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Scholarly Peer Review aimed at Enhancing the First-Year Student Learning Experience

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Abstract

This paper presents an overview of a Peer Review Instrument developed as part of a larger project concerned with design of first-year curriculum. The instrument provides a mechanism for reviewing curriculum according to the criteria specified by the course outline or selected by the individual academic. The instrument is a useful tool to review the criteria according to emerging priorities of the particular university, and within the framework for enhancing the first-year experience.

Key words: *First Year Experience; Transition; Evaluation and Assessment; Peer Review.*

Introduction

The importance of student engagement has gained considerable attention in recent years in light of the growing evidence from various studies in Australia (McInnis 2001; Krause, Hartley, James & McInnis 2005; Kift 2003, 2008) and overseas (Kuh *et al* 2006; Tinto 2000, 2002; Yorke 2008) of the link between student engagement and retention. This research, combined with evidence of increasing student disengagement (McInnis 2001; Krause *et al*, 2005; Strahm & Danaher 2005), brings into sharp focus the need for an integrated and planned approach to enhancing the first-year experience (Krause *et al* 2005; Kuh *et al* 2006; Kift 2008).

Kift (2008) describes the need for a “transition pedagogy” that tailors the curriculum for first-year students. Many elements of a quality first-year curriculum are common to all courses. However, as Kift (2008) has outlined, there are also particular elements that are pivotal to the quality first-year curriculum. These elements include the following:

1. **Being relevant to and informing vocational aspirations early in the course**
This may include activities or examples that relate directly from foundation courses to students’ professional area, workplace visits and placements or specialist sessions from professionals in practice. Students need to be provided with “good reasons to stay beyond the first year” (Krause 2006), and curriculum links to their eventual profession are an effective means for making such reasons explicit to students.

2. **Assisting students’ transition from their previous experiences to studying at a tertiary level**
The increasing diversity of the student cohort means that many students have not followed the “traditional” pathway to tertiary education by completing the final year of secondary school. This variety in previous learning experiences needs to be taken into account in first-year courses. Students need to be given the opportunity to explore their own learning style and preferences to make best use of learning opportunities. Becker, Kehoe and Tennent (2007) found that the learning style of students (eg aural, kinesthetic), do not influence students’ preferences around flexible delivery. However, many students prefer that courses are not totally online (Mariani 2001).

Financial pressures on Universities have encouraged common courses and thus large classes, particularly in first-year courses. Students have reported feeling isolated from academic staff and other students in large classes (Herbert, Chalmers & Hannam 2003) while academic staff find it difficult to give adequate time or resources to individual students. As a result, the cohort tends to be considered homogenous with respect to background knowledge, motivations and abilities. If large classes are to be used, then appropriate strategies, such as those described above, need to be used to allow for the diversity of background and learning needs in the student body.

3. **Providing students with formative feedback early in their courses.**
Yorke and Thomas (2003) demonstrated improved retention and completion in first-year courses that had an emphasis on formative assessment, social aspects and participation. Falchikov (1996) reported several benefits experienced by students participating in a formative feedback approach that makes the criteria explicit to students, provides them with the opportunity to participate in a non-evaluative feedback session and enables them to reflect on their approach to the assignment. First-year students need to be provided with opportunities to receive formative feedback and to engage in formative peer review to help them establish the

standards and quality of work expected while they still have time to address any issues requiring attention. Alternative assessment and formative peer review approaches also facilitate the development of students' collaborative problem-solving and communication skills, while strengthening social connection.

4. **Facilitates quality and authentic learning experiences, encouraging students to take an active role in and responsibility for their own learning.**

There is considerable interest in the potential benefits of introducing research in the undergraduate curriculum and engaging students in research activities designed to foster active learning and problem-solving, as well as the generation of new knowledge. Bath (2008) stress the importance of research-based learning as it develops skills in critical thinking, communication and problem solving in addition to content delivery. While there are many challenges in integrating research in the undergraduate curriculum (Wood 2009; Scutter 2002), by engaging students in active learning and research “in the company of mature scholars and practitioners” (Ramaley (2005, p. 33) they are better able to define real world problems and collaborate in the process of addressing those problems (Colbeck & Michael 2006).

A growing body of literature addresses principles for the design of a curriculum that is engaging as well as supportive of the needs of transitioning students in their first year of university study. In addition to adhering to good curriculum principles applicable to all university courses, the curriculum provided to first year students needs to provide opportunities for students to transition from previous learning experiences to the higher education sector. For example, many students entering higher education will not previously have taken a course that is online or of a blended format and may need more staged exposure to this type of learning than more advanced students. Students are likely to need assistance making the transition to taking responsibility for their own learning.

Kift (2008) advocates a “top-down and bottom-up approach” to enhancing the first year experience; an approach that acknowledges the need for an institutional framework, as well as the articulation of criteria to guide the design of courses that are “engaging, supportive, intentional, relevant and social” (Star 2005 cited in Kift 2008). Such a “top-down, bottom-up approach” is consistent with the philosophy underpinning the design and development of an online instrument and associated website as part of an Australian Learning and Teaching Council project¹, which aims to support quality improvement of courses through peer review, professional development and reflective practice. The Boyer (1990) approach to scholarship, which is based on an understanding of the communal basis of all scholarly activity, is central to the design and development of this Peer Review Instrument (PRI). The instrument and associated Website provide a scaffold for academics developing course material and at the same time empowers academics to construct their own tailored evaluation checklists and to contribute to the developing database of criteria. Through this communal approach, the instrument and its associated website provide an opportunity for just-in-time academic staff development by providing the accepted standards, information about how to meet these and exemplars contributed by academics themselves. The project also addresses an identified need for an objective and accessible system that supports academics in the development

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or redevelopment of their own courses through reflective processes and enables them to use these same criteria to have their work evaluated. In exposing their work to scholarly appraisal and scrutiny, academics can also have their work affirmed and used as evidence when seeking promotion or recognition within their institution.

The attributes of a quality first-year curriculum have been described above, what remains is a way in which to develop and evaluate the curriculum to determine whether the desired elements are incorporated. This need led to the development of the peer review instrument described below.

The Peer Review Instrument

Development of the instrument built on the experience gained from the design and development of a prototype trialed at the University of South Australia (George, Wood & Wache 2004; George & Wood 2005, Wood & George 2003). The findings from the trials indicated that the proposed system would be well received when fully implemented as an open source instrument.

The notion of an engaged, networked community of academics contributing to a shared understanding of learning and teaching, while reflecting on their own teaching practices, underpinned the design and development of the peer review instrument. To facilitate and strengthen this learning community, Web 2.0 technologies were employed, enabling academics to contribute to the developing database of criteria, glossary of items and exemplars. To this end, a project Wiki was established, enabling interested academics to contribute to the developing instrument. The project website will remain a dynamic resource, populated with content from the higher education community to enable ongoing sharing of resources and case studies demonstrating best practice in online learning and teaching.

The PRI uses banks of criteria for use in curriculum review, detailed explanations of the meanings of the criteria, examples of best practice and a database that records the outcomes of the review process. The initial selection of criteria for course evaluation was based on a comprehensive review of the academic literature and therefore is relevant to a wide audience. Academics using the instrument can select the criteria against which they wish to evaluate their courses (Figure). They also have the flexibility to add to the database of criteria, including links to other resources and examples of best practice. The system is flexible so that academics can select banks of criteria and then choose whether or not to include each criterion within a bank. Academics can also add extra criteria for specific purposes. Although maximum flexibility is available, it is recommended that a “core set” of criteria in each bank be used to allow comparability between different courses. Academics can select individual questions from a range of banks, Figure 1 provides an example of the Learning Activities bank. The interface also allows for the selection of the measurement scale to be used.

Peer Review of Online Teaching and Learning
The online home of resources supporting the Australian Learning and Teaching Council-funded Peer Review Project

Currently logged in as Peer Review Testing Account (Logout)

Criteria: Manage

Home \ Administration \ Criteria \ Manage Criterion

Bank: Learning Activities

Filter Reset

Name	Type	Available?	Created	Modified	Options
Learning activities are appropriate	Likert Scale	Yes	2008-07-18 22:23:12	2008-07-18 22:23:12	Edit
Learning activities are varied.	Likert Scale	Yes	2008-07-18 22:24:21	2008-07-18 22:24:21	Edit
Learning activities reflect ideas.	Likert Scale	Yes	2008-07-18 22:24:54	2008-07-18 22:24:54	Edit
Purpose of each learning activity is stated.	Occurance Scale	Yes	2008-07-18 22:24:02	2008-07-18 22:24:02	Edit

5 queries executed in 0.0272 seconds | System v0.1.1 | Form v1.0
Peer Review of Online Teaching and Learning | An Australian Learning and Teaching Council Project | Accessibility | Disclaimer | Last updated Saturday 5th July, 2008

Figure 1.
Interface for selection of criteria

The four main components of the instrument are instructional design, interface design, the use of multimedia to engage learners and technical aspects of multimedia. These components are broken down into the following sections:

1. Instructional design
 - a. clarity of expectations
 - b. building student knowledge
 - c. learning activities
 - d. assessment
 - e. evaluation
 - f. human interaction
2. Interface design
3. Use of media
 - a. interactive multimedia
 - b. writing style and accuracy of text
 - c. copyright
4. Technical aspects

A broad range of criteria can be included within each section of the instrument. The academic using the instrument for a specific application can select questions from each section that are relevant to their review. Alternatively, a wizard has been developed that allows automatically constructs a review tool for a specific theme, in the cast the First Year Experience (Table) Even when the wizard is used, an academic can still add or remove particular criteria. The categories included in the wizard for first year course evaluation were informed by principles of first year curriculum described by Kift (2008). These principles consist of Transition, Diversity, Design, Engagement, Assessment, Evaluation and Monitoring. Items were developed in each of these sections; these items relate directly to quality concerns agreed in the literature and allow for input of both quantitative and qualitative content by the reviewer. Table 1 presents an example of items selected by the First Year Curriculum Wizard. Note that each item is drawn from one of the four main item banks to provide a tool specific to the review of the first year curriculum.

Table 1.
Example of items selected by the First Year Curriculum Wizard.

First-year curriculum Guidelines (Kift, 2008)	Example items
<p>Transition Good first-year curriculum aids transition from previous educational experience to the nature of learning in higher education.</p>	<p>Are students asked to self- assess their knowledge, skills and attitudes against discipline expectations?</p> <p>Are modules included that allow the student to investigate what it means to be a professional in their discipline?</p> <p>Are opportunities for independent learning included and identified?</p>
<p>Diversity Student diversity may exacerbate transition issues.</p>	<p>Are assumed knowledge and skills clearly stated and resources available to address deficiencies?</p> <p>Are opportunities identified for different learning styles?</p> <p>Is a diversity of learning, teaching and assessment approaches used to cater for different learning styles?</p>
<p>Design First-year curriculum should be student focussed, explicit and relevant.</p>	<p>Is the curriculum relevant and student-focussed?</p> <p>Are the objectives clearly expressed in terms relevant to the first-year student?</p> <p>Are there linkages between this course and other courses?</p> <p>Are there linkages between the course and the profession?</p>
<p>Engagement Does the curriculum involve and engage students?</p>	<p>Are team-based learning approaches used?</p> <p>Is there a dedicated physical or virtual space for first-year students?</p>
<p>Assessment Assessment aids transition to higher education assessment and provide early feedback to students and staff.</p>	<p>Do students receive feedback early in the course?</p> <p>Are annotated exemplars provided?</p>
<p>Evaluation and Monitoring Curriculum is evidence-based and evaluated. Interventions for students at risk.</p>	<p>Is the curriculum evidence-based?</p> <p>Is there a mechanism for monitoring student engagement?</p>

The PRI is a dynamic system and features server-side scripting to enable pages to be dynamically generated to display data and content in response to users' queries (Wood & Friedel 2008). The system is made up of the following components:

- A main *template* with consistent look-and-feel
- Several modules that are designed to perform specific tasks for the user. Modules can be nested, meaning that the 'administration' module can contain a 'user' module, for example, to enable the administration of users.

- A *database* storing all of the data, including peer reviews, user data, criteria, glossary items and exemplars.
- A wizard is currently under development to assist with development of reviews.

The most powerful feature of this dynamic approach is its runtime configurability. The dynamic approach adopted for this project enables users to add, remove or modify criteria at any time through the use of the database and dynamically-prepared web pages (Wood & Friedel 2008). This flexibility future-proofs the system ensuring that as new technologies emerge, they can be added into the system without additional programming work. For example, an additional bank of questions addressing the teaching-research nexus is currently being developed.

The peer review system makes use of the following open source technologies:

- *Apache HTTP Server 2.0.63*, which is an open source HTTP server that enables the hosting and deployment of web pages.
- PHP (PHP: Hypertext Processor), which is a server-side scripting language that can be embedded into HTML documents to enable dynamic pages to be created. This enables the developers to create pages including features such as tables and form elements to be populated with data on-the-fly based on the specific data requests of the user. PHP 5 is the current major version of this programming language.
- *MySQL 5.0.51a*, which is a powerful relational database management system (DBMS) that is well suited for web applications.

The Instrument is currently at the stage of Beta testing. Academics are invited to view the instrument, to suggest new criteria or make changes to existing criteria and to include links to the literature or examples of best practice.

More information about this project can be found on the project Wiki at <http://peerreview.unisa.edu.au/wiki/index.php/Instructions>

Discussion

Although attitudes vary, it is evident that some academics view the teaching of first year students as less prestigious than more senior or postgraduate students. Thus, first year teaching may be delegated to junior academics or postgraduate students, without any special consideration of the skills needed to develop and deliver successful courses to first year students. As Kift (2008) states, particular recognition is needed for teachers who engage in this complex and challenging work with first year students. However, at present there is no tool available to evaluate the first year curriculum, leading to difficulties in achieving teaching awards, promotion and other appropriate recognition. The Peer Review Instrument developed in this project provides a mechanism for curriculum review according to criteria selected by the academic. Thus, the academic may elect to review a course, or invite their peers to review their courses, according to criteria that meet their own interests, emerging priorities of their institution or of higher education in general, and to address the requirements of particular awards and recognition, in this case the first year curriculum.

Case studies of the use of the PRI are currently being undertaken. These case studies include a diverse range of courses and various aspects of courses. The use of the tool as a reflective instrument for an academic reflecting on the performance of a new course, review of courses by peers and use of the instrument as “just in time” professional development for academic staff writing first year curriculum will be evaluated at the conclusion of these trials. An interesting application of the tool is currently being trialled, in which students use the tool to assess their own work formatively and then summatively against the criteria used for assessment. The outcomes from these trials will be published as examples of the ways in which the instrument can be used. These will be reported using a semi-structured template to enable comparison of process and outcomes.

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