

## Engaging first year lecturers with threshold learning outcomes and concepts in their disciplines

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### Abstract

*In this paper, we report on an investigation of what students need to learn in the first year in various discipline-based subjects to launch them on their way to meet specified discipline threshold learning outcomes (TLOs) by the time they graduate. We frame our investigation using both the threshold concepts that the students must master in first year in order to succeed in learning in the discipline and also the threshold learning outcomes that they need to achieve by third year. We describe and analyse workshops used to engage lecturers with the challenges of designing first year curriculum in their discipline, suggest why threshold concepts are useful in focusing both lecturers and students on what is essential, and outline briefly some of the creative solutions the lecturers offered.*

### Introduction

This project grew out of the work of Associate Deans Learning and Teaching (ADLTs) in Arts, Social Sciences and Humanities. As ADLTs, we work with a wide variety of disciplines to review curricula and ensure that they meet required standards. Yet, while we oversee learning and teaching in many disciplines, each of us usually specialises in only one. We wanted to understand how different disciplines might be taught in first year so that students are intentionally set on their way to meet discipline threshold learning outcomes (TLOs) by the time they graduate. We asked, “What do students need to learn in their disciplines in first year in order to meet the TLOs in their final year?”

We operate in a world where we are increasingly required to set and implement standards. In Australia, the Australian Qualifications Framework (AQF, 2013) provides learning outcomes for the different levels of courses and constructs these in terms of what students are expected to know, understand and do as a result of learning at that level. The Tertiary Education Quality Agency (TEQSA) is charged with ensuring standards across the higher education sector in Australia (TEQSA, 2013). In 2011, the Australian Learning and Teaching Council sponsored work to define threshold discipline standards for various disciplines (Hay, 2012). It is also recognised that we cannot expect students to attain TLOs if we only focus on the final year: we are advised to embed good practices that develop the agreed TLOs of the discipline in an integrated and incremental way throughout the curriculum (Kift, 2012).

This paper reports on a project called “Renewing first year curriculum for social sciences and humanities in the context of discipline threshold standards,” funded by the Australian

Government Office of Learning and Teaching (OLT). The project has used discipline workshops to engage first year lecturers in considering the implications of threshold learning outcomes. TLOs have been developed in the Social Sciences and Humanities for the History, Sociology, Political Science and Geography disciplines (Hay, 2012). We identified the discipline of English as both central to every Arts curriculum and still lacking national TLOs. We added English to our list of focal disciplines with the intention of articulating our project with the nascent work on national TLOs initiated by the new peak body of tertiary English teachers, The Australian Universities Heads of English.

With students' learning in particular disciplines in mind, we identified the notion of threshold learning concepts, or "*concepts that bind a subject together, being fundamental to ways of thinking and practising in that discipline*" (Land, Cousin, Meyer, & Davies, 2005, p.54). Land et al (2005) claim that students who understand these threshold concepts are better able to integrate and apply their knowledge within a discipliner than those who do not, as the latter learn in a more fragmented way. These threshold concepts go hand-in-hand with the barriers to learning (bottlenecks) for students in the discipline (Cousin, 2006).

We thus saw that we needed to include in our workshops consideration, not only of the Threshold Learning *Outcomes* identified for particular disciplines, but also the Threshold Learning *Concepts* that students need to master as they begin to study a discipline at university. We had to look both forwards and backwards in the learning journey.

This paper first discusses the two notions of Threshold Learning Concepts and Threshold Learning Outcomes. It describes the approach used in the project and the workshops that were used to engage the lecturers. We then present a comparison of what was learnt in the three disciplines of History, Sociology and Politics. As workshops for English and Geography will not be held until June 2014, we do not discuss those disciplines in this paper.

### **Threshold concepts and overcoming barriers to learning**

Threshold concepts are the fundamental ways of thinking that are specific to a particular discipline and need to be mastered by students if they are to work effectively in that discipline (Land et al., 2005). Once lecturers determine what these threshold learning concepts are, they can help students to understand and practise ways of thinking in their discipline (Chick, Haynie & Gurung, 2009).

*If we want to develop an understanding of the pedagogy of the subject we teach, we have to start somewhere and making sense of what seems central and often difficult to grasp by most learners, is a good place to begin our inquiry. A tendency among academic teachers is to stuff their curriculum with content, burdening themselves with the task of transmitting vast amounts of knowledge bulk and their students of absorbing and reproducing this bulk. In contrast, a focus on threshold concepts enables teachers to make refined decisions about what is fundamental to a grasp of the subject they are teaching. (Cousin, 2006).*

The term signature pedagogies has been used to describe distinctive ways of teaching that help students develop their skills and thinking in a particular discipline (Shulman, 2005; Chick, Haynie & Gurung, 2009). A signature pedagogy can tell us important information about the values, knowledge and way of thinking of a discipline (Calder, 2006). Examples of signature pedagogies in the professions include the use of case studies in law, studios in architecture, clinical rounds and problem-based learning in medicine or case studies and projects in management (Shulman, 2005; Schmidt-Wilk, 2010). This raises the question about

what a signature pedagogy would be for the social sciences and humanities where the profession is ill-defined (Chick, et al., 2009).

Students can find a threshold concept problematic and thus find it hard to progress in the discipline. The method or knowledge may be tacit and lecturers might not make it explicit to students; or the specific disciplinary discourse may be difficult for the novice to comprehend and create a barrier to any further learning in the discipline (Land et al, 2005).

The Decoding the Disciplines Methodology (Middendorf & Pace, 2004; Diaz et al. 2007) uses a seven-step process that identifies the threshold concepts and barriers to students' learning, determines what an expert would do to apply those concepts and then works out how the lecturer can model the expert's methods and provide opportunities for students to practise those methods. The process asks us to think about how we can motivate students to participate in these methods and how we can evaluate whether the interventions are effective. The last stage of the process disseminates what has been learnt and shares it with others. This project used the first steps of the methodology in the workshops as a way of engaging participants with the ideas of threshold concepts and barriers (or bottlenecks) to students' learning in their discipline.

### **Threshold Learning Outcomes and the first year**

The discipline TLOs are those outcomes that we would expect a graduate to have developed through their three-year major in the discipline. The TLOs for History, Sociology and Political Science were developed as part of the Learning and Teaching Academic Standards (LTAS) project funded by the former Australian Learning and Teaching Council (ALTC) (Hay, 2012). They were developed by academics in consultation with the Australian Historical Association for History (Hay, 2010), The Australian Sociological Association (TASA) for Sociology (TASA, 2012) and the Australian Political Science Association for Political Science (APSA, 2011).

TEQSA will audit university courses to ensure that "assessment is effective and expected student learning outcomes are achieved" (TEQSA, 2013, p.16). Assessment can ensure compliance in meeting standards but in order for the students to achieve standards and meet TLOs by third year, they need to have developed their skills and abilities across all three years of the degree. One of the major recommendations of the project "After standards: engaging and embedding history's standards using international best practice to inform curriculum renewal" (Brawley, et al., 2013) was that disciplines need to embed standards throughout the curriculum as it is difficult to retrofit standards to existing courses/units.

### **Project aims and approach**

The main aim of the project was to determine the discipline-specific skills that first year students in selected disciplines in the social sciences and humanities need to develop in first year to achieve the TLOs by the time they graduate. Further aims were to engage first year lecturers with the ideas and provide a toolkit with discipline-specific resources that could be shared. As the project progressed, we realised that we also needed to address the idea of threshold concepts that students needed to learn and the barriers that first year students needed to overcome in order to be effective learners and practitioners in the discipline.

We used an action research approach, beginning with the History discipline as it had been studied in greater depth than other disciplines Brawley, et al., 2013). Student surveys and

focus groups were used to gather students' perceptions of their learning in first year history. This first cycle culminated in a workshop for first year history lecturers in June 2013. The second cycle of the action research project used the disciplines of Sociology and Political Science with workshops in November 2013. The paper focuses on these workshops and provides examples of what we learnt about first year practices from participants.

### **The workshops**

First Year lecturers from the seven universities participating in the project and from other universities attended the workshops. The figures are shown in Table 1.

	History	Sociology	Political Science
Number of participants	40	36	27
Number of universities represented	13	14	14

***Table 1: Workshop participation***

The workshop was divided into three parts: an introductory session; a session identifying the threshold concepts and barriers to learning in the discipline; and a session developing students' skills in first year so that they can achieve the TLOs by third year. We will discuss each of the sessions below and mention the type of information collected in each.

#### *Workshop Part One – Introduction*

The first part introduced the attendees to the project and invited them to introduce themselves to one another by discussing the most memorable moment from their first year experience of their discipline. There were some funny stories but the predominant memories in all the disciplines were about the passion and the expertise of the lecturers who taught them.

We then introduced the participants to the TLOs in their discipline and to the notions of compliance that go with those outcomes (History – Hay, 2010; Sociology – TASA, 2012; Political Science – APSA 2011). While the participants from the History discipline seemed to have engaged with the TLOs previously, many sociologists and political scientists had not, provoking a debate on the TLOs themselves and whether we need them.

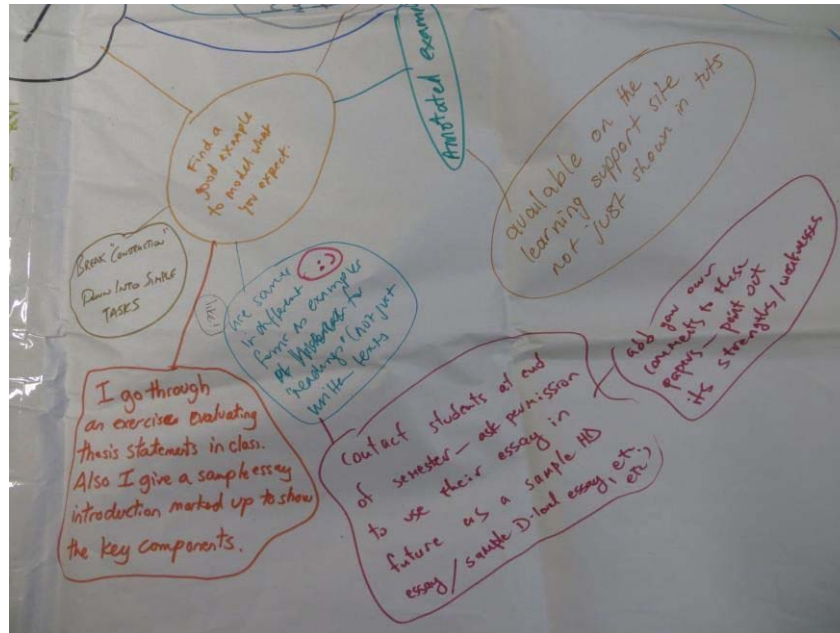
Participants were then given an insight into student responses to the surveys and focus groups that had been conducted prior to the workshop. While this yielded some interesting results, we will need to hold over discussion for a later paper.

#### *Workshop Part Two – Threshold concepts, barriers and first year pedagogy*

In the second part of the workshop, we asked the participants to consider first year pedagogy in the light of their discipline and to think about the barriers to learning experienced by their first year students. We stimulated the lecturers to consider how they might apply the first year pedagogy principles of transition, diversity, design, engagement, assessment, evaluation and monitoring in their discipline (Kift, 2009).

We used the first four steps of the Decoding the Disciplines methodology to help lecturers identify the barriers to learning for their discipline. In Step 1, we asked lecturers to write down on post-it notes what they felt were barriers to students learning in their discipline. We then asked them to put their notes under the most appropriate barriers that had been put up on

poster-size paper around the room. For the history discipline, we had a set of already well-defined barriers that had been developed by the University of Indiana (Diaz et al., 2007). For the other disciplines, we used ideas from the Signature Pedagogies series (Bernstein, 2012; Fujieda, 2012) refined by the expert members of our reference group. Most of the barriers that the lecturers had written fitted under the barriers developed. Those that did not tended to be generic barriers, like literacy and motivation.



**Figure 1: History TLO7 part of the conversation map**

Participants were then asked to take one issue and follow the decoding the disciplines steps to determine how an expert would work, how the task could be explicitly modelled and how students could practise the skills and get feedback.

### *Workshop Part Three – Skills and experiences in first year to prepare students to meet TLOs*

In the last part of the workshop, we used two activities to engage the participants. In the first activity, a conversation map (see Figure 1), each of the TLOs was placed in an ellipse in the centre of a large piece of poster paper. The participants were asked to add bubbles to the conversation map, identifying skills that first year students could develop that would help them eventually to achieve that TLO and suggesting activities or assessments that would help them to attain those skills. The lecturers had to read what others had written and then either add to the existing conversation by linking their idea to those already given by others or add a link to the central TLO bubble. Figure 1 shows a photograph of part of the conversation map for the history TLO 7: “Construct an evidence-based argument or narrative in audio, digital, oral, visual or written form.”

Finally, in a round table format, we asked the participants to share their ideas for activities and assessments that they felt developed one or more of the TLOs. This was the culminating activity and also, as the evaluations revealed, the one most valued of all..

## Workshop results

Because we cannot cover all the TLOs in this section, we will focus on the results from one particular TLO from each discipline. The chosen TLOs are all related to the issue of argument and the students' ability to develop and evaluate arguments, as this was a common outcome for all three disciplines. The specific TLOs for the three disciplines are:

- History TLO 7: Construct an evidence-based argument or narrative in audio, digital, oral, visual or written form.
- Political Science TLO 7: Demonstrate the capacity to develop evidence-based argument and evaluation.
- Sociology TLO 6: Demonstrate an ability to develop arguments by using evidence, evaluating competing explanations, and drawing conclusions.

### *History*

The Historians identified the ability to construct an argument and evaluate evidence as a significant barrier to learning for first year students. The team at Indiana (Diaz et al., 2007) had nominated the constructing and evaluation of arguments as a skill that students in history needed to learn. Participants expanded this by suggesting that students needed to learn to read critically and evaluate sources (both primary and secondary sources): they needed to understand the difference between arguing a point of view and bias. Lecturers felt that students needed to learn to articulate their arguments clearly and provide evidence to support their arguments. There were suggestions about how to help students learn to deconstruct the arguments of others and then to help them learn how to formulate their arguments in essays.

The conversation map for history prompted more ideas on how to develop the TLO, as partly shown in Figure 1. While some of the conversation map focused on the “audio, digital, oral, visual or written form” part of this TLO, most of it focused on the issue of developing students' ability to provide an evidence-based argument and provided insights into various ways in which we can do that in first year. Suggestions were: debates; online forums; giving students annotated examples; and teaching students to evaluate thesis statements and evidence.

Finally, the participants in the history workshop shared their ideas for activities and assessments that could help students to overcome their barriers to learning and develop their capabilities in relation to the TLOs for History. For the History TLO7 these included:

- A class debate with students asked to take opposing views of an historical event using researched evidence to support their argument;
- A role-play where students debate or argue by taking on different historical roles;
- Risk-free writing where students are introduced to writing by having them write, anonymously, part of a structured essay, for example, the introduction, and then evaluate one another's work in small groups;
- Asking students to put themselves into an historical role and then make decisions based on the historical evidence; and
- A mock trial that helps students to unpack some of the more nuanced aspects of an historical period.

## *Political Science*

The Political Science participants identified two barriers to learning that relate to the issue of argument in their discipline. They said that students need to learn to adopt an analytical approach to the study of political argument and understand that the academic study of politics cannot be equated to a partisan political argument or media commentary. Academic argument is not about what an individual believes or the students' or politicians' opinion and needs to go beyond bias and relativism. They also felt that students need to learn to evaluate arguments and the academic sources that provide the evidence for those arguments. They considered useful strategies to be the use of debates and the modelling of how a lecturer wrestles with an issue. They suggested asking students to identify the arguments in texts and then work through key questions in the texts, like 'where, what and why'?

The participants argued in the conversation map about what was appropriate to teach at the first year level. Some suggested that the best place to start was to analyse someone else's writing or to let the student compare two articles with competing conclusions and then assess the evidence of each of the writers. Others suggested that this may be inappropriate at the first year level and someone suggested looking at short extracts of writing instead. The idea of having the students write short structured paragraphs with the main point (thesis statement) and the evidence (properly referenced) was also mooted.

The last part of the workshop gave participants time to share their ideas for activities and assessment tasks in more detail. Ideas for the Political Science TLO7 "Demonstrate the capacity to develop evidence-based argument and evaluation" included:

- Ask the students to draft new institutional rules using comparative data. They must provide rationale for their modifications to the rules.
- Each student is a delegate to the Constitutional Convention of <year>. They must write a position paper and present their constitutional reform or say what in the constitution should remain unchanged. The lecturer presents a summary of the presentations, which is followed by debate and contributions by the students.
- Students are given a political argument and asked to find concrete evidence and research to determine how true and valid it is.

## *Sociology*

The Sociology participants identified a number of barriers related to students' ability to provide an academic argument. They said that students have difficulty stating an argument and often tend to rephrase the work of others, rather than discuss different sociologists' views. They felt that students needed to learn how to develop an argument without being confrontational. There was a belief that students need to learn the academic language of argument in sociology. Lecturers suggested using debates and explicitly modelling sociological arguments as methods of developing students' capabilities. One suggestion was that students be asked to argue the opposite view to the one that they believe. It was judged important to use real-life issues that mattered to first year students.

The conversation map for TLO6 in Sociology brought out various ideas and questions about how to develop a student's ability to build arguments by using evidence, evaluating competing explanations and drawing conclusions. Some of the ideas suggested were: using constructive controversies, with students arguing the different positions and providing

evidence; role-playing different stakeholders with different points of view; providing students with conflicting evidence and asking them to evaluate it; in-class debates; comparative studies; and asking students to argue the opposite perspective to the one that they currently believe. Participants discussed the need to challenge students on their personal opinions and to ensure that they obtain the skills to find evidence to support or refute an opinion. It was also suggested that students should understand that an argument is not always black and white and that they need to deal with uncertainty.

Sociology participants were then asked to share their ideas for activities and assessment tasks. Ideas for TLO6 “Demonstrate an ability to develop arguments” included:

- Lecturer chooses a popularly described event covered by news media and asks students to list individually all the facts about it – they then collectively discuss how those ‘facts’ came to be known, by whom and under what circumstance. They then explore how and if other facts could have been used to explain the event.
- Lecturer takes a controversial issue and asks students to place themselves in a line depending on where they stand on an issue. Half the students in the ‘agree’ side of the line develop their position using a sociological perspective and half of those who disagree do the same. The rest of the class votes which was the most persuasive. Students could also be asked if they want to change where they stood on the line.
- Students undertake a reading and then answer questions that help them to identify the theoretical standpoint informing the author’s argument and to pinpoint what constitutes evidence in the reading.

### Workshop evaluation

The workshops were evaluated by the participants. Evaluations from the quantitative data are shown in Table 1.

Workshop evaluation	Own contribution	Engaged	Stimulated Thinking	Provided Ideas	Intended Outcomes	Effective use of time
History (n=28)	4.64	4.50	4.57	4.54	4.43	4.43
Sociology (n=21)	4.62	4.33	4.52	4.52	4.24	4.30
Politics (n=15)	4.33	4.00	4.00	4.20	3.86	3.79

1= strongly disagree; 2= disagree; 3= neutral/unsure; 4=agree; 5= strongly agree

The workshops were generally well received, although some of the Politics participants were less positive than participants from the other two disciplines. Participants offered the following examples of what they would do as a result of the workshop:

- “Think more creatively about assessment” (History)
- “Take this back to my department to encourage new approaches” (History)
- “Think about how to overcome the bottlenecks – provide more scaffolding and modelling in my teaching” (History)
- “Incorporate ideas learnt today into my own teaching and consider standards in planning for subjects next year” (Sociology)
- “Do less things but spend more time on them” (Sociology)
- “Look to ground learning and assessment activities more in the TLOs – use some of the great ideas proposed/described.” (Politics)



- “Use a broader list of teaching techniques with the intention to get my students past the bottlenecks” (Politics)

When asked to suggest improvements to the workshops, participants generally wanted more time, especially for the sharing of ideas about teaching and learning in the discipline.

## Conclusions

We have suggested that designers of first year curriculum and pedagogy should consider both the threshold concepts and skills for that discipline and the TLOs that they want the students to achieve by the time that they graduate. Taught this way, the first year can help students develop the skills that they need to be effective learners and practitioners in their discipline. We have provided an outline of the one-day workshops that we used to engage first year lecturers and given examples of the results from the workshops. The workshops were used in part to answer the question “What do students need to learn in their disciplines in first year in order to meet the TLOs in their final year?” The results show that despite all three disciplines having a similar TLO -the ability to make a well-evidenced argument by third year -the methods for developing the necessary skills differed amongst disciplines. The lecturers were very innovative in using examples from their disciplines to develop the required skills.

Our initial findings show that a discipline-specific approach is effective in engaging first year lecturers with the concepts of first year pedagogy and the standards required in their discipline. With this approach, lecturers seem to connect more deeply with the pedagogy of their discipline than if they were participating in a general workshop on first-year curriculum principles.

We will undertake further research using the English and Geography disciplines in June 2014 in order eventually to compare the five disciplines and to provide resources for each of the disciplines on a project website.

The project has already resulted in curriculum renewal projects at a number of universities. Further research might investigate how effective the project has been at changing practice and whether those practices are proving effective in retaining students and engaging them with the different disciplines.

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## Acknowledgement

*Support for this project has been provided by the Australian Government Office for Learning and Teaching. The views expressed in this article do not necessarily reflect the view of the Australian Government Office for Learning and Teaching.*

