LEARNING DESIGNS AND THE DEVELOPMENT OF STUDY SKILLS: REUSE AND COMMUNITY PERSPECTIVES

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Abstract

This paper takes as its starting-point the role of reusable learning designs and of practitioner communities in disseminating effective pedagogic practice. The authors note the findings of previous research indicating a gap between teachers' stated intention to reuse others' materials and the practicalities of reuse, and comment on the shortcomings of both Wenger's communities of practice and Hung and Nichani's quasi-communities as models of the types of community that might foster the reuse of learning designs. They suggest that another model is needed to address the 'scaffolding' of teachers into the practice of sharing. To explore both themes, the authors then present an investigation into the reusability of learning designs. This was set in the context of a regional initiative, within the London Borough of Greenwich, to support students' development of study skills through blended learning. Questions raised by the findings include the cost-benefits of adaptation versus creation of one's own learning designs, and the reusability of designs created 'in the abstract.' The authors conclude by introducing the CAMEL model of collaboration as a potential means to overcome the discrepancy between the theory and reality of reuse through establishing relationships of trust mediated by both online and face-to-face communication.

Keywords: Learning Design, Reuse, Study Skills, Communities of Practice, Professional Learning Communities

Introduction

This paper explores the sharing and reusing of learning designs employing LAMS and, to a lesser extent, Moodle for designing and delivering study skills through the medium of blended e-learning. In particular, it considers the gap between the participants' positive inclination towards reuse of other teachers' designs and their actual practice, and considers some of the issues associated with establishing, through community initiatives, a culture of sharing and reuse.

In the UK at least, the reuse of learning designs (that is, whole sequences of learning activities as opposed to individual resources such as images, video clips, handouts and assessment instruments) is viewed as a key means to disseminate effective practice in the education community. This is a multi-dimensional approach that, inter alia, i) works actively to ensure that the design of learning activities is based on sound pedagogic principles and is evidence-based, learner-centred and cost-effective for the institution; ii) promotes the sharing of expertise; and iii) supports the establishment of communities, services and resources to sustain the first two dimensions (cf. JISC, 2006).

While the ability to draw upon repositories of learning designs can (in theory at least) enable teachers and students to tap into global sets of resources and experience a variety of pedagogical methods and cultures, and teachers are generally willing in principle to make their material available to others (Masterman & Lee, 2005b), some key concerns exist. To what extent can a learning design created by one teacher for a specific curriculum and cohort of learners fit the context in which another teacher is working without a major input of effort by the latter? Is there a role for 'generic' learning designs created for a specific curriculum topic, but without a particular group of learners in mind? Previous research conducted by Masterman and Lee (2005b) in three UK universities yielded ambivalent results, with concerns being raised about contextualisation, the inability to represent fully the author's pedagogy within a design, and the fact that some so-called 'designs' function primarily as aide-mémoires to their author and may appear to others as incomplete or incoherent. Put simply, the rhetoric of reuse may connect more with teachers' espoused intention for action than the reality of sharing and reusing resources (cf. Argyris, 1980).

If there is indeed a gap between the principle and practice of reuse, then it has ramifications for the establishment and sustainability of communities to support reuse. At the practical level, these revolve around such issues as providing teachers with learning designs that are relevant to their context, motivating them to 'have a go,' supporting them through the experience and encouraging them to communicate their successes to their peers. At the theoretical level, they challenge the researcher to consider what models of community might inform those practical efforts. In this respect, Wenger's concept of the community of practice (CoP) has proved particularly influential in understanding learning relationships among individuals, the formation of identities and the behaviours necessary to evolve practices. Wenger (2005) identifies three critical factors in a community of practice: sharing similar challenges, learning from and with each other, and interacting regularly.

However, communities of practice tend to be characterised by groups of people who know one another well, have been working together for some time and are bound together by their shared practice and identity. They are usually face-to-face communities, resolving problems and constructing shared understandings through oral conversation, although online communication increasingly plays a part. In contrast, the members of the sorts of communities envisaged in the wide-scale dissemination of effective pedagogic practice may be distributed across a number of organisations, geographically far-flung, reliant on online communication and largely unknown to each other. Moreover, they may be engaged primarily in addressing and resolving specific needs and demands on an ad-hoc basis, rather than working towards a general, shared goal. Hung and Nichani term such communities *quasi-communities*, adding also that they operate through the 'explicit flow of information,' rather than through the 'implicit and explicit exchange of knowledge' as CoPs do (Hung & Nichani, 2002:25). Within Hung and Nichani's conceptualisation, therefore, online quasi-communities *complement* CoPs (these being, presumably, the 'home' organizations of their members); they cannot themselves *be* CoPs.

Although compelling in its account of how an online community for the sharing of learning designs (and, by extension, effective practice) might function, Hung and Nichani's model presupposes that teachers already have both the motivation to participate and the awareness that a particular community can meet their needs. This is not a criticism; rather, it points to the need for an alternative – or additional – model for 'scaffolding' teachers' participation in communities that support their practice, whether these are quasi- or fully-fledged CoPs. We believe that such a model is best identified through an empirical study of teachers' prior attitudes towards, and initial experience of, that practice. The remainder of this paper presents such an investigation: the e-Learning Independent Study Award (eLISA) project, which was funded from January 2005-March 2006 under JISC's Distributed e-Learning Programme.

A collaboration between the University of Greenwich and OUCS, the eLISA project addressed issues surrounding the reusability of 'template' learning designs intended to foster the development of study skills in students in post-compulsory (i.e. 16+) education in an emergent community of schools and colleges in the London area. Specifically, in this paper we use the findings of the project to address the following questions:

1. What can a small-scale developmental study tell us about teachers' perspectives on the sharing and reuse of learning designs, both in principle and in practice?

2. What are the potential implications of these findings for the establishment and maintenance of communities to share and reuse learning designs?

We now set the project in its practical context before outlining the method adopted, summarising the principal findings and considering their implications.

Study Skills and the Background to eLISA

Study skills can be defined as 'the reading and thinking skills requisite to any study task': i.e. those necessary to define, analyse, solve and report on a problem in a disciplined and independent way (Tabberer, 1987). They include listening, reading, planning, essay writing, revision and exam techniques and note-taking (Hamblin, 1981), as well as information skills (identifying, locating, appraising and selecting resources: Tabberer, 1987). The purpose of teaching study skills is best summarised as the 'reinforcement of active learning' (Hamblin, 1981), to prepare pupils for study at a higher level by stimulating them a) to take responsibility for, and control over, their learning and its outcomes, and b) to raise their aspirations (ibid.). Indeed, more recent research has demonstrated a positive relationship between the effective management of study support in schools and colleges and students' academic achievements (see, inter alia, DfES, 2005; MORI, 2004).

The eLISA project was not only set against this historical backdrop; it also addressed a practical need in the London Borough of Greenwich, which has a low rate of retention and achievement in post-compulsory education, a poor track record of vocational training to enable students to progress into employment and low levels of entry into higher education. Enhanced support for study skills was thus considered a particularly appropriate means to tackle this problem. The e-learning environment was selected for investigation for two reasons. First, a previous borough-wide initiative to disseminate study skills using paper-based materials (subsequently put online as a set of Web pages) had barely penetrated the target schools and colleges. Second, little attention had hitherto been paid to regionally-organised strategic enhancements to the development of study skills through this medium, as opposed to initiatives within individual institutions (see the site hosted for students of City College, Norwich, UK at www.ccn.ac.uk/library/online.asp) or popular sites provided by the media (e.g. BBC AS Guru Study Skills at www.bbc.co.uk/education/asguru/studyskills/).

Method

Programme

The eLISA project unfolded over two phases:

1. May-July 2005: Initial development of a set of 'template' learning designs and testing with learners representative of the target population in order to ascertain i) the acceptability of the designs to students and ii) the usability of the learning environments used: LAMS and Moodle.

2. September 2005-March 2006: Training of teachers in the use of LAMS and Moodle from both the learner's and the designer's/author's perspective; development by teachers of their learning designs (either reuse of the templates or creation of their own) and evaluation with their students.

Participants

The principal participants in the eLISA evaluation were:

- School students aged 16-18 in 8 schools in the London Borough of Greenwich, in Kent and a number of adult students in three post-compulsory colleges in Greenwich and North West London.

- Teachers of the students involved in Phase 2.

All of the students and most of the teachers were recruited either through personal acquaintance between teachers and members of the research team, or through the Greenwich AimHigher programme (part of a nationwide initiative to broaden the social base of students in higher education). Two other teachers were recruited through their participation, as students, on a postgraduate course at the University of Greenwich. Teachers received an honorarium of £400 on completion of their part in the project.

Online Learning Environments and Template Learning Designs

The project brief required us to trial the learning designs in more than one learning environment. We chose LAMS on the basis of our involvement in the JISC-funded evaluation of LAMS in the post-compulsory sector (Masterman & Lee, 2005a), and Moodle because it was also open source, easy to use and already hosted at OUCS. However, we were not interested in direct comparisons between the two.

In both phases the target of our investigations was the set of 'template' learning designs (activity sequences) created in LAMS and Moodle by three members of the research team who were experienced teachers. In Phase 1 we tested the designs with students at three specially convened workshops (i.e. outside their normal studies) to ensure that they were useful and enjoyable from the learner's perspective. These workshops were run by members of the research team. In Phase 2, we expected teachers to reuse the designs, with varying degrees of adaptation, by integrating them into their regular curriculum.

Two of the learning designs were intended for the teaching of a general-purpose skill: 'Career choice and development' and 'Writing a personal statement' (i.e. to support the student's application to university). Although these are not in the list cited above, they are nevertheless commonly classed as study skills. The other two learning designs were designed in such a way that they could be used either for teaching a study skill either in the abstract (i.e. as a generic skill) or within the context of a specific subject. These sequences were 'Report/essay writing' and 'Online information skills' (the latter was developed for Phase 2 only, in order to broaden the range of options for participating teachers).

Support for the Emergent Community

As noted previously, the eLISA project had a regional focus, and one of our aims was to establish and support a group of teachers which would eventually evolve into a community (quasi- or otherwise) intended for the sharing, critiquing, developing and reusing each others' learning designs. Central to this aim were three workshops organised by the research team as follows:

- 'Teachers as learners' (October 2005): introduction to LAMS and Moodle, experience of using the environments as learners by working through the template learning designs, group discussion.
- 'Teachers as designers' (November 2005): introduction to authoring in LAMS and Moodle, group discussion.
- 'Show and tell' (February 2006): presentations and reflective discussion of the experience of adapting or creating learning designs and running them with students.

Support was provided both via technology and personal contact. We created a community website containing a forum and links to technical resources, including regularly updated 'FAQ' lists. In addition, each teacher was assigned a personal 'mentor': a team member who was available by telephone and email. Personal visits were also made to individual teachers

who needed more assistance in learning to use LAMS; for logistical reasons, these were carried out solely by team members based in Greenwich.

Data Collection

We opted for a comparatively informal method of data collection in view of the geographical distribution of participants, the limited period available to collect data, difficulties in accessing students directly and the small amount of time that the teachers could be expected to devote to the project. Much of the data was collected in association with events specifically organised for the purposes of the project: viz. the workshops for students in Phase 1 and teachers in Phase 2. However, a proportion was gathered over the period when teachers were developing and their learning designs and using them with students.

The principal data collection instruments were a set of online questionnaires administered through (www.surveymonkey.com), from which information was obtained as follows:

1. Student questionnaires: Students' affective responses to their experiences immediately after working through the learning designs (same questionnaire used in Phases 1 and 2).

2. 'Teachers as learners' questionnaire: Teachers' immediate reactions to using LAMS and Moodle as learners.

3. 'Teachers as designers' questionnaire: Teachers' initial reactions to authoring in LAMS and Moodle, their initial perceptions of the suitability of the template learning designs for their purposes, and their general attitudes towards the principle of reusing learning materials created by other teachers.

4. Teachers' review questionnaire: Teachers' reflections on their experience of adapting a learning design (or creating a new one) and running it with their students.

Data was also collected from presentations by teachers to their peers at the 'Show and tell' workshop.

Findings

Summary of Data on Learners' Performance

Although this paper focuses on the reusability of the template learning designs and the teachers' perspective we summarise here, for completeness, their effectiveness in terms of the learning experience.

Questionnaires were received from 66 students in Phase 1 and 87 in Phase 2, although these figures are considerably smaller than the actual numbers who worked through the learning designs, as some people either left the classroom without completing the questionnaire or exited from SurveyMonkey without saving their responses. Overall, respondents reported increased confidence in applying the relevant skill (90% in Phase 1, 96% in Phase 2), although increases differed among individual designs. A substantial majority of students reported that they had enjoyed the experience: 78% in Phase 1 and 79% in Phase 2.

Teachers in Phase 2 reported high levels of motivation in general and also increased participation by students who were normally less forthcoming. Students' questionnaire responses indicated general interest in the content of the learning designs and recognition of their learning value. Pre- and post-tests by two teachers showed clear qualitative improvements in learners' performance; all other teachers reported that learning outcomes had been met (although they did not state what these were).

Reuse in Principle and Practice

Our formative approach to data collection enabled us to track teachers' experience of reusing learning designs from principle through to practice, through the 'teachers as designers' and review questionnaires. Although a total of 22 teachers embarked on Phase 2, the number of participants declined over the four-month period, and only 10 saw the project through to completion. Data on reuse were obtained from 14 respondents to the 'teachers as designers' questionnaire and 8 respondents to the review questionnaire.

Teachers' attitudes towards the principle of reuse

To elicit teachers' general disposition towards the reuse of learning materials, we presented them in the 'teachers as designers' questionnaire with nine statements to endorse, representing different attitudes towards a) reusing other people's learning materials and b) the reuse of their materials by other people. Table 1 (on the next page) shows the responses, which indicate that the eLISA teachers were favourably disposed towards the practice and were prepared to make their work available to others (note that teachers could endorse more than one statement).

Teachers' stated intentions regarding reuse of the template learning designs

Relevance to one's own circumstances (content, teaching approach and learner characteristics) is a key issue in deciding whether a resource created by someone else is reusable. Four questions in the 'teachers as designers' questionnaire probed the suitability of the template learning designs to the teachers' requirements. Because they were responding to four different learning designs created separately by three individuals, the data cannot be considered homogeneous; nevertheless, they provide some useful pointers. Table 2 on the next page provides a snapshot of the suitability of the content and activities in the designs and shows that the content of the template learning designs appeared more likely to be suitable than the activities designed to support the 'learning' of that content.

Table 1. eLISA teachers' perspectives on the reuse of learning materials

Statement	*No. of respondents endorsing it*
a) Reusing others' material	
It can be helpful to have an existing learning design to adapt.	11
I don't mind seeing what other people have done, but I'd rather create my own from scratch.	5
It takes more effort to adapt someone else's sequence than to create one's own from scratch.	2
b) Reuse of own material by others:	
In principle, I would be prepared to let other teachers use learning materials that I create, but I wouldn't want them to make changes.	2
In principle, I would be prepared to let other teachers use learning materials that I create, and I wouldn't mind if they made changes.	8
I would be prepared to let other teachers use my learning materials, but only with my permission.	3
I don't mind who uses my learning materials.	3
I wouldn't ever let anyone else use my learning materials.	0

Table 2. Teachers' assessment of the content and activities in the template learning designs (N=14)

Rating	*Content: how relevant to teachers' needs?*	*Match between activities in learning design and teachers' own approach: how close?*
Very	1	0
Fairly	7	6

Rating	*Content: how relevant to teachers' needs?*	*Match between activities in learning design and teachers' own approach: how close?*
Not very	2	7
Not at all	4	1

At the time of completing the questionnaire, 11 of the 14 teachers planned to adapt a template design. The remaining three had decided to create their own learning designs, one of them after trying unsuccessfully to map the structure of the existing learning designs to his own ideas. Analysing the supplementary free-text responses we found only two common themes underlying the proposed changes: i) intention to change the content, including links to resources (8 respondents), and ii) intention to add or modify activities (6 respondents). Two teachers, who were working together, planned to drop a 'Chat' activity from the template 'Personal Statement' design so that their students could work independently, but intended to expand the use of the Notebook activity so that students could record their own ideas.

The reality of reuse

Review questionnaires were received from the authors of eight learning designs, two of which were joint efforts by teachers working in pairs. These pairs submitted joint responses, but for analysis purposes each pair is treated as a single 'teacher', identified in this paper by two-character codes. Six of the learning designs were produced in LAMS and two in Moodle. Only three of the sequences were adapted from templates, the others being created from scratch. Teachers creating their own learning design included two who had previously stated their intention to adapt a template. Only in one case did a teacher adapt a learning design created by another teacher. In a subsequent informal conversation with one of the researchers, this teacher [JO] revealed three key factors that influenced her decision: i) commonality of subject (both teachers taught in language-related areas), ii) knowledge of, and trust in, the work of the other teacher; and iii) the learning design itself. In JO's own words:

> The format of the learning design suited me completely. I trusted [BU] very much and reckoned that if it came from her, then it must be good. The fact that I knew [BU] played a big part but the language element was also a major factor in reusing her sequence.

In order to conduct a comparative analysis of the composition of the teachers' learning designs, we converted the activities in the two Moodle designs into their LAMS equivalents. We also disregarded the final activity in all designs, which was an obligatory link to the Phase 2 students' questionnaire. The graphical analysis of designs, shown in Figure 1 on the next page, enabled us to gauge, to a limited extent, the influence of the structures of the templates

on teachers' adaptations. HA's 'adapted' design broadly reflects the structure of the original (albeit with the collaborative component removed), BR's and TR's sequences less so. JO's learning design bears the hallmarks of its origin (BU's design) but with two additional activities. Thus, the influence of the composition of the 'reused' learning designs *may* have been greater than suggested by the data from the previous questionnaire.

The review questionnaire data reinforce the impression that the template learning designs were of mixed utility. Of the three teachers who made their learning designs by altering a template, one rated the original as 'very helpful', the second as 'not very helpful', while the third wrote 'It gave us a focus and a structure but we adapted it significantly to meet the needs of our client group'. These responses mirror the structural relationship between their designs and the templates explored in the previous paragraph.

Four of the five teachers who created their own learning designs found the availability of an existing design either 'very useful' or 'quite useful' (the fifth found it 'not very useful'). This reflects the data from the 'teachers as designers' questionnaire, which suggest that it could be helpful to have an existing learning design to look at when creating one's own.

Community Development

Although there were two instances of teamwork within institutions, there was no sign of the emergence of a cross-institutional 'eLISA community' because of technical difficulties setting up the forum on the community website and the short timescale involved (four months). However, individual mentoring was extensive, particularly with teachers who were less confident in their IT skills and online pedagogical methods. Those who were more confident took an exploratory approach, only contacting the team for support when they reached the limits of the user manual – or their ingenuity.

Concluding Reflections

Since a relatively low number of teachers completed all activities in the eLISA project, we must exercise caution in attempting to generalise from our findings to the broader population. Even so, the eLISA project yielded thought-provoking insights, in bringing to our attention a number of issues associated with the reuse of learning designs and the fostering of communities of 'sharing'.

Implications for the Reuse of Learning Designs

If the respondents to the 'teachers as designers' questionnaire are representative of the population of teachers at large, then in principle at least, attitudes are generally favourable both towards reusing learning materials created by others and towards making one's own materials available to others. The matter is not so clear-cut, though, when it comes to the practice of reuse. The fact that only a minority of the teachers who saw the project through to its completion directly adapted a template sequence does suggest that the espoused desire to reuse is indeed tempered by the reality of making it happen.

The findings regarding the actual usefulness of the learning designs once the process of adaptation or creation was underway are likewise ambivalent. It appears that an existing sequence may be more useful when it serves as a source of inspiration to a teacher creating his/her own sequence than when it is the object of adaptation. However, given the small numbers involved in the eLISA project we cannot draw firm conclusions, but merely suggest that the apparent negative progression from general attitude through stated intention to execution merits further scrutiny.

Figure 1: Structure of the eLISA template learning designs and the designs developed by the teachers

The authorship of the template learning designs – i.e. by individuals not directly involved in teaching students in the target cohort – raises the issue of the cost-benefits of a) creating a sequence solely for adaptation by others (i.e. without a target audience of one's own in mind) versus making available a sequence that has proved successful in one's own teaching, and b) adapting another's sequence. Data from the eLISA teachers in this respect were scant, but pose the following questions:

- Which (if either) is more 'reusable': a sequence that has been created 'in the abstract' and not necessarily tested with a cohort of students or a sequence that has been designed for, and used with, a specific cohort of students?

- Overall, which tend to be more reusable: individual learning objects or complete learning designs?

There was no evidence in Phase 2 of differences in learners' response between 'reused' sequences and those that had been created from scratch. In any case, one would not have expected to find any differences, since in either case teachers can put their own imprint on the structure and content of the sequence. Where one might expect to find a difference, however, is where students are given an 'off-the-shelf' sequence: i.e. one that has not been tailored to their needs. If further research were to demonstrate this, considerable implications would be raised for learning resources intended for delivery to students independently of their teachers, including general-purpose websites intended to help students develop their study skills such as that provided by the BBC.

Implications for Supporting Communities to Share Learning Designs

Data from the eLISA project on the community aspects of reuse are scant, and are certainly insufficient to resolve the issue of whether an online community for sharing learning designs can function as a CoP proper, whether it can only complement the CoPs in members' own organisations – or whether, indeed, an altogether different model of community is needed. However, it can tell us something about the pre-conditions for the formation of such communities, particularly where a community results from external initiatives (such as the strategic push to disseminate study skills in the London Borough of Greenwich) rather than from the voluntary coming-together of teachers who have identified a common purpose for themselves.

The high degree of support requested by the eLISA teachers (only one of whom had extensive prior experience of e-learning) suggests that a considerable degree of scaffolding is required in order to build their confidence, both technically and pedagogically, in their new

practice. Where this scaffolding is unavailable in-house, then recourse must be made to an outside grouping. However, if such a grouping is to thrive and evolve into a community where teachers can share, critique, develop and reuse learning designs in an open and honest environment, then relationships of trust need to be built up such that the teachers who initially turned to it for input and support can themselves share their experiences with, and provide support to, others. We posit that although online communication may be a necessary condition for the successful establishment of such relationships, it remains an insufficient one, and face-to-face contact must be integral to the process.

A promising model for the fostering of such communities is Collaborative Approaches to the Management of e-Learning (CAMEL), which originates in the practices of Uruguayan farmers who visit each other by turns, openly and candidly discussing problems and their possible solutions (Ferrell & Kelly, 2006). The present authors are currently involved in developing a version of CAMEL, whereby teachers from different institutions across the UK will visit one another over a year and, through a social process that includes the 'breaking of bread', discuss and reflect upon the positive and negative experiences of using specific learning designs with their learners (see www.gre.ac.uk/elidacamel). It is intended that online communication will enhance, rather than drive, any emergent community. It is hoped that the CAMEL model may produce the type of rich environment envisaged by the professional learning community that will support learning and shared enterprise through interested participation with others and the integration of effective learning design into everyday practice for all involved.

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