How do we go beyond the *affordances* of what we already do on campus? A case of supporting staff in developing a constructivist learning environment

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Abstract

In this paper a case is presented which explores one way in which a practitioner (the author) worked with others in developing curriculum for a web-based learning environment. There was an attempt by all involved to take a scholarly approach to investigating the potential for improving teaching and learning and to go beyond the appropriation of technologies which offer little more than affordances *for what already occurs within campus based programmes (Kirkup & Kirkwood, 2005). This is consistent with the institutional aim to provide new, exciting and pedagogically informed options for arts education online. A full explanation of the process through which one institution located in South East Asia proceeded in introducing and developing a programme for educators and other professionals working in the area of art education is presented. Description is provided of the aims of stakeholders to underpin curriculum making with constructivist principles while working with an algorithm for this purpose. This case may assist other practitioners who support staff with limited experience of web-based environments in enabling them to make informed decisions about how they go about teaching and learning online.*

Introduction

This case details the process through which one institution located in South East Asia proceeded in introducing and developing a programme for educators and other professionals working in the area of art education. This was undertaken in response to requests from a variety of stakeholders that included government agencies validating institutions, art teachers and other related professionals working in areas such as galleries, museums and arts management who were seeking opportunities to renew, interrogate and develop their practice as arts educators.

The programme development group (PDG)* and the stakeholders defined what would underpin the design and development of the programmes. A philosophical statement was devised through an iterative process inline within the institutional adopted conversational framework promoted by Laurillard (2002). It was also decided that aspects of the programmes would be developed for an online learning environment in response to the call for less on-campus time as many of the participants were working. The online aspects would however, complement tutorials and block sessions of face-to-face delivery. It should also be noted that few staff have understandings of e-Learning and the wider substantive field.

In addition, this case also interrogates the desire for a constructivist learning and teaching environment by using the Student-Centred, Technology-Rich Learning Environments (SCenTRLE) model (Hirumi, 2002) as an algorithm for the design and development of the online environment. Description of the 'events' is also included. The main thrust of the flexible programme, and particularly the online components is to enable authentic connections and an integrated learning experience essentially to situate the learning, which was considered important by the stakeholders. Laurillard (2002) argues: "knowledge has a contextualized character, which means that we cannot separate knowledge to be learned from the situations in which it is used" (p. 14).

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* The programme team consists of the programme leader, other lecturers in the programme (art historian and theorist in this development project), coordinator of practicum, a high school teacher, instructional designer, external government representative and IT student support.

The institution as a whole has adopted Laurillard's (2002) Conversational Framework as an organizational strategy for implementing e-Learning. This decision was made as a response to internal imperatives for both strategic and pedagogical aims. The Conversational Framework provides scope for mirroring how individuals learn and ensures that internal conversations inform all aspects of e-Development. Figure 1 provides an overview of how the dialogue is situated at this particular institution. Programmes using e-Learning are embedded within the framework to enable internal dialogue within the institution. For staff preparing and innovating for programme development within this framework, there is ongoing cyclic action-research. This is highly desirable for the institution as it aims to be a learning organisation. The SCenTRLE model fits within the framework at the level of programme development and was used as a useful and pragmatic tool for assisting staff at an early planning stage. It enabled staff to consider in an orderly fashion their curriculum making. It is only one approach that the institution is working with.
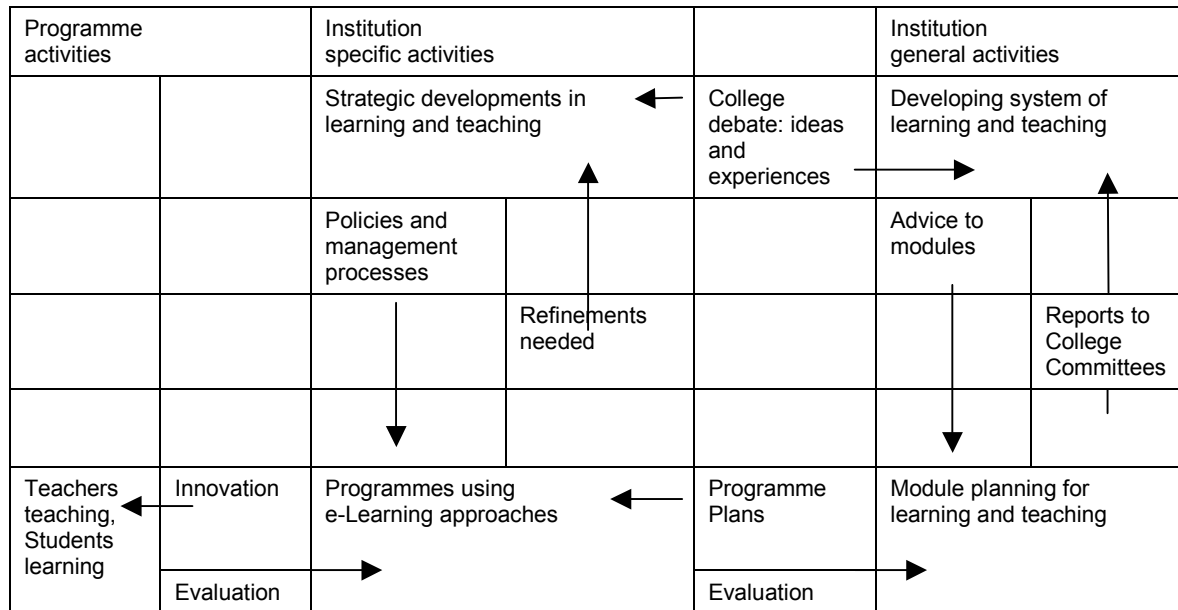
Programme activities		Institution specific activities			Institution general activities	
		Strategic developments in learning and teaching ←		College debate: ideas and experiences →	Developing system of learning and teaching →	
		Policies and management processes			Advice to modules	
			Refinements needed			Reports to College Committees
Teachers teaching, Students learning ←	Innovation →	Programmes using e-Learning approaches ←		Programme Plans	Module planning for learning and teaching	
	Evaluation →			Evaluation →		

Figure 1: The College Conversational Framework for the learning organisation

Adapted from Laurillard, D. (2002). Rethinking university teaching: A framework for the effective use of learning technologies (p. 215). London and New York: Routledge Falmer.

The approach

The evaluative case reported here is a qualitative one which attempts to provide a practitioners view of how the SCenTRLE model, could aid designers of curriculum in approaching their work from a constructivist point of view in order to (a) situate the learning and, (b) improve learners access to and participation in learning in an online environment. Merriam (1998) states that to view the case "as a thing, a single entity, a unit around which there are boundaries" (p. 27) is essential when defining the scope and extent of the description and explanation of the case for the readers. Therefore, the boundary for this case is the instance of applying the SCenTRLE model to curriculum making when working with academic staff.

The case is consistent with an interpretative position where data has been retrieved from discussions of curriculum from the stakeholder perspectives and provides an opportunity to interpret how one practitioner came to a better understanding of, and assessed the suitability of the SCenTRLE model for promoting a constructivist approach for curriculum making. Curriculum making here is defined as intent, design and development. The decision to use the discussions from the main stakeholders as the main source of information from which to apply, understand and assess the suitability of the SCenTRLE model as framework for developing a constructivist learning environment grounds the final interpretation and relevance of the case that others may find useful.

Background 1: Designing for online environments

When designing for constructivist online environments Morrison (2003) states that the "design requires three things: an understanding of the central theoretical principles of a constructivist approach to learning and teaching, an awareness of the extent to which these resonate with one's own values and assumptions about teaching and learning, and some clear ideas and strategies regarding how one translates these into practice" (http://www.cjlt.ca/content/vol29.3/cjlt29-3_art2.htmlI). He draws upon the work of Jonassen and Rohrer-Murphy (1999) to clarify and explains that while there are examples of constructivist learning environments (CLEs) there is little advice on how to design them. Similarly, Hirumi (2002) claims that while there are many frameworks for applying behaviourist and cognitive theories of learning that there is "a dearth of algorithms for creating student-centred and CLEs" (p. 499). He promotes that there is a need to develop algorithms to assist educators in applying "constructivist design principles and to generate, text, and refine strategies that will help transform traditional, teacher-directed methods into more student-centred approaches to teaching and learning" (p. 499).

The discussion on pedagogical practices and what underpins them in e-Learning is evident in the literature (Agawol & Day, 2000; Carr-Chellman & Duchastel, 2000; Combs, 2000; Fowler & Mayes, 2004; Hobbs, 2002; Mayes & de Freitas, 2004; Mioduser, Nachmias, Lahav, & Oren, 2000). Mayes and de Freitas' work is particularly helpful in that it provides a meta-analysis of assumptions about learning that underpin recent frameworks for e-Learning (see, for example, work of Britain & Liber, 2000; 2004; Laurillard, 2002; Salmon, 1991; 2000; 2002; Mayes & Fowler, 2004; Collis & Moonen, 2001; Scardamalia & Bereiter, 1991; see also http://www.knowledgeforum.com).

Background 2: Constructivist learning environments

Staff in this particular context are learning about and articulating implicit and explicit pedagogical practices when considering the move into e-Learning. With this in mind, representations of pedagogy are explored through conversations. Laurillard (2002) calls this *expanding knowledge* — staff discuss and explore information and ideas and create new understandings. Here there was an agreement to ensure a constructivist approach to e-Development. How this would eventuate was the main issue in the curriculum making process.

In the constructivist view of teaching and learning there is an emphasis on achieving a high level of conceptual understanding which is in direct contrast to more didactic and transmission orientations to learning and teaching. To explain further, the constructivist view of learning could be summarized as shown in Table 1.

Table 1: Constructivist view of learning

Learning and teaching	The learner is self regulated Learning is goal oriented Learning is cumulative
Activities of constructing understanding	Interaction with material systems and concepts in the domain Interactions on which learners discuss their developing understanding and competence
Design principles for CLEs	Ownership of task Coaching and modelling of thinking skills Scaffolding Guided discovery Opportunity for reflection

Adapted from Mayes, J. T., & de Freitas, S. (2004). *JISC e-Learning models desk study, Part 2: Review of e-learning theories frameworks and models*. Retrieved June 13, 2005, from http://www.jisc.ac.uk/index.cfm?name=elp_outcomes

In this stage of expanding knowledge it was acknowledged that there are multifarious perspectives contained within the literature regarding CLEs (see, for example, Bonk & Cunningham, 1996; Honebein, 1996; Jonassen, 1991; Wilson, 1996). It was noted that each provides accounts of learner centeredness and the embedding of learning in authentic contexts for the development of conceptual understanding. In developing an understanding of the implications of constructivism for instructional design, the work of Jonassen (1994) was particularly instructive. His eight principles, which follow, are well known:

- Provide multiple representations of reality.
- Represent the natural complexity of the real world.
- Focus on knowledge construction, not reproduction.
- Present authentic tasks (contextualizing rather than abstracting instruction).
- Provide real-world, case-based learning environments, rather than pre-determined instructional sequences.
- Foster reflective practice.
- Enable context-and content dependent knowledge construction.
- Support collaborative construction of knowledge through social negotiation (p. 35).

This very brief introduction to constructivist learning and teaching principles within the expanding knowledge stage provided an orientation for curriculum making that the stakeholders in principle agreed with. However, if we return to the assertion of Hirumi (2002), made earlier in this paper, there still remains within the literature few algorithms that detail the sequence for designing and developing CLEs. It became clear to the curriculum makers that careful consideration of the e-Development was required and that the algorithm presented by Hirumi could be instructive. The next section of this paper attempts to outline the application of Hirumi's algorithm and evaluates its usefulness for curriculum making.

Applying the Student-Centred, Technology-Rich Learning Environments (SCenTRLE) model

Hirumi (2002) states that the "… SCenTRLE model represents an instructional strategy for operationalising approaches to teaching and learning … SCenTRLE consists of eight basic events for facilitating knowledge construction and the development of lifelong learners (p. 509). The following section provides detail of the application of the algorithm for one module within the proposed Master of Arts (Arts Education). The MA contains five modules in total. As stated previously, the overarching aim of the programme is to: (a) situate the learning, and (b) improve learners' access to and participation in learning in an online environment.

Event 1: Set learning challenge

The first event is to set the learning challenge. The learning challenge needs to "situate the learning within an authentic context, describe what the students should be able to do as a result of the learning, and state why it is important for the students to address the challenge" (p. 511). Following is the learning challenge that the programme group developed for the module: Interpreting Contemporary Art.

> … to promote student learning and your own understanding of 20th and post 20th art history and art theory through the application of ideas for professional practice. Explore, analyse, synthesise and make judgements about the interaction between practice (art making) and theory (pedagogy, art history, art theory). As a result you can apply ideas to art education within your context as practitioners in schools or elsewhere. You will explore ideas, pose questions, gather and disseminate information and support your peers in learning. Educators and other professionals seek out varied sources of information such as the library, local galleries and colleagues. This module provides you with an opportunity for professional and personal growth in aesthetic and cultural awareness in order to inform deeply your practice as arts educator (Programme Development Group)

Event 2: Negotiate learning goals and objectives

Here the lecturer facilitates a discussion with the students regarding: "What do you have to know and be able to do to meet the challenge for the course?". After the discussion students are asked to assess their own entry-level skills and knowledge using the course assessment rubric. This rubric is aligned to the learning challenge and enables students to identify their own goals and objectives and at the same time recognize the minimum requirements for achieving the course outcomes. For students who have difficulty in determining their own goals and objectives, the facilitator will recommend readings and or other resources. This last point was considered to be particularly important by the stakeholders, as some of the students would not be use to defining their own learning, as they would not know what they might need to know or understand. There was also some concern that the facilitation skills required a skilled facilitator.

Event 3: Negotiate learning strategy

This event requires the students to answer the question: "How will you achieve each of your learning goals and objectives?". With the facilitator, the students discuss various methods for acquiring knowledge and skills related to Interpreting Contemporary Art. Students email their list of what they think are the best strategies to the facilitator who provides feedback to the individual and a summary to the class as a whole. The stakeholders felt that it was important for the students, who were on the whole practitioners and professionals, to take responsibility for their own pathways for coming to understand. While this would be challenging it would focus the learning around real contexts and provide opportunities for collaboration across the various sectors of professionals who may be involved so that broader perspectives and interpretations could be had. It was noted that this approach would provide opportunities to expand how students understood learning, as many would have experienced more didactic representations of learning and teaching which did not allow for notions of ownership and independence. This would impact on how these professionals applied ideas in their own practice. For governmental and validating stakeholders this was particularly important.

Event 4: Construct knowledge

Here students work individually and in groups to construct their skills and knowledge. This involves problem solving skills and students construct subject-matter specific skills and knowledge. As Hirumi (2002) informs they "actively partake in knowledge acquisition, critical evaluation and knowledge validation that are essential for higher order thinking skills" (p. 516). The facilitator answers questions and monitors individual and group progress. Nervousness was expressed that the facilitator could be perceived as being too "hands off" and that the knowledge and skills required would not be achieved. These concerns are one of the reasons why the module has complementary tutorials that are face-to-face. The stakeholders were worried that the students would not respond to working independently. However, the stakeholders were reminded that the previous events should establish the climate and expectations of the students.

Event 5: Negotiate performance criteria

This event is designed to assist the students in defining performance criteria. The question that is answered here is: "How will you demonstrate that you have achieved your learning goals and objectives?". During discussion session's students negotiate different methods and work samples that will demonstrate achievement. For this module an ePortfolio is proposed as a way to capture the demonstration of performance. In addition students are provided with key performance indicators, which ensures that the students is not left guessing what the facilitator requires. From these they can either develop their own rubrics. Stakeholders were excited about the ePortfolio and that students would define their own performance criteria. They could see applications of this within education and other contexts that would benefit learners more widely.

Event 6: Conduct self, peer and expert assessments

Students are required to self-assess and peer-assess which is a "key characteristic of self-directed, lifelong learners" (Hirumi, 2002, p. 517). The main thrust of this event is to obtain formative feedback on progress. Again, the stakeholders were keen that students participated in these processes.

Event 7: Monitor performance and provide feedback

While Events 1–6 are linear, Event 7 occurs throughout the learning process. The facilitator monitors discussion, provides feedback, answers email and assists students in working together.

Event 8: Communicate results

Students are required to formally communicate the results of their learning. In this module they will develop an ePortfolio, which will contain (a) assessment rubrics, (b) work samples, and (c) narrative descriptions. Students select work samples that they feel best demonstrate their achievement of their goals and objectives. Students present these to their peers for discussion and then the facilitator grades the portfolio based on the course assessment rubric. Criteria and other instructions need to be made explicit to students early in the course. Some stakeholders were not sure whether ePortfolios should be made available to all course participants and wondered whether they should remain private. This was not agreed on and remains a point of discussion.

Conclusion

The SCenTRLE algorithm poses a number of challenges for implementation: (a) application of the eight events as described above within a traditional systematic design sequence as known by various stakeholders, (b) portfolio assessment as a holistic representation of learning, and (c) student attitudes and levels of application. Not least is the concern of fully developing the constructivist ideals as represented in the eight stages, ensuring that the facilitation is competent and that students are provided with appropriate support structures.

As a practitioner writing this case there is an immediacy and relevance to my context, for the stakeholders, the students and even perhaps others who may find that this study resonates with their own circumstances for assisting others in curriculum making for learning in online environments. Beetham (2005) also draws to our attention the need to answer questions such as "how do practitioners currently plan, design and orchestrate learning activities?" (p. 84). This case goes in part to provide insight and evidence in answering this question.

The next challenge will be the fully staged development of the online aspects with the PDG. For the continuing education opportunities to meet the expectations of the stakeholders careful negotiation, collaboration and articulation of the actuality of the intentions is now required. The SCenTRLE algorithm does provide an opportunity to operationalise a constructivist approach to curriculum making. The PDG and stakeholders found the algorithm useful for discussing curriculum making. However, it remains to be seen how the approach will look in practice as Hirumi (2002) noted there were some concerns regarding student prior knowledge, anxiousness on the behalf of students, and the reliability and validity of assessment rubrics in his own field trial. This leaves scope for the PDG to take these issues into account as they develop the module and eventually test and evaluate the algorithm.

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