DIRECTING ASSESSMENT AT SUPPORTING LEARNING

Som Naidu, The University of Melbourne

Abstract

This paper describes an attempt to use assessment activities in a course to support student learning and improve the quality of the students' learning experience. It aims to show that assessment activities can be more than devices for merely measuring the achievement of learning outcomes. Innovative use of assessment tasks can serve to scaffold learning and indeed enrich the quality of the student learning experience. Assessment activities that are able to lead to such outcomes mirror the sorts of activities that students are likely to be doing while in professional practice. As such, they provide students with training that they will need for professional practice. This paper seeks to illustrate how some of these types of goals are being pursued in a graduate level course that is offered exclusively in an online distance education format.

On supporting student learning

A great deal of work has gone on in supporting student learning in open and flexible educational settings in various ways, and with various technologies (see for example, Bates, 1990, Collis, 1996, and Khan, 1997). These authors survey several technologies including print, radio, audiocassettes, telephone, computer-based applications such as electronic databases and CD-ROMs, computer-mediated communication technologies (i.e., e-mail, computer conferencing, bulletin boards, audio and video conferencing, broadcast television, and the Internet. Many of these technologies are ideal vehicles for content delivery and supporting communication, but in themselves, they are lacking in the capability to support or "scaffold" student learning activity.

A "learning scaffold" is best described as a "transitional support strategy" which is put in place to guide student learning in desirable directions, or to enable the development of desirable cognitive skills in students. The expectation is that when this learning scaffold is removed from the context, the targeted skills become part of a learner's repertoire of learning skills. Parents or human teachers are excellent examples of learning scaffolds. Among other things of course, they are there to provide advice and support when these are most needed. At some point in the child's cognitive development these types of support are progressively removed and as such are no longer accessible or accessible to them only in limited ways. Children go on to live and function in society independently of the support and advice previously provided by their parents and teachers.

Learners in open, distance and flexible learning environments who work independently with self-instructional study materials, need help with the organization and management of their learning, as well as the skills to critically reflect on information they may have gathered. While a great deal of work has gone on in supporting student learning in such settings with various forms of technology and local centre-based support, work is lagging in the area of cognitive supports for student learning in open, distance and flexible learning environments (see for instance McLoughlin, 2002).

Directing assessment at learning

Research in learning and cognitive sciences has shown that an effective way to teach new skills to learners is to put them in the kinds of situations in which they need to use those skills, and to provide

mentors (i.e., expert practitioners) who are able to help learners as and when necessary (Schank, & Cleary, 1995). Through this engagement, learners come to understand when, why, and how they should use targeted skills on the job. They receive key lessons just-in-time, which is when they want the information, when it will make the most sense to them, and in a way that they will be most likely to remember the information for later use when they need it in their work.

Schank and Cleary (1995) argue that the design of such a learning experience takes the form of a storyline in which students play a key role such as being a manager of an e-business or e-learning organization. These roles are carefully selected to reflect those that students of such a program might actually do in real life, or might need to know about because they might manage or collaborate with others who might be performing those roles. Students work in small groups in these scenarios with the help of detailed information about the simulated context, together with project details. Supporting materials and resources are also available, and online mentors are available to answer questions and point students in the right direction on a needs basis (Schank, 1990; 1997). This is the main point behind the story-centered curriculum (SCC) popularized by Roger Schank and his colleagues (Schank, Fano, Jona, & Bell, 1994).

The story in this instance is the simulated context in which the student plays a key role. The story in this curriculum serves as the essential scaffold. These researchers argue that stories have always been a part of human existence. Humans have always told stories, and the most powerful of all stories shape the way in which we relate to our world. Furthermore, we tend not to forget these life-changing stories. There is good reason then to make powerful stories the centre of educational practices. These stories must involve students as well as their peers, because that is how their work situation is most likely to be. A story-centered curriculum is goal-based, and the goals are those that the student has for entering school and following a curriculum in the first place. A story-centered curriculum is also activity-based. Students work through these activities to learn the critical skills they require in order to complete their mission and successfully accomplish their goals (Naidu, Oliver, & Koronios, 1999). This is what is at the heart of the concept of "learning-by-doing". Learning designs such as these focus attention on improving the quality of the student learning experience. They ensure that the student learning experience is situated in authentic learning activities that reflect real life situations, that it is meaningful, and therefore inherently motivating for the student.

Goal of this paper

This paper argues that carefully designed assessment activities have tremendous potential to scaffold learning. It suggests that course designers need to move away from seeing assessment tasks as devices for knowledge acquisition, and start seeing them as instruments for supporting learning and improving the quality of the student's learning experience. It goes on to articulate an attempt in this direction in an online distance education course (*OMDE607: Course Design for Open and Distance Learning*) in the Masters in Distance Education Program offered by the University of Maryland University College in collaboration with Carl von Ossietzky Universität Oldenburg, Germany.

Assessment activities in OMDE607

The course development project

In being a course about the design and development of online distance education courses, a core assessment task in this course is the development of an online course component. This does not have to be a whole course, but a segment, a lesson or a module of a course. Students are provided with the resources in order to be able to complete this task. However, the course is to be considered generic, and in principle, could be delivered using other media or other delivery environments. Students are required to defend all their learning and instructional design decisions, including utilization of media capabilities for presenting content, activating and supporting student engagement with that content, assessing learning outcomes and provision of feedback to learners. Their grade on this assignment will depend not only on what they create as part of this task, but also on their engagement with the work of their Study Group. Each study group member is expected to act as a student reviewer in the courses of

their team members. The feedback they provide to their colleagues will also count towards their final assessment mark for this project.

The goal of this assessment task is to enable students to apply knowledge gained from the readings in this course and from interacting with peers. Particular attention is placed on creative and innovative integration of learning theory into the design of a course for open and distance learning. This task is aimed at developing the following skills in learners:

- Transfer of theoretical knowledge into practice.

- Translation of conceptual knowledge into creative and innovative design.

- Creative application of the unique attributes of information and communications technologies.

Website critique

Very early in this course, one of the first assessment activities that students are required to carry out is a critique of course websites of their choice. This assessment task requires them to search and analyze five course websites. They are required to focus their critique on all aspects of the design of selected courses including their pedagogy and technical attributes, as well as their look and feel. They are required to develop their own criteria for examining these course sites. The criteria that they develop would reflect their understanding of issues that are germane to learning and instructional design.

The goal of this assessment task is to enable students to undertake a systematic and critical analysis of selected online courses. It is designed to develop the following skills in learners:

- Demonstration of approach to the analysis of online course websites.

- Demonstration of understanding of learning and instructional design and its application to web-based course design.

Management report

Armed with a thorough grounding in sound principles of online course design and development, students are then required to produce a report reflecting their grasp of the management issues related to instructional design and the Course Development process.

To demonstrate competence in this kind of activity, students are asked to assume the role of an internal or external consultant to an organization of their choice. An internal consultant is an in-house expert who is often asked to provide a service to another department, or division of the organization. An external consultant is someone with the same sort of skill, but who is brought in from outside the organization to provide that kind of service. This organization is considering moving into online education and training. Its management has asked you to make a recommendation regarding the best way to organize and implement such a move.

Although a final report for this task can be quite comprehensive, for the purposes of this assignment, students are asked to focus their advice on the organization of their course development activities. They are required to write a memo to their Vice President with three organizational models of course development, outlining how the process will be staffed - who does what, what processes will be followed, where the process will be located within the organization, etc. They are required to make a recommendation as to the preferred model, offering arguments in support of their decision.

This assessment task is designed to enable students to undertake a significant piece of report writing that would reflect their understanding of the subject of instructional design and course development for open and distance learning. It is intended to achieve the development of the following skills:

- Development of skills in composition and presentation.
- Cultivation of skills in critical analysis and argumentation.

Critical reflection

In order to record their engagement with the foregoing assessment activities, students in this course are required to maintain a *Learning Journal,* which they turn in at the end of the term. This learning journal documents their plans and activities in relation to their website critique, management report, course development activity and their thinking on these tasks, what they learned from it, as well as their personal concerns and questions about it. In this journal, they are asked to pay particular attention to the learning opportunities that these assessment tasks presented to them, including what the tasks enabled them to learn about course design for open and distance learning settings.

The goal behind this requirement is to enable students to systematically capture their engagement with the course design and development activity and learning in this course. For the assessor, the learning journal permits an insight into students' approaches to the course development task, their thinking on the subject, what they learned from it, as well as their personal concerns and questions about it. The keeping of the learning log serves as a useful tool in the cultivation of skills in critical reflection in and on their own learning activities (Schon, 1987). It also reflects a student's ability to capture the less overt and less tangible aspects of their learning.

Data analysis and discussion

Twenty-four student *learning journals* (derived from the Fall 2002 cohort) were carefully studied in order to ascertain what the students thought they got out of the assessment tasks that they completed for this course. A great deal of interesting commentary was observed, which was not possible to reproduce in this paper. Instead a snapshot of the gist of the students' commentary is presented here. In this summary, we have tried to capture the spirit of this commentary under six categories that emerged from the journal commentary. As such, they summarize what the students thought they got out of the assessment tasks in this course. They also reflect very accurately the key emphases of the course itself. Each one of these categories is discussed briefly in the following.

Instructional systems design. The technology of the Instructional Systems Design (ISD) process is a core component of this course. It offers a systematic approach to the analysis, design, development, and evaluation of learning and teaching. In this course, it offers students the primary scaffold for studying about learning and instructional design processes. Students suggested that the assessment tasks in this course enabled them to get a good grip of the ISD process, including various models of the process as well as the power of the technology.

Setting and assigning goals and objectives. A key lesson of the ISD process is how to set clear and concise goals and objectives for any educational activity. This may seem like a simple process, but it is not. Educational practice is fraught with instances of poorly designed goals and learning objectives that are very hard to assess fully and fairly. The assessment tasks in this course were designed to give students plenty of practice in setting goals and objectives. Students in the course suggested that these activities enabled them to rethink contemporary practices in the setting of goals and objectives, and their importance to learning and the assessment of learning outcomes. They said that they also learned how to go about setting clear goals and objectives that are meaningful to learners, and which serve as scaffolds or road signs for learning.

Pedagogical models and learning theories. At the heart of instructional design lies an adherence to how human beings come to learn something. There are several theories about how humans do learn. The assessment activities in this course required students to examine these critically. They were also required to demonstrate their competence in the translation of their preferred theoretical perspectives into real learning and teaching activities. Students said that because of these assessment tasks, they were a lot better informed about pedagogical perspectives on learning, about the role of students and teachers in these contexts, and also the important role that pedagogy played in instructional design.

Assessing and measuring learning outcomes. Sound pedagogical design and carefully crafted learning outcomes can be meaningless to the students if the assessment strategies employed are not designed in ways to assess these learning outcomes fully and fairly. The development of suitable strategies for the measurement of intended learning outcomes is very critical to good instructional design. Educational

practice is littered with terrible examples of assessment practices. In this course, by the design of its own assessment activities, we tried to emphasize the importance of setting authentic assessment tasks. These tasks are designed to be congruent with the pedagogical perspectives of the course and reflect more accurately the kinds of activities that students are likely to be engaged in when they leave formal education. As such, authentic assessment tasks serve as a form of apprenticeship for novices. Students of this course seemed to think that the assessment activities in this course were able to achieve those goals. They said that as a result of these activities, they were better informed about various methods of assessing learning outcomes, and how to make assessment more authentic, more meaningful, and motivating for students.

Use of media and delivery methods. The selection of the tools and technologies for teaching and supporting learning are just as important considerations in the design of learning environments. The technology of instructional systems design suggests that this is often a matter of matching the choice of media with a whole range of variables including, the type of learners, nature of the subject matter, and the mode of the learning and teaching transaction. In this course, we were exploring opportunities for distance education and on-line learning. Students seemed to suggest that they were able to gain an understanding of a wide range of possibilities in this regard, and more importantly, the methods for selecting appropriate technologies for particular learning contexts.

Team approach to course development. Much of course development activity, and especially for distance education and on-line learning is a team effort. Therefore, practice within a team is one of the things that we have been trying to make more use of in this on-line Masters in Distance Education program. Students are required to work in small groups to negotiate a whole range of issues that are germane to course design and development. Students felt that this kind of activity gave them essential practice in critical tasks associated with project management such as, leadership, vision, stewardship, and communication skills.

Concluding remark

A major suggestion of this paper is that supporting student learning needs to be seen as a *proactive* process rather than a *reaction* to learning problems that are encountered by students. This is easily achieved by carefully designing assessment activities that require students to engage in meaningful, authentic and motivating learning activities. This is not to suggest that students' learning experiences ought to be choreographed to the extent that in doing so, one runs the risk of killing off creativity and independence on the part of learners. It suggests providing learners with a plot to follow, which will enable them to acquire the necessary skills, and within which learning achievement can be reliably and validly ascertained.

The act of designing powerful models of learning and instruction comprises putting together into an integrated whole, what is known about what works as far as learning is concerned. While models of instruction such as problem-based learning have been widely used to support learning for a very long time in a variety of contexts, there aren't any particular fixed approaches to these processes. In fact there are very many iterations of the generic problem-based approach to learning, and all of them are probably just as powerful for their particular educational settings. This leads to the conclusion that the design of learning and instructional environments is -- to a large extent -- a creative process, not unlike architectural or engineering design. In all of these instances, the designer is engaged in putting together a conceptual model that integrates what is known about what works in that particular setting. When this design task is expertly performed, its operationalization, and the chances of its success are optimized. In the context of learning, this would mean a powerful teaching strategy and also a successful learning experience for the learners.

References

1. BATES, A. W. (1990). Media and technology in European distance education. In T. BATES (Ed.), *The EADTU Workshop on Media, Methods and Technology*. European Association of Distance Teaching Universities, Heerlen, The Netherlands.

2. COLLIS, B. (1996). *Tele-learning in digital world: The future of distance learning*. London: International Thompson Computer Press.

3. KHAN, B. (1997). *Web-Based Instruction*. Englewood Cliffs, New Jersey: Educational Technology Publications, Inc.

4. MCLOUGHLIN, C. (2002). Learner support in distance and networked learning environments: Ten dimensions for successful design. *Distance Education, 23*(2), 149-162.

5. NAIDU, S., OLIVER, M., & KORONIOS (1999). Approaching clinical decision-making in nursing practice with interactive multimedia and case-based reasoning. *The Interactive Multimedia Electronic Journal of Computer Enhanced Learning (*http://imej.wfu.edu/*).*

6. SCHANK, R. C. (1990). *Tell me a story*. Evanston, Illinois: Northwestern University Press.

7. SCHANK, R. C. (1997). *Virtual learning: A revolutionary approach to building a highly skilled workforce.* New York: McGraw-Hill.

8. SCHANK, R. C., & CLEARY, C., (1995). *Engines for education*. http://www.ils.nwu.edu/~e_for_e/, Hillsdale, New Jersey: Lawrence Erlbaum Associates.

9. SCHANK, R., FANO, A., JONA, M., & BELL, B. (1994). The design of goal-based scenarios. *The Journal of the Learning Sciences*, *3*(4), 305-345.

10. SCHON, D. A. (1987). *Educating the reflective practitioner*. San Francisco: Josey-Bass.

Author

Dr. Som Naidu, Adjunct Associate Professor (UMUC)
And Associate Professor and Head of Research and Evaluation
Department of Teaching, Learning and Research Support
The University of Melbourne,
Victoria, Australia
s.naidu@unimelb.edu.au