific articles**
- Interactive diagram exploring the publication and peer review process. Multiple choice: components of a scientific report.
- Image with pop-ups: Students identify successful elements of a sample scientific article (excerpt).

**Research projects**
- Time management case study with multiple choice responses.
- Image with pop-ups: Identify errors in sample research project excerpts.

**Writing for the public**
- Multiple choice: Students select the correct response to short case studies dealing with an understanding of audience and purpose.

**Grant proposals**
- Interactive diagram exploring the grant proposal process. Multiple choice: research ethics.
- Image with pop-ups: Students identify successful elements of a sample grant proposal (excerpt).

### Module: Collaborate

#### Tutorial

**Suggested Learning Strategies (Interactive Activities)**

**Collaboration**
- Interactive diagram showing an overview of collaboration within the scientific community.
- Click and drag: Identify ways to collaborate. Student's select suggestions provided and drag them to a target called "collaborate".

**Diversity in groups**
- Multiple choice quiz - diversity.
  - Students complete a group work planning tool and use selected learning style and personality profiling tools to identify and work with diversity.

**Achieving group goals**
- Students complete a planning table which lists goals, timeline, success indicators. This could be included as a proforma or check list.

**Communicating with your group**
- Students develop a communication strategy for their project using a planning tool (word document).

**Evaluating group work**
- Students evaluate their project using an evaluation tool (word document).

**Developing leadership skills**
- Students complete a self-evaluation tool and reflect on their leadership style and goals.

### Module: Deliver your presentation

#### Tutorial

**Suggested Learning Strategies (Interactive Activities)**

**Targeting your audience**
- Students watch short videos and determine if the delivery strategies used aligned with the audience and purpose of the presentation.

**Structuring a presentation**
- Interactive diagram illustrating presentation structure.
  - Activity: select a presentation structure and complete a presentation outline.

**Preparing visual aids**
- Click and drag: Match the visual aid to the audience.
<table>
<thead>
<tr>
<th>Delivering presentations</th>
<th>Students watch a range of presentations and develop a critique. Sample answers are provided so that they can check their response. Students look at an interactive image and complete an OSH checklist/hazard evaluation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debating and panel discussions</td>
<td>Multi-choice: Scenarios (transcripts or video) are provided and students select the correct or most appropriate response from options provided.</td>
</tr>
</tbody>
</table>

**Module: Beyond your degree**

<table>
<thead>
<tr>
<th>Tutorial</th>
<th><strong>Suggested Learning Strategies (Interactive Activities)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Global citizenship and adapting to change</td>
<td>Interactive diagram illustrating global citizenship. Self-reflection tool. Students complete a self-reflection tool (word document) exploring how well they adapt to change.</td>
</tr>
<tr>
<td>Evaluating your skills</td>
<td>Students complete a structured skill evaluation process (word). Collaborative activity: Students ask a colleague to evaluate their skills and compare this evaluation with their own. Students develop a portfolio.</td>
</tr>
<tr>
<td>Applying for a job</td>
<td>Interactive diagram: Selection criteria response structure. Activity: Develop a CV using the template provided. Multiple choice: Select the best response to selection criteria.</td>
</tr>
<tr>
<td>The job interview</td>
<td>Using scenarios provided, students select a suitable response or interview plan.</td>
</tr>
<tr>
<td>Developing a career plan</td>
<td>Students complete a career planning tool (word document).</td>
</tr>
</tbody>
</table>
SCoReS Content Matrix - Final

UWA Science Communication and Research Skills (SCoReS) Online Resource Project
# Content Matrix

<table>
<thead>
<tr>
<th><strong>Client:</strong></th>
<th>The University of Western Australia (SCORES Team)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attention:</strong></td>
<td>Claire Foster. Joanne Castelli</td>
</tr>
<tr>
<td><strong>Date of Issue:</strong></td>
<td>Monday 6th June 2011</td>
</tr>
<tr>
<td><strong>Document Reference:</strong></td>
<td>SCORES_Project_Spec_UWA_V1_Final</td>
</tr>
<tr>
<td><strong>Document Status:</strong></td>
<td>Final</td>
</tr>
</tbody>
</table>
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# Change Management Log

<table>
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<tr>
<th>Version</th>
<th>Doc Ref</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>V0.1</td>
<td>Draft content matrix document provided to UWA SCoReS team for review and comment.</td>
<td>Dannielle Phelan</td>
</tr>
<tr>
<td>V0.2</td>
<td>Draft content matrix prepared after workshop for SCoReS team review and comment.</td>
<td>Dannielle Phelan</td>
</tr>
<tr>
<td>V0.3</td>
<td>UWA comments</td>
<td>Claire Foster, Joanne Castelli</td>
</tr>
<tr>
<td>V1</td>
<td>Final</td>
<td>UWA SCoReS Project team and Lantern Learning Design</td>
</tr>
</tbody>
</table>
Workshop Summary

On Wednesday the 18th May 2011, the SCoReS project team participated in a four hour content mapping workshop.

During this workshop:

- The number of tutorials\(^1\) required for the SCoReS project were reviewed. Tutorial names were simplified.
- The organisation of tutorials into modules\(^2\) was discussed. Module titles were changed and modules were re-structured.
- The content division between Scores Phase 1 (Communication Skills) and SCoReS Phase 2 (Research Skills) was addressed and clarified.
- The number of tutorials proposed for SCoReS phase one changed from twenty three (23) to thirty (30). Of the original SCoReS project structure, ten (10) tutorials remained (though tutorial names and focus changed in some cases). Twenty (20) new tutorials were created.
- Tutorial default order was clarified and revised.

As an outcome of the workshop Lantern Learning Design:

- Completed a review of the content matrix for the UWA CARS project to identify common content.
- Reviewed the “Draft Content Outline of Science Research Skills” to identify content that was covered in SCoReS Phase 1 (Communication) and content that will be delivered during SCoReS Phase 2 (Research).
- Re-named module titles using active language.
- Represented the structure of the revised modules and tutorials.
- Developed learning outcomes for thirty tutorials.
- Expanded the content outline for nine tutorials. and developed a content outline for twenty one tutorials.
- Proposed suggested interactive learning activities for thirty tutorials based on templates developed for the UWA CARS project.

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\(^1\) **Tutorials:** The definition of tutorials within this document remains consistent with the “Learning Design and Project Specification” document.

\(^2\) **Modules:** This document refers to “Modules” as a method of grouping tutorials by topic. This grouping is not reflected in the proposed structure of online resources as each tutorial will be accessed as an individual learning object. Module grouping is, however, useful as a tool for discussion.
Product Structure

SCoReS Phase 1 (Communication)

Prior to the workshop, twenty three tutorials were proposed for the SCoReS project, these tutorials were organised into four modules as shown in Figure 1.

As a result of the workshop:

- Tutorials were re-organised into five (5) re-named modules. This organisation is represented in Figure 2.
- Ten (10) of the existing tutorial titles were not substantially changed but were moved (marked with blue shaded boxes).
- Twenty (20) new or substantially re-worked tutorials were proposed (indicated by white unshaded boxes).
- Six (6) tutorial topics originally intended for delivery via SCoReS Phase 2 (Research) are now covered in SCoReS Phase 1 (Communication). This has been clarified and represented in Figure 3.

SCoReS Phase 2 (Research)

A review of the tutorials proposed in relation to "Draft Content Outline of Science Research Skills" was undertaken to identify content that will be covered in SCoReS Phase 1 (Communication) and content that will be delivered during SCoReS Phase 2 (Research). This content review is intended to clarify and formalise the division of content and focus for Phase 1 (Communication) and Phase 2 (Research).

Figure 3 shows this analysis of the "Draft Content Outline of Science Research Skills".

- Purple shaded boxes indicate content that is covered in SCoReS Phase 1.
- White boxes indicate content to be covered in SCoReS phase 2.
- Yellow box indicates suggested new tutorial.
Figure 2: Proposed SCoReS structure post-workshop
Figure 3: Clarification of content to be delivered in SCoReS Phase 2 (Research)

**Content Matrix**

The following tables provide an overview of the content required for each tutorial:

- The 'Outcomes' column shows the learning focus for each tutorial.
- The 'Content Overview' provides an outline of the topics to be covered.
- The 'Suggested Learning Strategies (Interactive Activities)' column provides suggestions for interactive activities based on screen templates developed for the CARS project.
- The 'CARS/POSLL' column outlines existing/in development resources relating to the tutorial.

Suggestions have been included using comments. Please respond to these suggestions when providing feedback.

The learning activities that are suggested are designed to allow students to consolidate their understanding of concepts presented. They have been included as suggestions, to provide learners with immediate feedback, and can be developed without the need for a database. Templates for interactive activities suggested are included in the tutorial screen templates currently being developed for the UWA CARS project.

As a database (Learning Management System) is not always employed to support the tutorials (some will be delivered via the website), learner’s responses to activities cannot be saved and will be lost at the end of their session unless completed in a word document.

Content that has previously formed part of the "Draft Content Outline of Science Research Skills" has been highlighted.

**Module 1. Prepare to write**

<table>
<thead>
<tr>
<th>Tutorial</th>
<th>Outcomes (By the end of this tutorial, the student)</th>
<th>Content Overview</th>
<th>Suggested Learning Strategies (Interactive)</th>
<th>Existing content CARS/ POSL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>should be able to:</strong></td>
<td><strong>Activities</strong></td>
<td></td>
<td></td>
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<tr>
<td>------------------------</td>
<td>---------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Scientific writing style</td>
<td>1. The basic principles or aims of scientific writing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Articulate the basic principles or aims of scientific writing.</td>
<td>2. How scientific writing differs from other forms of academic writing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Understand how to write clearly, precisely and briefly.</td>
<td>3. Scientific writing conventions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Use scientific (discipline) specific terminology.</strong></td>
<td>4. Writing precisely, clearly and briefly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Format scientific writing using standard conventions.</td>
<td>5. Scientific terminology e.g. data = plural</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>6. Formatting conventions of scientific writing.</td>
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</tr>
</tbody>
</table>

**Suggested supporting resources:**
- Checklist or self-evaluation (precise, clear & brief writing)
- Examples of scientific writing with critique.

**CARS: Structure your assignment**
- What are the common structural elements of academic writing?
- What are the different structures, e.g. a scientific paper, an essay, a case study, etc.?
- What are the key features?

**POSL: Communicating your research tutorial**
- Writing precisely
- Writing concisely
- Basic structure
- Paragraph and
2. Types of scientific writing

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2. Types of scientific writing</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand that different types of scientific writing exist, and have an overview of these.</td>
</tr>
<tr>
<td></td>
<td>• Understand that there are different audiences for scientific writing.</td>
</tr>
<tr>
<td></td>
<td>• Articulate how the intended audience will influence writing style and presentation.</td>
</tr>
<tr>
<td>1.</td>
<td>1. What types of scientific writing exist?</td>
</tr>
<tr>
<td>2.</td>
<td>2. Audiences for scientific writing?</td>
</tr>
<tr>
<td>3.</td>
<td>3. How audience and purpose influence writing style and presentation.</td>
</tr>
<tr>
<td></td>
<td>Suggested supporting resources:</td>
</tr>
<tr>
<td></td>
<td>• Quick guide - types of academic writing and their defining qualities in table form.</td>
</tr>
<tr>
<td></td>
<td>• Frameworks for different types of academic writing.</td>
</tr>
<tr>
<td></td>
<td>Learners are provided with information about a range of scientific writing types. Key aspects of each type are presented. Information about audience and purpose are highlighted.</td>
</tr>
<tr>
<td></td>
<td>Click and drag - Learners drag different examples (small images, excerpts or titles) of scientific writing into the appropriate category (type of writing).</td>
</tr>
</tbody>
</table>

Comment [CF2]: Can see this working well
### 3. Structuring an Argument

- Understand the nature and purpose of scientific argument.
- Identify a statement of belief.
- Understand how to structure a scientific argument.
- Understand how evidence is used to support a scientific argument.

<table>
<thead>
<tr>
<th>Examples/Case Studies</th>
<th>Suggested Supporting Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is a scientific argument? What is its purpose.</td>
<td></td>
</tr>
<tr>
<td>2. The big idea (statement of belief or guiding statement).</td>
<td></td>
</tr>
<tr>
<td>3. How a scientific argument is structured.</td>
<td></td>
</tr>
<tr>
<td>4. How is evidence used to support a scientific argument?</td>
<td></td>
</tr>
</tbody>
</table>

**Interactive diagram showing how an argument is structured.**

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### CARS: Build your argument
- What is an argument?
- What is ‘voice’?
- How do I acknowledge evidence in text?

### CARS: Decide what sources you need
- What is scholarly information?
- What are sources?
- What sources and formats of information are available? E.g. a journal articles, reference materials, Text books,
### 4. Collecting scientific evidence

| 1. Locate scientific evidence using a range of methods. |
| 2. Use search engines to find information. |
| 3. Record and manage information. |
| 4. Use established referencing conventions. |

#### Interactive diagram:
- Illustrating the evidence gathering process.

#### Multiple choice quiz:
- Students are provided with short scenarios and select the most appropriate evidence from the options provided.

#### CARS: Use evidence in your assignment
- What are the different purposes of different types of evidence?

#### CARS: Find information online
- What is a search strategy?
- How can I find the...
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Read scientific evidence</td>
<td>CARS: Reference your sources</td>
<td></td>
</tr>
</tbody>
</table>

- Scientific evidence quick guide (a table showing types of evidence and where they can be found).
- Case studies or interviews illustrating how students located and managed information for their scientific research.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Read scientific evidence</td>
<td>CARS: Reference your sources</td>
<td></td>
</tr>
</tbody>
</table>

- Do I need to look for more information?

**CARS: Reference your sources**
- Four reasons to reference: for UWA, for You, for the Author, for the Reader (from Study Smarter)
- What is your appropriate reference style (link to LibGuides).

**POSL: Managing information tutorial**
- 5. Evaluating scientific
- 6. Why evaluate evidence?

- Click and drag: Students select the most appropriate
<table>
<thead>
<tr>
<th>evidence.</th>
<th>critically.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Use established criteria to evaluate evidence.</td>
<td></td>
</tr>
<tr>
<td>- Decide if the evidence they have selected will support their argument.</td>
<td></td>
</tr>
</tbody>
</table>

7. What makes good evidence?
8. How is evidence evaluated (criteria for evaluation)?
10. How to determine if evidence selected supports an argument.

Suggested supporting resources:
- Evidence evaluation checklist.
- Evaluation hints and tips.
- Interviews with students &/or lecturers.

| types of evidence to support an argument from a range of options provided. The drag each piece of supporting evidence into the 'argument' category. |

with a critical eye
- Reading with purpose.
- Analysing main ideas and concepts (critical analysis).
- Note taking and note making skills.
- Record details of sources for future reference.
- Determine if the evidence fits your needs.
- Be aware of bias
## Module 2 - Write scientifically

<table>
<thead>
<tr>
<th>Tutorial</th>
<th>Outcomes (By the end of this tutorial, the student should be able to):</th>
<th>Content Overview</th>
<th>Suggested Learning Strategies (Interactive Activities)</th>
<th>Existing content CARS/ POSL CARS/POSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Essays</td>
<td>• Deconstruct an essay question.</td>
<td>1. What is an essay and when is it used?</td>
<td>Activity on selecting/structuring evidence to support an argument.</td>
<td>CARS: Analyse the question In this module the idea of an assignment question is introduce, and</td>
</tr>
<tr>
<td></td>
<td>• Understand essay structure.</td>
<td>2. How to deconstruct an essay question.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identify the key structural elements</td>
<td>3. Essay structure and key elements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Writing to a topic.</td>
<td></td>
<td></td>
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<tr>
<td>of an essay.</td>
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</tr>
<tr>
<td>• Write to a topic.</td>
<td></td>
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</tr>
<tr>
<td>• Support an argument with evidence.</td>
<td></td>
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</tr>
<tr>
<td>5. Support an argument with evidence.</td>
<td></td>
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</tr>
</tbody>
</table>

Suggested supporting resources:
- Sample essays.
- Hints and tips.
- Quick reference guide (style, structure).
- Frameworks.
- Evaluation checklist

---

this is used as an example throughout the modules.
- Reading the question.
- Key parts/structure of a question.
- Understanding terminology, including directional and instructional words.
- Identifying key concepts.
### 7. Exam writing

- Read and deconstruct an essay questions.
- Plan an exam response and manage their time.
- Structure an exam response.
- Check and self-evaluate their response.

<table>
<thead>
<tr>
<th>1. Reading and deconstructing the exam question.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Planning you time (breaking down your response).</td>
</tr>
<tr>
<td>3. Structuring your response.</td>
</tr>
<tr>
<td>4. Working within time</td>
</tr>
<tr>
<td>5. Checking your response.</td>
</tr>
</tbody>
</table>

**Suggested supporting resources:**
- Sample exam responses.
- Hints and tips - what shouldn't you try to do in an exam response?
- Checklist / common errors.
- Dealing with worry and stress

**Multiple choice quiz using scenarios and covering:**
- Reading and deconstructing the exam question.
- The planning process.
- Time management.

Image with pop-ups. Students are asked to identify errors in an excerpt from a sample exam response.

### 8. Literature Review

- Understand the purpose of a literature review.

<table>
<thead>
<tr>
<th>1. What is a literature review?</th>
</tr>
</thead>
</table>

**USyd video ‘What is a Literature Review’.

**POSL:** Literature
literature review.
- Understand the structure of a literature review.
- Understand the content of a literature review.

2. how is it different from other types of academic writing? (rather than relevant literature supporting your argument, the literature itself becomes the topic.)
3. What is its purpose?
4. What is scientific literature? What does a literature review contain?
5. Writing the review - structure and presentation.
6. Evaluation criteria

Suggested supporting resources:
- Examples of scientific literature reviews.
- Evaluation checklist
- Case studies with science focus.

Image response multi-choice quiz. Students are presented with excerpts from scientific literature reviews. Using the evaluation criteria provided, they rate the literature review and receive instant feedback.

review tutorial
All aspects covered.
| 9. Lab reports | • Understand the function and purpose of a lab report.  
• Record data using a lab report.  
• Identify the key elements of a lab report.  
• Evaluate a lab report.  
• Present data in a lab report clearly, using standards and conventions.  
• Communicate results clearly. | 1. What is a lab report (purpose and function)?  
2. What makes a good lab report?  
3. Recording data in a lab report.  
4. Elements that should be in an effective lab report.  
5. Structuring a lab report.  
6. Presenting data in a lab report and communicating results. | Image with pop-ups: Students identify areas of a lab report that are not presented correctly. Hot spots are hidden and students receive feedback in a pop-up box if they can correctly identify and click on errors.  
Suggested supporting resources:  
• Evaluation guide  
• Hints on improving your lab report  
• Sample lab reports. |
| --- | --- | --- | --- |
| 10. Scientific articles | • Understand the audience for | 1. Basic format for a scientific article.  
2. The peer review | Interactive diagram exploring the publication and peer review process.  
**POSL:** Publishing research |
<table>
<thead>
<tr>
<th><strong>11. Research Projects</strong></th>
<th><strong>Components of a Scientific Report</strong></th>
<th><strong>Multiple Choice:</strong> Components of a Scientific Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Understand the purpose and structure of a scientific research process</td>
<td>1. What is a research project? 2. How is a research project structured? 3. What are the key components?</td>
<td>Time management case study with multiple choice response.</td>
</tr>
<tr>
<td>• Present data clearly in a scientific article.</td>
<td></td>
<td>Image with pop-ups: What is your thesis statement?</td>
</tr>
<tr>
<td>• Present data clearly in a scientific article.</td>
<td></td>
<td>CARS: Formulate your thesis statement</td>
</tr>
<tr>
<td>• Acknowledge sources using established referencing conventions.</td>
<td></td>
<td>• What is your thesis statement?</td>
</tr>
<tr>
<td>• Under the peer review process.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Understand the publication process.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Suggested supporting resources:

- Examples of scientific articles accompanied by a short interview with their author.
- Checklists and frameworks.

**tutorial**

• covers the peer review process.
<table>
<thead>
<tr>
<th>Project Components</th>
<th>Time Management</th>
<th>Error Identification</th>
<th>Writing for the Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify key components of a research project, their function and characteristics.</td>
<td>Develop a work-plan and manage their time.</td>
<td>Evaluate the research project and use feedback to improve their work.</td>
<td>Suggested supporting resources:</td>
</tr>
</tbody>
</table>

12. Writing for the public

- Understand the structure and function of consultancy reports,
  1. When is scientific writing written for the public?
  2. Types: consultancy

Identify errors in sample research project excerpts.

- Why develop a thesis statement?
- Structuring a thesis statement correctly.
- Example 'good' thesis statements.

**POSL: Writing your thesis tutorial**
<table>
<thead>
<tr>
<th>13. Grant Proposals</th>
<th>Understand the purpose</th>
<th>1. What is a grant</th>
<th>Interactive diagram</th>
<th>POSL:</th>
</tr>
</thead>
<tbody>
<tr>
<td>press releases, management plans, and educational materials.</td>
<td>reports, press releases, management plans, educational material.</td>
<td>audience and purpose.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Understand how audience influences writing and presentation style.</td>
<td>3. How audience influences structure and presentation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suggested supporting resources:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Examples of press releases, consultancy reports, management plans and educational materials annotated by the author showing how the audience was considered during the writing process and the effect of this on the work.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Checklists and frameworks.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. What is a grant

Interactive diagram
<table>
<thead>
<tr>
<th>Module 3 - Collaborate</th>
</tr>
</thead>
<tbody>
<tr>
<td>of a grant proposal</td>
</tr>
<tr>
<td>• Understand research ethics</td>
</tr>
<tr>
<td>• Understand the concept of professional integrity.</td>
</tr>
<tr>
<td>proposal?</td>
</tr>
<tr>
<td>2. Who is the audience for a grant proposal?</td>
</tr>
<tr>
<td>3. Components of a grant proposal.</td>
</tr>
<tr>
<td>4. Research ethics</td>
</tr>
<tr>
<td>5. Professional integrity.</td>
</tr>
<tr>
<td>Suggested supporting resources:</td>
</tr>
<tr>
<td>• Examples of grant proposals accompanied by a short interview with their author discussing topics like research ethics and professional ethics.</td>
</tr>
<tr>
<td>• Grant proposal evaluation checklists.</td>
</tr>
<tr>
<td>exploring the grant proposal process.</td>
</tr>
<tr>
<td>Multiple choice : research ethics.</td>
</tr>
<tr>
<td>Image with pop-ups: Students identify successful elements of a sample grant proposal (excerpt).</td>
</tr>
</tbody>
</table>
## Tutorial 14: Collaboration

**Outcomes (By the end of this tutorial, the student should be able to):**

- Understand the advantages of collaboration
- Have an overview of collaboration within the scientific community (local - global).
- Articulate science as a dynamic process of collaboration and change.
- Identify ways to collaborate.
- Demonstrate an understanding of professional integrity

**Content Overview:**

- What are the advantages of collaboration?
- Science as a dynamic process of collaboration and change (ways the scientific community collaborates).
- The elements of professional integrity.
- Intellectual property and acknowledgements.

**Suggested Supporting Resources:**

- Intellectual property checklist.
- Interviews - professional integrity.

**Suggested Learning Strategies (Interactive Activities):**

- Interactive diagram showing an overview of collaboration within the scientific community.
- Click and drag: Identify ways to collaborate. Student's select suggestions provided and drag them to a target called "collaborate".

**Existing Content:CARS/POSL**

Comment [DP3]: New

Comment [DP4]: New
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
</table>
| **15. Diversity in groups** | - Understand the concept of diversity  
- Explore personality types and learning styles. Understand how these impact on group dynamics.  
- Understand cultural differences. | 1. How diversity benefits group work.  
2. Learning styles.  
3. Cultural diversity.  
4. Personality profiles.  
5. Group dynamics - using diversity to your advantage.  

Suggested supporting resources:  
- Learning styles profiling tool  
- Personality type profiling tool/s.  
- Group work planning tool. | Multiple choice quiz - diversity.  
Students complete a group work planning tool and use selected learning style and personality profiling tools to identify and work with diversity.  

**Understand different personal approaches**  
- Summary of perspectives identified in the diagnostic tool in the Activity (e.g. DISC, LSI (Leadership Styles Inventory)). |

| **16. Achieving group goals** | - Define group goals  
- Manage time and resources  
- Monitor goals and | 1. Setting group goals and success indicators.  
2. Managing Time and Resources  
3. Monitoring goals.  
4. Working through | Students complete a planning table which lists goals, timeline, success indicators.  
This could be included as a proforma or check  

**Anticipate and resolve problems**  
- Common issues in group work and strategies |
| 17. Communicating with your group | • Understand the importance of communication during a group work project.  
• Understand the skills involved in active listening.  
• Describe the concept of emotional intelligence. | 1. The importance of communication.  
2. Setting up a group communication strategy.  
3. Ways to communicate (meetings, email, telephone, group blogs/wiki’s)  
4. Active listening.  
5. Negotiation techniques.  
6. Recording and monitoring | Students develop a communication strategy for their project using a planning tool (word document). | Interact with the team  
• Deciding how you will communicate as a group.  
• Recognising how different communication styles look in practice.  
• Respecting to address them.  
• Ensuring outcomes are met. |
<table>
<thead>
<tr>
<th>Activity</th>
<th>Suggested Supporting Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct an effective meeting</td>
<td></td>
</tr>
<tr>
<td>Use negotiation techniques during a meeting</td>
<td></td>
</tr>
<tr>
<td>Consensus or dispute (minutes, email, blog.)</td>
<td></td>
</tr>
<tr>
<td>Communication strategy planning tool (word document).</td>
<td></td>
</tr>
<tr>
<td>Emotional intelligence self-evaluation tool (word document).</td>
<td></td>
</tr>
<tr>
<td>Negotiation skills quick guide.</td>
<td></td>
</tr>
<tr>
<td>Meeting agenda and minutes (examples and templates).</td>
<td></td>
</tr>
<tr>
<td>Case studies (different communication strategies and how they were employed).</td>
<td></td>
</tr>
<tr>
<td>Other's roles and abilities e.g. a table of attributes offering 3 different perspectives of the same attribute, I (positive), You (in-between), She (negative).</td>
<td></td>
</tr>
<tr>
<td>List of strategies.</td>
<td></td>
</tr>
</tbody>
</table>

**18. Evaluating group work**

| Evaluate your | 1. Importance of evaluation. | Students evaluate their project using an evaluation tool. | Use feedback to improve group. |
| 19. Developing Leadership skills | • Understand the concept of leadership and the role of the leader.  
   • Understand different leadership styles. | 1. What is leadership?  
   2. The qualities of leaders.  
   3. The role of a leader/ different types of leadership.  
   4. Leadership styles. | Students complete a self-evaluation tool and reflect on their leadership style and goals. | work  
   • How to evaluate your group’s performance.  
   • Getting feedback from the team (learning from the experience).  
   • Using feedback (verbal and written) to improve future group work. |

|  | 2. How to evaluate a project.  
   3. Using project success indicators to evaluate a project.  
   4. Working with feedback.  
   5. Documenting the evaluation. | | | |

Suggested supporting resources:  
- Evaluation tool.  
- Interviews (audio).
Module 4 – Deliver your presentation

<table>
<thead>
<tr>
<th>Tutorial</th>
<th>Outcomes (By the end of this tutorial, the student should be able to):</th>
<th>Content Overview</th>
<th>Suggested Learning Strategies (Interactive Activities)</th>
<th>Existing content CARS/ POSL</th>
</tr>
</thead>
</table>
| 20. Targeting your audience | • Consider the audience when developing a presentation.  
• Understand how the characteristics of the audience will influence delivery style and | 1. How to understand the characteristics of an audience.  
2. How to tailor your presentation to meet the needs of your audience (strategies).  
3. Planning a presentation (delivery methods, | Students watch short videos and determine if the delivery strategies used aligned with the audience and purpose of the presentation. | Set the scene for your presentation  
• What is the purpose of my presentation?  
• What type of presentation am I giving e.g. scientific?  
• What is my message? |
<table>
<thead>
<tr>
<th>Presentation</th>
<th>Resources Needed</th>
<th>What Are the Logistics of My Presentation, E.G. the Location, the Audience, Size of Room, Facilities, Etc.</th>
<th>How Will My Presentation Be Assessed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Apply a range of delivery strategies to different audience profiles.</td>
<td>• Planning your time (resources needed).</td>
<td>• Meeting the needs of the audience (anticipating questions, clarity). Safety - ensuring audience safety. Suggested supporting resources:</td>
<td>• What are the logistics of my presentation, e.g. the location, the audience, size of room, facilities, etc.</td>
</tr>
</tbody>
</table>

Suggested supporting resources:

- Quick reference tool - delivery strategies for different audiences with short videos to illustrate.
- Evaluation tool - meeting the needs of the audience.
- Video or audio examples presented as case studies showing audience and purpose and followed by example.

• What are the logistics of my presentation, e.g. the location, the audience, size of room, facilities, etc.
• How will my presentation be assessed?
<table>
<thead>
<tr>
<th>21. Structuring a presentation</th>
<th>22. Preparing visual aids</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Understand different presentation types.</td>
<td>• Understand how visual aids are used to support a presentation.</td>
</tr>
<tr>
<td>• Understand the structure of a presentation.</td>
<td>• Customise visual aids to meet the needs of the audience.</td>
</tr>
<tr>
<td>• Apply different presentation structures.</td>
<td></td>
</tr>
<tr>
<td>• Develop a presentation outline.</td>
<td></td>
</tr>
<tr>
<td>• Know how and when to present their own data.</td>
<td>1. Why use visual aids?</td>
</tr>
<tr>
<td></td>
<td>2. What types of visual aids are used in a presentation.</td>
</tr>
<tr>
<td></td>
<td>3. When should I use visual aids.</td>
</tr>
<tr>
<td></td>
<td>Click and drag: Match the visual aid to the audience.</td>
</tr>
<tr>
<td></td>
<td>Image with pop-ups or image multi-choice: Identify well structured and presented visual aids.</td>
</tr>
<tr>
<td><strong>Suggested supporting resources:</strong></td>
<td><strong>Interactive diagram illustrating presentation structure.</strong></td>
</tr>
<tr>
<td>• Presentation structure checklist.</td>
<td>Activity, select a presentation structure and complete a presentation outline.</td>
</tr>
<tr>
<td>• Presentation structures quick guide.</td>
<td></td>
</tr>
<tr>
<td>• Presentation outline examples.</td>
<td></td>
</tr>
<tr>
<td><strong>Interactive diagram illustrating presentation structure.</strong> Activity, select a presentation structure and complete a presentation outline.</td>
<td><strong>Develop the structure of your presentation</strong></td>
</tr>
<tr>
<td><strong>Design your support materials</strong></td>
<td>• Planning your presentation.</td>
</tr>
<tr>
<td>• Different types of support materials, e.g. PowerPoint, handout, none, visual aid, prop, poster,</td>
<td></td>
</tr>
<tr>
<td><strong>Develop the structure of your presentation</strong></td>
<td>• Timing.</td>
</tr>
<tr>
<td>• Storytelling.</td>
<td></td>
</tr>
<tr>
<td>• Sequencing.</td>
<td></td>
</tr>
</tbody>
</table>
| 23. Delivering presentations | Set up a presentation space.  
- Understand presentation techniques.  
- Understand the | Set up the presentation space (setting up the room).  
- Setting up a safe presentation space for demonstrations.  
- Presentation | Students watch a range of presentations and develop a critique. Sample answers are provided so that they can check their response.  
Reflect on and improve your presentation skills.  
Presentation skills checklist for:  
- VOICE (pace, volume variety) | | etc.  
- Is PowerPoint necessary?  
- Give links to examples of posters, etc. |

5. How do I customise visual aids to meet the needs of the audience.  
6. What visual aids should I use to present my data?  

Suggested supporting resources:  
- Visual aid quick reference (type of visual aid, example, characteristics, ways to customise).  
- Customising visual aids to suit audience needs (accessibility, clarity).  

Activity: Describe how example visual aids could be customised to meet the needs of the audience.
### Elements of a Successful Presentation

- **Techniques (Tone of voice, delivery, audience interaction):**
- Elements of a successful presentation.

Suggested supporting resources:
- Videos showing different presentation techniques.
- Guide/checklist for setting up a presentation space.
- OSH checklist.

### Debating and Panel Discussions

**24. Understanding the Purpose and Function of a Debate and Panel Discussion**

- **1. What is a debate (purpose, function)?**
- **2. What is a panel discussion (purpose, function)?**
- **3. Structuring your response.**

**Plan for Questions**

- How to plan for questions.
- Allowing time for questions.
- Techniques for responding to questions.

**Multi-choice: Scenarios (transcripts or video) are provided and students select the correct or most appropriate response from options provided.**

**Students look at an interactive image and complete an OSH checklist/hazard evaluation.**

- **STANCE** (gestures, moving around, engaging)
- **EYE CONTACT** (being inclusive, engaging)
- **PRESENCE** (showing confidence)
- **USE OF MICROPHONES**
- Differentiate between a 'conversational voice' and a 'written/presentation voice'.

---

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ABN: 13490562095

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### Module 5 - Beyond your degree

<table>
<thead>
<tr>
<th>Tutorial</th>
<th>Outcomes (By the end of this tutorial, the student should be able to):</th>
<th>Content Overview</th>
<th>Learning Strategies (Activities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Global citizenship and</td>
<td>• Understand the concept of global</td>
<td>1. What is global citizenship in relation to the 'workplace'?</td>
<td>Interactive diagram illustrating global citizenship.</td>
</tr>
<tr>
<td>adapting to change</td>
<td>citizenship</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Understand the concept of change.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Use strategies to adapt to change.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What is change?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. How can you adapt to change, what strategies are available?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Career planning in relation to global citizenship and change.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Suggested supporting resources:
• Strategies for adapting to change.
• Career planning tool (word document)

26. Evaluating your skills

|  | Review their skills. |
|  | Keep accurate and ongoing records of their activities and achievements. |
|  | Develop a professional portfolio |
| 1. Reviewing your skills |
| 2. Keeping records of achievements and processes. |
| 3. Evaluating your skills |
| 4. Making the most of opportunities. |
| 5. How to develop a portfolio. |

Suggested supporting resources:
• Skill evaluation tool (word document)
• Interviews with students/people in the workplace talking about how they evaluated their skills.
• Portfolio template or guide.

27. Applying for a job

|  | Understand the elements of a job application |
|  | Develop a curriculum |
| 1. Elements of a job application. |
| 2. Creating a CV/resume and how they differ |
| 3. Responding to selection criteria (what are they, purpose, structure, frameworks). |

Interactive diagram: Selection criteria response structure.

Activity: Develop a CV using the template provided.

Self-reflection tool. Students complete a self-reflection tool (word document) exploring how well they adapt to change.

Students complete an structured skill evaluation process (word)

Collaborative activity: Students ask a colleague to evaluate their skills and compare this evaluation with their own.

Students develop a portfolio.
| **28. The job interview** | • Plan for a job interview.  
• Understand the types of job interviews and their structure.  
• Understand the importance of presentation and communication.  
• Respond appropriately to | 1. Planning for an interview.  
2. Types of interview (informal, panel, etc.)  
3. Presentation, etiquette and communication.  
4. How to respond to interview questions  
5. Seeking feedback and using feedback to improve interview technique. | Suggested supporting resources:  
• Video examples.  
• Hints and tips  
• Interview planning template | Using scenarios provided, students select a suitable response or interview plan. |

|  | vitae (CV)/resume  
• Respond to selection criteria using established frameworks.  
• Use feedback to improve their professional portfolio. | 4. Using referees (etiquette and conduct).  
5. Getting feedback and improving your portfolio (communication, etiquette, improvement processes). | Suggested supporting resources:  
• CV Template  
• Response to selection criteria quick guide. | Multiple choice: Select the best response to selection criteria. |
| **29. Developing a career plan** | **Suggested supporting resources:**
- Understand the importance of a career plan.
- Develop career goals.
- Develop a career plan.
- Identify opportunities for career development. | **Students complete a career planning tool (word document).**
- What is a career plan?
- Developing career goals.
- Planning for the future.
- Adapting to change and actively identifying opportunities for career development. |
# Client Acceptance

<table>
<thead>
<tr>
<th>Client:</th>
<th>The University of Western Australia (SCORES Team)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention:</td>
<td>Claire Foster. Joanne Castelli</td>
</tr>
<tr>
<td>Date of Issue*:</td>
<td>Monday 6th June 2011</td>
</tr>
<tr>
<td>Document Reference:</td>
<td>SCORES_Project_Spec_UWA_V1_Final</td>
</tr>
<tr>
<td>Document Status</td>
<td>Final</td>
</tr>
</tbody>
</table>

## Unconditional Acceptance of the Content Matrix

I accept that this document (SCORES_Project_Spec_UWA_V1_Final) is finalised and has been delivered in line with the quotation provided by Lantern Learning Design (ref: SLS_M1_M2, Milestone 2: Task and Outcomes Development Workshop and Matrix). The milestone is now complete and no further changes to this document will be required.

Upon payment of the invoice provided by Lantern Learning Design for Milestone 2, full copyright ownership of this document will be transferred to the University of Western Australia.

Signed:  
On behalf of: The UWA SCoReS Project Team  
Dated:  

---

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ABN: 13 4 9 0 5 6 2 0 9 5  
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B41
University Assessment Practices at Level 1: Exploring Student Perceptions of Fairness, Transparency and Authenticity

Project Coordinator:

Assoc Prof Peter Whipp
School of Sport Science, Exercise and Health
Associate Dean (Teaching & Learning), Faculty of Life and Physical Sciences

This research was funded by a grant from The University of Western Australia Teaching & Learning Development Fund (2010)
INTRODUCTION AND BACKGROUND

Evaluation practices have been shown to influence student attitudes and learning (Struyven, 2005). For example, students have more positive attitudes towards multiple-choice tests on the grounds that they are easier to prepare for, easier to take, and may produce higher relative scores (Traub & McRury, 1990). Similarly, students’ approaches to study influence the ways in which they perceive evaluation and assessment (Struyven, 2005). Students with good learning skills who have high confidence in their academic ability tend to prefer essay-based assessment rather than multiple-choice assessments (Birenbaum & Feldman, 1998). In short, students’ perceptions of their learning environment are crucial in determining how they learn (Entwistle, 1991).

Carless (2009) discussed the importance of assessment in stimulating a productive learning environment that facilitates effective student learning. The present study aims to provide further understanding of undergraduate students’ perceptions about different assessment modes. Specifically, their perceptions about three concepts: fairness, transparency and authenticity, in written exams/tests, group projects, and individual assignments. In this respect, this study aims to capture students’ beliefs about the primary modes of assessment used at Level 1.

For the purpose of this study, fairness is defined as an assessment that rewards consistent effort and learning. Fairness comprises beliefs about the extent to which students perceive that they are able to demonstrate their capacity in terms of ability, knowledge and understanding. Fairness also encompasses whether the students feel the assessment reflects the teaching with which they are provided. Typically, alternative forms of assessment such as portfolios, self or peer assessment, and presentations have been perceived as fair as they reward consistent effort, rather than last minute effort (Sambell, McDowell, & Brown, 1997).

Transparency relates to assessment methods with clear expectations and criteria that facilitate the achievement of all desirable student assessment requirements (Drew, 2001). It has also been shown that transparency is facilitated by using ‘assessment criteria sheets’
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that assist students to understand the nature and scope of the assessment as well as how it will be marked (Waldrip, Fisher, & Dorman, 2009).

Authentic assessments simulate a real life situation, and measure skills and competencies valuable in real life or professional contexts (not just for the purposes of an isolated assessment). If an assessment task is perceived as arbitrary and irrelevant, there is a tendency for a students’ study to be aimed at learning knowledge only for the assessment with no intention of maintaining knowledge in the long-term (Struyven et al., 2005). Therefore, in an effort to promote learning applicable in many contexts, the challenge for educators is to create assessments that simulate a real life situation whereby the student can clearly perceive the relevance of their academic work to a broader situation outside academia (Sambell et al., 1997).

Further understanding of these three concepts will help to provide teaching staff with an insight to the congruence (or lack of) between existing assessment methods and students’ ideal assessment methods. Exploring students’ perceptions on these concepts will also help staff to recognise perceived strengths and weaknesses of various commonly-used assessment modes. The specific aims of this study were:

- To measure students’ perception of fairness, transparency, and authenticity across different modes of assessment.
- To identify aspects of different assessment modes that students liked, disliked, and/or would like to change.
METHODS

Participants
The sample (N=187) comprised Level 1 undergraduate students from the Faculty of Life and Physical Sciences at The University of Western Australia (four different Schools were represented), who were enrolled in their second semester, 2010. The sample comprised 75 males and 112 females, and the sampling rationale was to recruit students who would have recently been exposed to a range of assessment methods within their first year of university study.

Measures
Demographic data including gender, degree programme, course unit, type of assessment and assessment mark were recorded. A two-part questionnaire was then completed by students for each assessment mode (i.e., written exams and tests, group projects, and individual assignments). Part 1 was a series of scale response items. Students used a 7-point Likert scale ranging from 1 (Not at all) to 7 (To a great extent) to rate questions on fairness, transparency, and authenticity. Example items included, “To what extent did this assessment reward your effort throughout the semester?” (fairness), “To what extent did you know what you had to do to get a good grade?” (transparency), and “To what extent was your assessment relevant to broader situations outside of the university setting?” (authenticity). Part 2 of the survey used open-ended qualitative questions that asked students to describe what they (a) liked, (b) disliked, and (c) would change about the assessment.

Procedures
At the beginning of a lecture, students were briefed about the questionnaire and its purpose. Students were informed that the surveys were anonymous and confidential, and that no identifying information would be collected. The authors in this project did not have any current teaching or assessment responsibilities for the student groups sampled. After obtaining informed consent from students, questionnaire completion took place over a period of approximately 10 minutes. Students were instructed to complete only the sections of the questionnaire that were relevant to them. For instance, if they had not
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completed a group-based assignment during their time at university, they were instructed not to complete the section on group-based work. Ethical approval for the study was obtained prior to the commencement of data collection (Approval RA/4/1/4460).

Data analysis

- Statistical analyses were carried out using SPSS version 19.
- Descriptive data are expressed as mean ± SD for fairness, transparency and authenticity scores.
- Independent samples t-tests were undertaken to explore differences on student perceptions according to gender.
- A series of one-way MANOVAs were used to assess differences on fairness, transparency, and authenticity according to grade received for the assessment task (i.e., one MANOVA for each assessment modality).
- Paired sample t-tests were used to determine within-person differences on perceptions of fairness, transparency, and authenticity across assessment modalities.
- Qualitative comments about what students liked, disliked or would change about each assessment were categorised under fairness-, transparency- or authenticity-related themes.
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RESULTS

Quantitative Findings

Table 1. Mean scores and standard deviations for each concept, for the whole sample and separately according to gender

<table>
<thead>
<tr>
<th></th>
<th>Fairness</th>
<th>Authenticity</th>
<th>Transparency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole sample</td>
<td>4.79 ± 1.07</td>
<td>4.61 ± 0.97</td>
<td>4.90 ± 1.08</td>
</tr>
<tr>
<td>Male (n = 75)</td>
<td>4.85 ± 1.01</td>
<td>4.52 ± 0.83</td>
<td>4.81 ± 1.11</td>
</tr>
<tr>
<td>Female (n = 112)</td>
<td>4.76 ± 1.12</td>
<td>4.67 ± 1.05</td>
<td>4.79 ± 1.06</td>
</tr>
</tbody>
</table>

Across all assessment types, paired sample t-tests revealed that students rated fairness and authenticity significantly differently, \( t(184) = 2.67, p = 0.008 \), with the mean for fairness exceeding the mean score for authenticity. In addition, students rated their Level 1 assessments higher on transparency in comparison to authenticity, \( t(184) = 2.43, p = 0.016 \). Independent samples t-tests indicated that there were no significant differences on fairness, transparency, or authenticity according to gender.

Table 2. Mean scores and standard deviation for each concept according to assessment method

<table>
<thead>
<tr>
<th></th>
<th>Exams (n = 176)</th>
<th>Group (n = 73)</th>
<th>Individual (n = 141)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairness</td>
<td>4.96 ± 1.18</td>
<td>4.87 ± 1.28</td>
<td>4.65 ± 1.37</td>
</tr>
<tr>
<td>Transparency</td>
<td>5.12 ± 1.24</td>
<td>4.80 ± 1.33</td>
<td>4.45 ± 1.47</td>
</tr>
<tr>
<td>Authenticity</td>
<td>4.56 ± 1.11</td>
<td>4.67 ± 1.08</td>
<td>4.72 ± 1.26</td>
</tr>
</tbody>
</table>

Group means and standard deviations for each variable (fairness, transparency and authenticity) are summarised in Table 2. For fairness, paired sample t-tests showed that exams were perceived to be significantly fairer than individual assignments, \( t(130) = 4.21, p < .001 \). Exams were also significantly more transparent than groupwork, \( t(71) = 2.93, p = 0.005 \), and individual assignments, \( t(129) = 6.17, p < .001 \). However, no differences were found for students’ perceptions of authenticity across assessment types.
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The mean for each concept according to the students’ final grade are summarised in Figures 1, 2 and 3. Figure 1 provides a summary of how students’ perceptions about exams differed according to the grade they received. For exams, a significant multivariate effect, $F(12, 420) = 8.17, p < .001$, indicated differences on student perceptions according to grade received. Follow-up analyses indicated significant differences for fairness ($F(4, 161) = 20.04, p < .001$), transparency ($F(4, 161) = 13.28, p < .001$) and authenticity ($F(4, 161) = 10.89, p < .001$) according to the grade received. In comparison to those who failed the assessment task, students who obtained high distinctions reported higher perceptions of fairness (3.41 versus 5.58), transparency (4.10 versus 5.93), and authenticity (3.03 versus 4.87).

![Figure 1. Differences on student perceptions about exams according to grade received](image)

Figure 2 provides a summary of how students’ perceptions of groupwork differed according to the grade they received. For groupwork, a significant multivariate effect, $F(9, 124) = 2.24, p = .024$, again indicated differences on student perceptions according to grade received. However, follow-up analyses revealed that only transparency was significantly different ($F(3, 53) = 3.38, p = .02$) according to grade received. There were no students who failed groupwork assessment. Students who obtained a high distinction for groupwork scored reported higher perceptions of transparency than those who received a pass mark (5.43 as opposed to 3.42).

![Figure 2. Differences on student perceptions about groupwork according to grade received](image)
Figure 2. Differences on student perceptions about groupwork according to grade received

Figure 3 provides a summary of how students’ perceptions of individual assignments differed according to the grade they received. For individual assignments, a significant multivariate effect, $F(12, 320) = 7.13, p < .001$, again indicated differences on student perceptions according to grade received. Follow-up comparisons indicated significant differences for fairness ($F(4, 123) = 26.80, p < .001$), transparency ($F(4, 123) = 25.23, p < .001$) and authenticity ($F(4, 123) = 7.13, p = .001$) according to the grade received. In comparison to those who failed their individual assignment, students who obtained high distinctions reported higher perceptions of fairness (2.75 versus 4.66), transparency (2.67 versus 4.40), and authenticity (3.50 versus 5.16).
Qualitative Findings

Eighty-one percent of students (n = 151) provided qualitative feedback. This feedback was categorised into comments about each concept.

Fairness

Of the 151 students that responded, there were 132 comments pertaining to fairness (42% of all comments). Of these comments, 56% reflected positive comments, or things that students ‘liked’ about the assessment. For example:

- Good broad range of questions, rewarded people who used the textbook and lectures
- Able to demonstrate understanding
- Tested our skills, very challenging

The remaining 44% of comments reflected negative comments, or things that students ‘disliked’ about the assessment. For example:

- Exam had 12 questions to trick students, didn’t allow us to show enough of what we actually knew
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- Too much work for too little marks. Unfairly weighted assessment
- The hardness of marking. Went from 77% first sem to 46% second sem for same quality of work

Transparency

There were 71 comments pertaining to transparency (22% of all comments). Of these comments, 27% were associated with aspects of the assessment students ‘liked’. For example:

- Clearly set out, knew what to do for each section
- Questions clearly described what we were to write and calculate in our report
- Mock exam was very similar to final, so was easy to study for and prepare for it - knew what was required

The remaining 73% of comments were associated with aspects of the assessment students ‘disliked’. For example:

- Instructions about exactly what needed to be included were not clear
- Lecturer and tutor was not willing to help me with feedback/questions
- Guidelines weren’t very clear. Different information was being given by different sources (e.g. lecturers vs tutors)

Authenticity

There were 62 comments pertaining to authenticity (20% of all comments). Of these, 90% of comments were associated with aspects of the assessment students ‘liked’. For example:

- It aimed to give us practise in something we would need to do in the future, not only for psych but in some other units
- Reasonably relevant to wider world
- It applies to a greater context- careers after uni. Forced to learn about our field of work and learn a vital tool in preparing for when you’re seeking jobs
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The remaining 10% of comments were associated with aspects of the assessment students ‘disliked’. For example:
- Not applicable to real life/current situation
- Lack of relevance
- Writing out ‘code’ is tedious and a counterproductive way to learn (real world is never like that)

Other Themes

Beyond the three concepts, there were 52 comments about assessment format (16% of all comments). Of these, 65% were associated with aspects of the assessments that students ‘liked’. For example:
- Ability to adjust marks to reward individual group members who put in more effort
- The multiple choice format, as it is easy to study for and complete
- All multiple choice and there was always a chance of getting the answer right

The remaining 35% were associated with aspects of the assessments students ‘disliked’. For example:
- Hard to allocate tasks to each group member equally
- Was difficult to do in a group because if one part isn’t done, another part can’t be done, hard to divide workload, therefore very time consuming
- That it was all multiple choice, it didn’t use short answer questions or long answer

CONCLUSIONS

This project sought to contribute to a better understanding of the way in which students perceive fairness, transparency, and authenticity in different modes of assessment. In summary, findings provide support for the following propositions:

1. Gender did not influence student ratings of fairness, transparency and authenticity.
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2. Exams were perceived to be significantly fairer than individual assignments. They were also perceived to be significantly more transparent when compared to group work and individual assignments. The high rating of fairness for exams in this report may reflect an improvement on traditional ‘end-point’ exams. The exam format (e.g. the combination of multiple-choice and short answer questions) often used for Level 1 UG students may be perceived as a better opportunity to test knowledge. This may also be influenced by the Level 1 UG student having exams in combination with a number of other assessments (e.g. reports and quizzes) throughout the semester. The finding that exams were perceived to be more transparent than group work or assignments may be as a result of the students’ experience with each assessment mode and, simply, their understanding of what was expected from them. Alternatively, in comparison to exams, it is possible that groupwork and individual assessment tasks may be presented to students in a manner that does not explicitly identify expectations.

3. For exams and individual assignments, student perceptions about assessment appeared to be highly dependent upon the final grade they received for the assessment task. Students who obtained high distinctions perceive higher levels of fairness, transparency and authenticity than those who failed. With groupwork, similar results were found for ratings of transparency. It was not possible to determine in this study whether higher perceptions of fairness, transparency, and authenticity actually caused (i.e., preceded) improved final grades, or whether the receipt of a high grade lead students to retrospectively perceive the assessments as fair, transparent, and authentic. Future research that examines this issue would be worthwhile.

IMPLICATIONS FOR PRACTICE

In a general sense, these findings may provide some indication of what factors influence students’ perceptions of the primary modes of assessment used at Level 1. The findings for differing perceptions of assessment according to students’ grade classification is noteworthy. In particular, this suggests that students’ academic achievements may influence their perceptions of assessment, and lends support to the findings of Sambell
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and McDowell (1998), who found that students’ motivation and orientations to study influenced the ways in which they perceived and acted upon messages about assessment. These findings may have potential implications for student ratings of teaching excellence and unit reviews. Accordingly, stratifying students’ evaluations according to grade achieved may provide a more comprehensive understanding of their course and unit evaluations.

It seems unrealistic to expect teaching staff to present ‘ideal’ assessments for every student, given the unique learning styles and preferences held by each undergraduate (Winning, 2005). However, attempting to find patterns, tendencies, and relationships between students’ perceptions, the different assessment methods, and student learning, helps to provide an insight for teaching staff (Struyven, 2005).

**IMPROVING STUDENT PERCEPTIONS OF FAIRNESS, TRANSPARENCY AND AUTHENTICITY**

Perceptions of fairness could potentially be improved by using a variety of assessment modes to maximise students’ opportunities to demonstrate their learning. The allocation of marks for each assessment should reflect the time and effort required to competently achieve the learning outcomes specific to the assessment, rather than having a large proportion of marks allocated to what students may perceive to be redundant tasks such as referencing. In addition, groupwork should include ways to assess individual performances within the group (e.g. peer and self assessment) to better reward students who undertake a greater proportion of work.

To improve transparency, students need to have a clear understanding of the nature and scope of the knowledge required to successfully complete the assessment. Transparency can be facilitated by open communication between tutors, lecturers and students, so that students’ perceive they have some control over the assessment process. Transparency has also been show to be improved by providing students with clear assessment criteria, briefs, or marking rubrics.
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Authenticity is improved when students perceive the assessment as having application to situations beyond the immediate university assessment. For the educator, this requires them to determine what students and potential employers perceive to be the ‘real world’, and whether this is congruent to the learning outcomes and assessment.

Finally, the majority of students enjoy multiple-choice based assessments. However, a common criticism is that they do not allow the demonstration of higher-order understanding. Combining multiple choice based assessments together with short answer or essay questions would potentially serve to alleviate this issue.
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REFERENCES


