

Authentic learning: A paradigm for increasing student motivation in an era of mass education

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Abstract: *If universities are to meet federal targets for mass participation in higher education, they must find new strategies for engaging both prospective and current students. Both prospective and current students need to see the relevance of their studies to a future career, and to understand how the knowledge and skills they gain at university will translate into future professional practice. Authentic learning describes an educational approach that is framed around providing "real life" contexts for learning. It provides a powerful paradigm within which to shape a new approach to the design of educational programs. Herrington and Herrington (2006) defined nine characteristics of authentic learning environments. Using these as a framework, we have designed two checklists that allow academics to evaluate the degree to which their units or teaching activities align with the principles of authentic learning. Through a faculty-wide teaching development project, we are encouraging academics across diverse disciplines to review and refine current practice, with the aim of increasing student motivation through provision of authentic learning opportunities. The project itself employs authentic learning strategies to motivate and engage the participating academics. In this paper, we report on implementation strategies, and present initial evaluation data. Outcomes of this project will include: an increased awareness of the principles of authentic learning across a large faculty; introduction of new learning activities; and a resource containing exemplars of an authentic learning approach to educational design.*

Keywords: *authentic learning, student engagement, motivation*

Introduction

The Bradley Report (Review of Australian Higher Education. Final Report, 2008) has been termed “ a critical milestone in the recent history of the Australian higher education sector” in that it calls for a significant expansion in domestic undergraduate enrolment, including “a sharp increase in participation rates of under-represented groups” (Birrell & Edwards, 2009, p. 4). Two high-level recommendations of the Bradley Report (p.18) were:

Recommendation 2

That the Australian Government set a national target of at least 40 per cent of 25- to 34-year-olds having attained a qualification at bachelor level or above by 2020.

Recommendation 4

That the Australian Government set a national target that, by 2020, 20 per cent of higher education enrolments at undergraduate level are people from low socio-economic status backgrounds.

If universities are to meet these new federal targets for mass participation in higher education, they must find new strategies for engaging both prospective and current students. The Bradley Report discusses the factors contributing to students’ expectations about their higher education experience, and points out that these include: “an expectation of personal and vocational relevance and coherence in what is studied and assessed and the capacity to be appropriately employed on graduation” (p. 70). Indeed, the 2008 Report on the outcomes from the initial administration of the Australasian Survey of Student Engagement (AUSSE) demonstrated positive links between student engagement and integration of employment-focused work experiences into study (Scott, 2008), while Tricker (2003) notes growing expectations amongst university students for direct links between study and career. However, the 2009 AUSSE survey (AUSSE, 2009) indicated that the University of Tasmania scored below the national average on several relevant indicators of student engagement: *Industry placement or work experience; Practicum/internship; where to look for jobs; Made presentation; Worked with students outside class; How to present to potential employers; Kept resume up-to-date*. Thus, as university educators, we need to develop teaching approaches that enable students to see the relevance of their studies to a future career, and to understand how the knowledge and skills they gain at university will translate into future professional practice.

Authentic learning describes an educational approach that is framed around providing "real life" contexts for learning. It provides a powerful paradigm within which to shape a new approach to the design of educational programs. Herrington, Oliver, and Reeves (2002) define nine characteristics of authentic activities, including: *Authentic activities have real world relevance*, and *Authentic activities can be integrated across different subject areas and lead beyond domain-specific outcomes*. Thus authenticity encompasses not only professionally orientated learning outcomes, but also allows a broader focus on developing core graduate attributes within a learner-centred environment (Herrington, Oliver, & Reeves, 2002).

We suggest that there is considerable scope to revitalize and realign our teaching programmes through the incorporation of authentic learning principles and practices. Contextualised, authentic learning activities represent a key strategy for re-engaging our students and enhancing their acquisition of lifelong learning skills (Herrington, Oliver, & Reeves, 2002). In addition, Dunworth (2006, p. 1) comments that authentic assessment “invites a criterion-based...approach to assessment” and calls for “criteria that adequately and cogently describe those competencies and the requisite standard of assessment”. This resonates with two core

expectations of students about their university experience: *clear assessment guidelines*; and *prompt and helpful feedback on their learning* (Scott, 2008). We therefore initiated a faculty-wide teaching development project which aims to disseminate the concepts of authentic learning across the teaching staff of the Faculty of Science, Engineering and Technology at the University of Tasmania; to stimulate development or refinement of authentic learning opportunities for our students; and to gather a collection of exemplars of authentic learning activities that would form a resource for academics after the end of the project. In this first paper, we report on implementation strategies, and present initial evaluation data.

Approach

Consistent with the theme of the project, our approach to project planning was influenced by the principles of authentic learning articulated by Herrington and Herrington (2006), with the project participants viewed as learners. In particular, we took account of the following key characteristics of an authentic learning environment: *provides an authentic context that reflects the way that knowledge will be used in real life; includes collaborative construction of knowledge; provides space for reflection and articulation of ideas* (Herrington & Herrington, 2006). In keeping with this approach, the project team considered themselves as facilitators of a learning process rather than as directive leaders. We therefore employed a 'hub and spoke' model of project management (as in Dermoudy, Jones, Osborn, Geraghty, & Dearden, 2005; Jones et al., 2005, 2007). In a hub and spoke model, the 'weaver' at the hub has "the vision, the energy, and the social skills to connect to diverse individuals" (Krebs & Holley, 2002, p. 7). For our purposes, then, the project team forms the hub, connected via the spokes to discipline participants who, in turn, connect with a group of school-based colleagues. The project team (Jones, Dermoudy, Osborn, and Yates) was supported by a project manager (Casper), who undertook organisational and administrative functions as well as contributing to project design.

Our first priority was to engage a group of discipline-based participants from across the Faculty of Science, Engineering and Technology. This large faculty encompasses schools (departments) of the fundamental sciences, computing and information systems, psychology, engineering, and architecture and design. We sent emails to all Heads of School, setting out the scope and aims of the project, and inviting them to nominate School participant(s). This strategy also ensured that knowledge of the project was disseminated widely via the faculty leadership. The nominated participants were contacted by the project manager and invited to attend a workshop. They were sent two key references (Herrington & Herrington, 2006; McKenzie, Morgan, Cochrane, Watson & Roberts, 2002), and asked to come prepared to share an example of an activity or unit that they considered might meet the criteria for authentic learning.

All eleven Heads of School within the Faculty responded to the request to nominate a participant for the project. Seventeen discipline participants, representing ten of the eleven Schools of the Faculty, and both Hobart and Launceston campuses, have attended at least one workshop.

At Workshop 1 (held early in semester one, 2010), the project team presented an overview of the project, and explored the rationale for including authentic learning activities in teaching. Discipline participants then shared examples of authentic learning activities that they were currently employing in their teaching. Participants next broke up into small groups and peer-assessed these examples against the principles of authentic learning using an authentic

learning (AL) checklist developed by the project team. This AL checklist allows one to determine the extent to which a learning activity or unit meets nine critical characteristics of authentic learning (Herrington & Herrington, 2006). These criteria are: *provides an authentic context that reflects the way knowledge will be used in real life; authentic activities; access to expert performances and the modelling of processes; multiple roles and perspectives; collaborative construction of knowledge; reflection; articulation; coaching and scaffolding; and authentic assessment*. Participants gained feedback on their examples from their peers, and were then asked to suggest ways in which they might modify their teaching in order to better provide a more authentic learning experience to their students. Thus, the activity represented an authentic learning activity for the participants themselves as they engaged in *collaborative construction of knowledge, reflection; and articulation*.

In addition, the participants provide valuable feedback to the project team on the design of the AL checklist. In response to this feedback and further reflection by the project team (including re-visiting the source reference: Herrington & Herrington, 2006), the original AL checklist was refined and reconceptualised as two separate AL checklists, one for a unit and one for a learning activity. The checklists were re-designed to allow responses of *yes, partly, or no* to a series of statements drawn from Herrington and Herrington (2006)'s text in which they expand upon the meaning of each of their nine principles of authentic learning. The pattern of responses allows one to assess the degree to which a particular activity/unit fully conforms with the principles of authentic learning, and will also highlight where further development might be necessary.

Workshop 2 was held during the mid-semester study break of semester two, 2010.

Participants were asked to complete a pre-workshop activity that involved:

1. Assessing a unit/activity for authentic learning attributes using the revised checklist.
2. Briefly describing the unit/activity.
3. Identifying aspects of this unit/activity that they would like to align more closely with authentic learning principles.
4. Proposing changes to achieve this.

During the workshop, participants had the opportunity discuss their examples and share ideas (through *articulation, multiple roles and perspectives*). At the end of the workshop, they were asked to indicate if and how their proposed changes had been modified by peer feedback (representing *coaching and scaffolding*). There was considerable discussion of issues around authentic learning, including: the difficulties of designing authentic learning activities for large classes; whether learning activities must be collaborative to meet the criteria of authenticity; how to maintain currency of scenarios or problems; students' perceived lack of enthusiasm for "complex and ill-defined" tasks; and how to provide examples of "expert performances". Some participants reflected that being involved in the project had turned around their way of thinking about what constitutes an effective teaching approach. One participant commented that: "what I thought was a good teaching approach was breaking things down" (i.e.: into small manageable 'chunks' of content presented in a clear sequential order). They now appreciated that this approach was at odds with the principles of authentic learning: that tasks are complex and ill-defined, and resist being divided into shorter, simpler, disconnected tasks (Herrington & Herrington, 2006).

A third and final Workshop is planned for the end of the 2010 teaching year. At this workshop, discipline participants will be asked to report on relevant initiatives introduced during 2010, or being planned for 2011, and to provide reflective feedback on the project as a whole. Suggestions for gaining relevant student feedback via targeted questions in the Student Evaluation of Teaching and Learning (SETL) have been provided to them by the project team.

In addition, we are collating exemplars of authentic learning activities or units for a web-based resource that will be made generally available via the faculty website. This part of the project was initiated via a bulk email to all staff in the faculty, asking them if they wished to contribute an exemplar to the resource: a proforma for describing the example was provided. Each exemplar will be supported by a completed AL checklist, and authors will be acknowledged on the website as contacts for further information. We anticipate that this will facilitate further sharing and dissemination of the concepts of authentic learning beyond the project participants.

Outcomes and future work

The project has provided a model of authentic learning in that it meets the following criteria of authentic learning: *provides an authentic context that reflects the way knowledge will be used in real life; authentic activities; access to expert performances and the modeling of processes; multiple roles and perspectives; collaborative construction of knowledge; reflection; articulation; and coaching and scaffolding.*

The two AL checklists (designed for a learning activity, and for a unit, respectively) are key outputs of this project. The AL checklists are user-friendly tools that allow academics to evaluate the degree to which their activity or unit meets the criteria for authentic learning, and where it does not. The AL checklists are, therefore, tools for reflection that support both the validation of a current approach as representing authentic learning and planning for future refinement. They will form part of the web-based resource of authentic learning exemplars that will be a final output of the project.

During the project, participants have used the AL checklists to evaluate six units and seven learning activities against the characteristics of authentic learning. These units or activities represent a range of examples of authentic learning experiences for first year students through to students enrolled in masters by coursework. These examples include: students preparing posters on a scientific topic and presenting them at a mock conference; students writing an authentic species entry for the Natural Values Atlas of Tasmania; capstone units in which students engage with industry to solve a real-world problem; students of physics working with authentic research data; and students writing an excursion report in the form of a journal paper. Exemplars (with associated AL checklists) are currently being collated for collection into a web-based resource. Ten exemplars have been evaluated using the appropriate AL checklist as representing examples of authentic learning activities or units. Exemplars have been offered by academics outside the core group of discipline participants, indicating a broad level of engagement with the fundamental ideas of this project across the Faculty. Project participants are acting as agents of dissemination within their own schools, thus acting as effective 'nodes' (*sensu* Krebs & Holley, 2002). One discipline participant commented: "I am hoping to use some of it to influence other units within our school." These indicators demonstrate a wide level of connection with the project across the Faculty via our hub-and-spoke model of project design (Krebs & Holley, 2002).

At this stage, it is too early to report on the impacts on student learning outcomes from new teaching and learning initiatives. However, participants will be encouraged to report back to the project team on the results of student feedback and formal evaluations (e.g. via SETL) of authentic learning initiatives that have been revised or developed through this project. Such data will be included in future publications.

Conclusions

This project has raised awareness across a large and diverse faculty that authentic learning is a powerful tool for engaging and motivating students, and for enhancing their learning in an environment that is “inherently multidisciplinary” (Lombardi, 2007, p. 2). In particular, the project has empowered practitioners to reflect upon their own teaching approach within what was, to many participants, a new paradigm. Although it was beyond the scope of this one year project to assess the impact of the initiative on student learning outcomes, there is substantial evidence that authentic learning activities provide powerful tools with which to encourage deeper learning and to improve learning outcomes (Newmann, Secada, & Wehlage, 1995). Newmann, Bryk, and Nagaoka (2001) note that “when teachers organize instruction around assignments that demand higher order thinking, in-depth understanding, elaborated communication and that make a connection to students' lives beyond school, students produce more intellectually complex work” (p. 2).

Finally, the degree to which authentic learning opportunities are integrated into an organisation's teaching portfolio has been recognised as a parameter for measuring teaching quality. In this era of increasing participation in tertiary education, a more overt emphasis on authentic learning will help to ensure that students are well-prepared for the complexity of a rapidly changing professional world (Lombardi, 2007). Oliver, Herrington, Stoney, and Millar (2006) discuss strategies for quality assurance of teaching and learning in their paper on authentic teaching and learning standards. They recommend that:

- *Learning experiences situate learning in contexts in which learning will be applied. Students learn, retain, and transfer learning when learning occurs in contexts that reflect tasks they will encounter in society and in their professional practice*” (p. 306).

They present a set of quality indicators that relate the provision of appropriate learning experiences for students. These include:

- “*Students are engaged in authentic learning activities*” (p. 306).
- “*Assessment tasks are authentic and integrated with instructional activities*” (p. 307).

As articulated by Reeves (2006): “The time for significant support for the development of more authentic learning environments throughout higher education is now” (p. viii). This project goes some way towards meeting that agenda.

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