COULD PEDAGOGICAL PLANNERS BE A USEFUL LEARNING DESIGN TOOL FOR UNIVERSITY LECTURERS?

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Abstract

Designing learning for the higher education environment is a complex task: learning materials need to take into account different student ability levels, learning approaches, media and curriculum. Learning Design is a professional discipline in which many of our lecturers have no qualifications. However, this situation might be improved with good guidance, inspiring examples, and supportive tools. It is suggested that pedagogical planners may provide lecturers with a learning design scaffold that guides them through the learning design process so that they might develop effective and pedagogically sound learning designs. This paper reports on the case for pedagogical planners and is the first stage in a major project that will be further developed throughout 2008–2009.

Background

Toohey (2002) believes that the design of learning has always been a pragmatic art, aspiring to provide a rich set of experiences for students. She feels that much of the creativity and power in the teaching lies in the design of the curriculum: the choice of texts and ideas which become the focus of study, the planning of experiences for students and the means by which achievements is assessed. Of course the way in which the curriculum is brought to life is equally important, but the power of good teacher-student interactions is multiplied many times by good learning design. Heathcote (2006) suggests an ongoing obstacle to the widespread adoption of effective and engaging learning design is the degree of pedagogical understanding required by a lecturer to make the most of the available resources. While educational developers can assist academic staff in this regard, resources and time limitations mean this support is rarely just-in-time or widespread. A number of projects have recently emerged with an interest in developing a tool to guide lecturers through the learning design process so that they might develop effective and pedagogically sound learning designs. These tools attempt to document the choices and decisions considered by experienced lecturers so that they might make the less experienced aware of the thinking behind a learning design.

Ideally, these tools will be designed to stress the core elements that should be followed if a learning design is to be success and pull together the lecturer's thinking into a clear, definable structure. According to John (2006) these scaffolds should include details about the nature of the students, types of technology and learning activities, pedagogical approaches, the learning environment both physical and virtual, learning outcomes and the roles of all the participants.

However, before any learning materials are developed, Ally (2004) considers lecturers must, tacitly or explicitly, know the principles of learning and how students learn. This is especially true for online learning, where the instructor and the learner are separated. The development of effective learning designs should be based on proven and sound learning theories but unfortunately some lecturers have not obtained that knowledge as part of their preparation to teach in the higher education sector.

Similarly there are very good examples of course design appearing which apply the most recent research into learning in creative ways but they are not well known outside their discipline. Pedagogical planners may prove useful to those lecturers who want to take advantage of this research and learn more about learning design, and those who are trying to understand the problems they face in teaching and how these might be addressed. A pedagogical planner can offer a very practical approach to learning design to lecturers who appreciate the potential significance of their teaching role and have real desire to delve into educational issues but are looking for.

Throughout this paper these tools will be referred to as pedagogical planners but it should be noted that the following is a selection of labels used to describe the various tools currently under development: course builder, lesson facilitator, activity planner and a model of practice. These tools can be used for a variety of purposes:

- As step-by-step guidance to help practitioners make theoretically informed decisions about the development of learning activities and choice of appropriate tools and resources to undertake them;

- To inspire lecturers to adopt a new teaching strategy and support them in doing so (Falconer, Beetham, Oliver, Lockyer, & Littlejohn, 2007);

- Provide design ideas in a structured way — so that relations between design components are easy to understand (Goodyear, 2005);

- Combine a clear description of the learning design, and offer a rationale which bridges pedagogical philosophy, research-based evidence and experiential knowledge (Goodyear, 2005);

- As a database of existing learning activities and examples of good practice which can then be adapted and reused for different purposes (Goodyear, 2005);

- As a mechanism for abstracting good practice and metamodels for learning (Conole & Weller, 2007);

- To produce a runnable learning design intended for direct use by students (Falconer et al., 2007); or

- To encode the designs in such a way that it supports an iterative, fluid, process of design (Goodyear, 2005).

However, not all of the current pedagogical planners attempt to fulfill ALL the functions above: A number of the current planners are very specific and focused in their purpose; however, they still perform a pedagogical planning function, despite their limited applications.

Overview

As in many places throughout the world, the higher education sector in Australia has been put under pressure in recent years by expansion and restructure. Not only are many lecturers now faced with larger class sizes, students have become quite diversified in terms of ability, motivation, access and cultural background. This change has created an atmosphere where some lectures are rethinking their teaching approaches and are seeking out what is known about facilitating effective learning. This is one of the challenges that pedagogical planners may be able to address.

Biggs (2003) reports that expert teaching at university level requires mastering a variety of teaching techniques and being able to encourage most students to use the higher cognitive level processes that the more academic students use spontaneously. Therefore, effective lecturers will need to draw upon different research, strategies, approaches and theories — not just traditional ones. Hence, to be effective, the planning tools will need to be able to accommodate a variety of approaches to learning, different modes of delivery and a range of key principles of effective teaching in higher education and adult learning. Additionally, lecturers reported that their academic disciplines exerted the strongest influence on their

course planning (Stark, 2000). This suggests that a generic pedagogical planner (one size fits all) solution, that cannot be easily modified, is unlikely to be successful.

Finally, the use of the new technologies in university teaching and learning is growing rapidly with many claims for its increasing impact on the processes and outcomes of teaching and learning. Therefore, any planner that is being designed for widespread usage will need to accommodate all these different facets of teaching and learning in the higher education environment, and, additionally, be able to embrace technological integration.

The Higher Education Environment

During the 1980s participation in higher education rose dramatically in most developed countries, and particularly in the UK and British-influenced systems, such as Australia and New Zealand (Southwell, Gannaway, Orrell, Chalmers, & Abraham, 2005). The reasons were largely economic. Increasing automation was making many low-skilled jobs redundant. Increasing internationalization of national economises was bringing workers in developed countries into direct competition with much cheaper labour in developing countries. Unemployment was rising steadily in the West as a result of technological change and pressure on manufacturing industries to move operations offshore so as to benefit from cheap sources of labour (Toohey, 2002).

The expansion, restructuring and refinancing of the Higher Education sector has meant that classes are not only larger but quite diversified in terms of student ability, motivation and cultural background (Biggs, 2003). As the financial cost to students has continued to increase and some courses have become full fee paying, students have been required to work while studying. More employed students mean it is common for students to have to balance work, family and study commitments. Access to a university education via e-learning methods has become an attractive option for many of these students. Additionally, in recent years, Australian universities have sought to increase funding options by attracting increasingly large numbers of overseas students; many of whom English is a second language. All these factors have placed increasing demands on lecturers in terms of teaching skill.

Attempts to ensure quality in higher education and to encompass a broader range of skills and abilities have largely centred on the design of courses. Over the past decade the pressure has been on tertiary education institutions throughout the developed economies to review, document and defend their curriculum decisions (Toohey, 2002).

For the majority of academic staff, teaching is only one of many responsibilities in their work portfolio. The percentage of academics who performed research-only functions increased while that of academics who had teaching-only functions dropped from 29% to 6% (Australian Bureau of Statistics, 1997). During the same period, student numbers also increased in higher education, creating greater demands on academics' time and resources (Australian Bureau of Statistics, 1997). Academics have always been teachers but Biggs' research (2003) demonstrated the first priority for many is to keep up with developments in their content discipline, and to contribute to them through research. He observed that developing teaching expertise takes second place in the university environment: a set of priorities dictated as much by institutional structures and reward systems as by individual choice.

According to the Department of Education, Science and Training (2002), lecturers have a responsibility to design, manage and teach their subjects in such a way as to engage learners and facilitate effective learning and recommendations have been made for a renewed focus on scholarship of teaching and professionalism of teaching practice. However making student learning a high priority places much more responsibility with the lecturers. It also implies that the lecturers must know something about student learning, and what makes it possible (Laurillard, 2002). In 1996 Gibbs reported that most lecturers were less sophisticated as teachers than as researchers and even the best teachers were often gifted amateurs rather than rigorous professionals with any knowledge of the literature. Without any co-ordinated policy designed to address this issue, quality teaching at the higher education level can still be inconsistent.

Additionally, more complex institutions are expected to offer a broader range of courses through more flexible delivery systems with reduced public funding. Toohey (2002) proposes that new models of learning design are the only realistic way to handle these pressures and maintain current standards. There is an opportunity to bring together the need to rethink higher education provision with what is known about encouraging effective learning so as to produce learning designs which offer greater possibilities than some of the current solutions. One of the solutions being currently offered is the utilisation of pedagogical planners.

A Way Forward — Structured Guidance

Ramsden (2003) found that lecturers look for support with their teaching for a number of reasons. They may be concerned about their students' performance, they may want some reassurance about their teaching techniques, or they might want to try an innovation. Some lecturers do not know how to start improving

their teaching, often overwhelmed by the field's complexity, and they ask for quick fix that will solve all their difficulties.

Depending on the infrastructure provided by their institution, help may be on hand in the form of professional development staff but as each university tries to do more with less, often the availability of help is limited, if it can be offered at all. Stark's research (2000) found that most university lecturers do not avail themselves of expert assistance when planning courses even if it is readily available and rarely read educational literature. They relied on their own ad hoc observations because they did not find the information available to them about learning and teaching meaningful. As a result, these lecturers were attempting the complex and challenging task of effective teaching with no training nor were they intending to make any attempt to develop their teaching skills in the short term. This is not an isolated incident and similar findings have been reported elsewhere (Knight, 2004).

The pedagogical planner projects have arisen out of a perceived need for alternative methods of support for these lecturers. As an initial step, sharing learning design designs, resources and methods used by others have been trialed successfully at a number of universities. For example, The Learning Design Template Project at Queensland University of Technology (Heathcote, 2007) which provided lecturers with templates that embedded pedagogical principals, e.g., problem-based learning, critical thinking; and the online course templates based on specific learning designs that were developed to support courses at the University of New South Wales (Allen, 2007). Both these projects are currently under development after successful pilot studies. Additionally, lecturers may also have access to external example designs such as those provided on the "Learning Designs" website at the University of Wollongong (Oliver, Harper, Hedberg, Wills, & Agostinho, 2002). However, Goodyear (2005) notes that the resources available to university lecturers for learning design are not of a consistent quality, are difficult to locate in relation to a particular pedagogical framework, and are not constructed in such a way that they capture and distil the practical implications of research-based knowledge and nor do they accommodate the iterative nature of design practice.

Additionally, a number of other pedagogical planner projects have emerged to encourage staff to look at their teaching differently, to question their existing teaching methods, to search out reasons for the effects of their teaching on their students' learning and to apply what they find out in different assessment and instructional methods. The LearningMapR tool (Buzza, 2005) and two JISC-funded planner tools, Phoebe (Manton, 2007) and the London Planner (Laurillard, 2008) are still at the proof-of-concept stage but both projects have already attracted international interest.

An Overview of Approaches to Learning

It is vitally important that the pedagogical planners can accommodate the variety of learning styles approaches and theories. The approach a lecturer takes is likely to be based on what they know of learning theory and practice. This can be from their training or from talking to colleagues, as well as the professional know-how they have gained in the course of their career (Knight, 2004). Biggs (2003) suggests that theory makes them aware that there is a problem, and it helps to generate a solution to it. This is where many Higher Education lecturers are lacking; not in theories relating to their content discipline but in well-structured theories relating to teaching their discipline. This may be where the pedagogical planner will be most effective. Reflecting on their teaching and seeing what is wrong and how it may be improved, requires them to have an explicit knowledge of the theory of teaching that perhaps the planner can provide.

Discipline Specific Knowledge

Stark (2000) found that lecturers reported that their academic disciplines exerted the strongest influence on their course planning. The views lecturers held about the nature of their discipline are intricately linked with their beliefs about the purposes of education. Many lecturers felt that these disciplinary influences were strongly rooted in their own scholarly background and were especially dependent upon their preparation and their prior teaching experience. Discipline is the key predictor of classroom goals and beliefs about education while other factors have a much smaller influence.

Ramsden (2003) agrees it is important to understand that the general educational goals are determined through the specific subject content in which they are expressed. Stark (2000) found the importance of building on disciplinary orientations to support teaching improvement and of fostering understanding of disciplinary differences should not be under-estimated and that it often hampers curriculum committees in their work if they promote institution-wide generic principles. This suggests that a non-specific pedagogical planner (one size fits all) solution that cannot be easily modified, is unlikely to be successful.

Laurillard (2002) found discipline variations in the way lecturers prefer to arrange content parallel their educational beliefs and view of their discipline. Lecturers of History and Fine Arts were different from others in that they placed more emphasis on arranging content according to the way their field is structured, and the vocational fields of Nursing, Business, and Education placed slightly more emphasis on students' vocation need.

However, lecturers need to know more than just their subject. They need to know the ways it can come to be understood, the ways it can be misunderstood, what counts as understanding and they need to know how students experience the subject. Bates (2003) suggests the way the subject is taught is driven primarily by lecturers' beliefs or by the commonly agreed consensus within an academic discipline about what constitutes valid knowledge in the subject area. The nature of knowledge centres on the question of how we know what we know.

Stark (2000) found that lecturers' disciplinary socialization and their current beliefs about the fields they teach influence how they plan courses as well as how they teach them. She believes this illustrates that learning design is not only as science but a creative act linked to lecturer thinking that must be examined contextually. Even within a discipline, Cook (2006) found there may be a need to approach the same subject in different ways to meet the learning needs of all students. He quotes Russell, who found that hard-pure disciplines (such as subjects like Maths and Physics) tended not to use collaborative tools. Whilst other groups highlighted e-portfolios and other reflective technology as key tools, Natural Sciences and Maths did not use such tools. Soft-pure subjects (e.g., English and Art) valued communicating effectively using different modes of expression and also used wikis to encourage shared knowledge-building and active research. Cook suggests it may be that Maths and Physics do not use discussions because of the subject nature, or because the design of the learning does not provide room for discussion. He poses the question: Are the differences between subjects because there are fundamental differences in the disciplines or just the ways the learning approaches have been embedded over time?

The Use of e-Learning

The role of a pedagogical planner in designing learning using technology is the same as with any other learning design but, there are a number of additional factors to consider: most importantly, deciding on the locus of control and working within the available resources. Technological capabilities dictate not how much learner control is supported, but how much is possible. They determine not what should be, but what could be (Hannafin & Land, 1997), hence technology can be used to personalize learning or depersonalize it. The use of technology in university teaching and learning is growing rapidly, with many claims for its increasing impact on the processes and outcomes of teaching and learning. Much of this is occurring in an ad hoc way, driven by the technology itself (Boud & Prosser, 2002). Many of the developments adopt a teacher-focused rather than student-focused perspective in the process of translating teaching practices into new forms. They involve designing and presenting materials using new technology rather than utilizing knowledge of how students' experience learning

through the technologies. It is suggested that pedagogical planners could offer some alternatives.

E-learning offers scope to organise teaching differently (Naace, 2004). Neither lecturers nor students have to be (always) present in the classroom; it allows for access to materials that would otherwise not be available in a classroom, and allows lecturers and students to structure learning materials in a variety of ways; enables different preferences for learning to be more easily accommodated, and makes it easier for students to access learning. Bates' research (2003) has confirmed e-learning is not necessarily better or worse than face-to-face education although it is different. Once it is accepted it is not necessarily better or worse, the nature of the argument about learning technologies changes. The question then is, "in what contexts and for what purposes are they best used?" This is a consideration that should be built into the decision-making process of a planner.

The ideal e-learning model, according to Mayes and de Freitas (2004) would describe how to engage the learners in meaningful tasks, give rapid feedback, encourage reflection through dialogue with tutors and peers, align assessment, and would encourage the creation of a community of learners through discussion. Boud and Prosser (2002) provide guidelines for best practice in e-learning. They are structured around four key areas:

1. Engaging learners — Taking into account their prior knowledge and their desires and building on their expectations;
2. Acknowledging the learning context — This includes the context of the learner, the course of which the activity is part and the sites of application of the knowledge being learned;
3. Challenging learners — This includes seeking to get learners to be active in their participation, using the support and stimulation of other learners, taking a critical approach to the materials and go beyond what is immediately provided;
4. Providing practice — This includes demonstration of what is being learned, gaining feedback, reflection on learning and developing confidence through practice;

Ally (2004) adds a fifth key area:

5. Learners should be given time and opportunity to reflect. When learning online, students need time to internalize the information.

In addition to the teaching and learning benefits of e-learning, there are also benefits to lecturers in the increased efficiency of tracking and monitoring students' progress. Yet despite these potential benefits, e-learning is still not uniformly adopted across the disciplines, or even within individual institutions

(Knight, 2004). Making the move towards e-learning presents lecturers with a complex set of challenges — they may need to develop new skills, embrace changes in the nature of their role and then reassess the pedagogies they employ. As Hannafin and Land (1997) point out, in many cases of "e-learning transformation," teaching and learning approaches have often simply been re-hosted, not re-defined. A pedagogical planner could provide lecturers with step-by-step guidance that helps them make theoretically informed decisions about the learning activities, tools and resources they will need to attempt e-learning with some confidence.

Conclusion

The complex task of learning design for the higher education environment might be improved with good guidance, inspiring examples, and supportive tools. The current range of pedagogical planners acknowledge these factors in their design, along with the potential to streamline the planning process with direct input from the university's databases (such as learner records, timetabling) and learning management system. The planners also provide an opportunity to share examples of good design practice, which can be tailored to meet the lecturer's particular requirements.

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