Searching for the ideal networked learning community: Aligning design, delivery and research.

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Abstract

This paper discusses the relationship between the design, the delivery and research into supported-online programmes in Clinical Education at one University. It initially sets the context for the discussion by outlining the pedagogic approach and the design adopted for the programmes, before outlining the action-research approach adopted by the Programme Team.

It summarises the research which was conducted into the programme between 2000 and 2006, which focussed on the quantity and quality of the online discussion which supported the participants' learning. A multi-method research approach was adopted, which allowed the Programme Team to gain insights into some of the aspects of interactivity in the online learning community which emerged.

These insights in turn influenced the Programme Team in the re-design of aspects of the programmes; and the further development of the online delivery of the programmes. As part of a cyclical process - this in turn led to the formulation of further key research questions about the nature of the online debate and dialogue; and the role of the tutors and the participants in the generation and support of knowledge about clinical education. These aspects are the subject of the other two papers in this symposium.

The paper concludes by arguing that alignment between the design process; the delivery method; and the evaluative research of the programmes is essential both for improving the opportunities for learning about clinical education within the programmes, and for generating broader theories and practices which can inform debates about supported online learning in general.

Keywords

Context, design, delivery, research, alignment.

Introduction

This initial paper serves as a background to the other two papers in this symposium. It describes the context for the design & development of a series of supported online programmes in Clinical Education; clarifies the pedagogy and design principles behind the programmes; outlines the research approaches adopted by the team over the last eight years; and reports on the range of results from the research completed 2001-2006. The paper builds on earlier papers delivered both at previous Networked Learning Conferences and in other forums. (Sackville 2002, Sackville & Schofield 2004; Sackville & Sherratt 2006; Sherratt & Sackville 2006a; Sherratt & Sackville 2006b)

The paper argues for, and illustrates, the need to align three crucial components of supported-online programmes, namely - the design of supported-online programmes, the delivery of such programmes and

evaluative research into the programmes. Biggs has emphasised the importance of aligning learning outcomes, methods of teaching and methods of assessment within courses and programmes, and his formulation of this alignment has received widespread acknowledgement within the academic community (Biggs 1999). This paper utilises the same idea of alignment, but extrapolates this to the broader processes of design, delivery and research and considers some of the implications of this for both tutors and researchers.

The Context

Over the last nine years Edge Hill University (in conjunction with the University of Chester and the Mersey Deanery for Postgraduate Medical and Dental Education) has delivered a Postgraduate Certificate in Teaching and Learning in Clinical Practice to a multi-professional group of health care workers who have responsibility for the practice education of their fellow professionals. Whilst this eleven month programme has five face-to-face contact days, it is primarily delivered by supported online learning. This initial programme has been augmented by a Masters Degree in Clinical Education, which comprises modules that examine research into clinical education; curriculum design; mentoring; and e-learning in clinical education. These shorter modules last for 15 weeks, and again are primarily delivered online, although there are two or three optional half-day face-to-face sessions to support the participants. The taught modules in the MA programme are complemented by the completion of a dissertation.

These programmes were "green-field" programmes, that is, they were not based on previously existing programmes which had been taught face-to-face, and as such the designers had more of a free hand in the development of the programmes - not having to deal with the "brown-field" pollution of previously taught programmes! The programmes were also early adopters of the use of supported online learning within the University, commencing initial delivery in January 2000. Indeed the programmes helped the University to define what has since become the SOLSTICE approach to supported online learning, which was recognised by HEFCE in 2005, when it was designated a Centre for Excellence in Teaching and Learning. (Edge Hill University 2008)

The Pedagogic Approach

The pedagogic development and the design of the programmes have been fully described elsewhere. (Sackville et.al.2006). However it is crucial for this paper to outline some of the key components of the programme teams' pedagogic approach, since this sets the context for both the broad action-research approach adopted, and the actual focus of the research. The Programme Team comprised experienced educationalists from either a health or a higher education background, together with learning technologists and learning resource workers. In planning the programme the team were committed to a constructivist approach to the formation and sharing of knowledge. The particular constructivist approach adopted was based on the belief that not only did individuals construct their own knowledge, by interacting with texts and learning resources; but they did this more effectively within a social context. We were influenced by Jarvis, who argued that "a central (constructivist) method is 'real task' which includes discourse and exploration, talking and listening, questions, argument, speculation and sharing, but in which domination is replaced by reciprocity and co-operation" (Jarvis 1998 p73). This led us to adopt a series of pedagogic principles that would shape the clinical education programmes.

These pedagogic principles included:

1. A commitment to active learning. We envisaged discussion and dialogue to be an essential component of active learning. (Brookfield & Preskill 1999). We rejected the transmission mode in favour of a transactional mode of learning.
2. Closely linked with this we wanted to promote collaborative learning (Curtis & Lawson 2001). In the health field it is crucial that educators in the different professions and specialities work with each other - that they identify common problems and devise strategies for promoting learning more effectively within their clinical field.
3. From our rejection of a transmission model of education - we were keen to support and encourage

exploratory learning. We were keen to avoid the "packaged" material" which tended to dominate this particular field of education in both traditional distance education and short day face-to-face sessions.

4. We recognised that in this developing area of education there was a wealth of experience possessed by the practitioners which could be shared, critically analysed and linked to a burgeoning theory. (Boud, Cressey & Docherty 2006)
5. As part of this process it was necessary to both stress the value of reflective leaning, and to support many practitioners in the process of reflection in relation to their clinical education duties. (Moon 1999).
6. We were influenced by discussions of learning communities - particularly the work of Lave & Wenger. (Lave & Wenger 1991)

Initial Design Considerations

The programme team were aware that we needed to design a social infrastructure that fostered learning. We were conscious that as Wenger has argued - "learning cannot be designed; it can only be designed-for, that is - facilitated or frustrated" (Wenger 1998 p229). We can plan to support a process of learning. (Bach, Haynes & Smith 2007). For our programmes we adopted an approach to design which was influenced by cognitive, experiential and socially critical perspectives, where these perspectives "surface in the language that is used to describe educational goals, in the choice of what is to be taught, in the design of teaching spaces, in the allocation of time within the course, in decisions about assessment." (Toohey 1999 p44).

Our first concern was to analyse the needs of our potential audience. This was a multi professional audience, where there was an uneven development of clinical education functions between the various constituent professions and specialities. An initial aim was to provide a maximum of flexibility in the learning activities to allow busy professionals access to the programme. Flexibility in terms of time, location and access were all crucial. (CFL, Macqurie University 2008). At the time of planning the initial programme - 1999 - there was a growing interest within the University in utilising a virtual learning environment - WebCT; and this "new" programme agreed to be the pilot for the wider use of the VLE within the institution. It was hoped that the use of supported online learning was likely to be successful with this particular programme and with these learners.

Using the SOLSTICE approach, an analysis of the needs of our "audience" combined with a clear formulation of the aims of the programme led to the particular design of the programme. Like many similar courses this focussed on both the individual and the social construction of knowledge. The curriculum aimed to link existing educational theory and research to pragmatic approaches to clinical education, which had largely been developed within the practice field. This enabled participants to draw on both previous and current experience, and encouraged their reflection on such experience. It would also lead to a praxis between educational theory and the practice of clinical education

The delivery method was structured around a series of weekly activities, which focussed on the sharing of experience and ideas on the Discussion Board within WebCT. Initially some activities were primarily individually-based (to be shared between learner and tutor), whilst others were collectively based (to be shared with all other learners and tutors). For the first two cohorts there was no overt requirement to complete the online activities, although the tutors shared their expectations of how the discussion board could be used. From cohort 3 onwards (2002) participants were expected to complete at least 70% of the online activities, and reflect on their contributions to the debates as part of the summative assessment of the programmes.

The Research Approach

From the start these programmes have been the subject of evaluative research. Levy has identified that some commentators distinguish between evaluation research and action research, but, like her, we have accepted that our research approach is something of a hybrid of these approaches. (Levy 2004). We would certainly

argue that we have engaged in action-research in the sense that it was defined by Carr and Kemmis:- "*Action research is simply a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out* (Carr and Kemmis 1986: 162).

Like other researchers we have recognised the complexity of the subject we were investigating, and have adopted a research strategy which employs a number of different research methods. This is rather like the mixed methods research described by Creswell & Plano Clark (Creswell & Plano Clark 2007); the "quisitive research approach" advocated by Hiltz in the American Asynchronous Learning Network (Hiltz et al 2005); or the multi-method approach to empirical investigation outlined by De Laat and Lally (De Laat & Lally 2003).

We have set out our current research methodology in a recent paper (Sherratt and Sackville 2007). Here we suggested that there were several layers of data which could be explored. These included :

1. WebCT "Tracking" Data;
2. course evaluation data gathered using nominal group technique and ongoing informal evaluation;
3. analysis of the discussion board postings - in terms of groups;
4. analysis of discussion board postings in terms of individuals;
5. exploring the participant voice (interviews, reflective statements etc);
6. participant observation (ethnographic research).

Each of these layers of data could supply new insights into the ways in which learning was taking place within the online learning community; but rather than simply peeling each layer of data off - it was more valuable to slice the onion - so insights from each layer of data could help form a gestalt of what was actually taking place.

One of the drivers for both formulating the research questions to be addressed, and for adopting different, if complementary research methods, has been the experiences of delivering the programme, and the issues raised by both tutors and learners as the programmes continued. Many times these questions arose out of discussion and debate between participants (tutors and learners). In a sense then the research agenda has been partly determined by the experience of being supported online learners and tutors. But the nature of the material being studied within the programmes (clinical education), has also meant that informed links have been made to wider theoretical and practical research debates which in turn have influenced research questions and methodology.

Research Findings from the Past Eight Years

The paper now turns to a report of some of the main findings from our research with the first six cohorts from the programme, which sets the scene for the two succeeding papers in this symposium, where our current ongoing research is discussed.

Initially, using quantitative data gathered from our first cohort (2000) within the VLE, we focussed on the broad patterns of interaction which were taking place within our online learning groups. By analysing the "tracking" data collected within the VLE statistics package we examined the volume of postings. As starting online tutors we were concerned about the apparent non-participation of some of our learners in not using the discussion board. This coincided with a broader concern within the e-learning community at this time about "lurkers" or "witness-learners". (Beaudoin 2002). We were also able to extract such details as to which online resources had been "used" extensively. But perhaps most significantly we were able to identify different profiles of how our learners used their time. Not only were we able to extract details of when our learners went on line (day, time of day, length of online visit); but how often they used certain online facilities. Of course, we recognised the limitations of this data, and the dangers of drawing too many generalisations from this type of data; but we did become aware of what we have called "the rhythm of supported online learning", which in many instances is significantly different from the rhythm of face-to-face and weekly-contact

learning. This finding certainly influenced elements of the re-design of some of our modules, recognising the need to balance a fairly structured framework for studying clinical education, with individual preferences for how and when to study and participate. This has continued to be an area for further investigation.

This initial data also helped us to identify five different broad patterns of interaction.. As long ago as 1989 Moore had identified three types of interaction: learner <> content or learning resource; learner(s) <>learner(s); and learner(s) <> tutor(s) (Moore 1989). To these three we added two other types on interaction: learner <> technology; and learner(s) <> professional community. Having identified these patterns of interaction, we were again able to incorporate support for these different patterns of interaction into the design and re-design of the weekly activities within our programmes.

Finally from our initial data we noted that five broad types of learners were emerging in the way they approached the programme, and interacted with the materials and with each other. There were three who we labelled "express trains" - often the first to respond to activities, who steamed ahead and who were almost "hooked" on the technology. Secondly there were five "reliable and consistent" participants, who maintained a steady rate of participation throughout the programme, who often initiated new topics for debate, and who genuinely engaged in discussion with each other. These five were complemented by four "slow-starters" who picked up momentum as the programme continued, and by four "slowing-downers" who lost their initial momentum some three months into the programme. The fifth group of four were the witness learners or non-participants, who generally downloaded all the material and rarely appeared online. Again this initial data led us to re-design certain aspects of the weekly activities to try to promote more consistent learners; and it also led us to introduce a two-week induction mini-module on interacting with the technology and becoming an e-learner, which we now deliver in advance of learners commencing their first full module.

The initial quantitative research led us to make adjustments to some aspects of the delivery of the programme to bring aspects of design and delivery more into alignment; but it also raised a further series of research questions about the quality of interaction which was taking place within our networked learning community. Following developments within the broader research field, particularly within the Asynchronous Learning Network, primarily based in the USA, we then embarked on a content-analysis of the postings of our second and third cohorts (2001 & 2002) to identify the differences in the ways learners responded to, and used the discussion board. We used two existing coding systems to analyse the responses. We used part of McKenzie and Murphy's system for examining dimensions of participation (level of participation, structure and type of participation) and interactivity (explicit interaction, implicit interaction and independent statement). (McKenzie & Murphy 2000). This was complemented by using Swan's" affective", "cohesive" and "interactive" indicators (Swan 2001). Although this analysis gave us a number of insights into the ways in which the discussion board was being used we recognised the limitations of simply coding discussion board postings in an earlier paper to this conference. (Sackville 2002).

The first three cohorts had not been divided into smaller groups, but by 2005 (Cohort six), numbers had risen to over 50; and we divided the participants into four "learning sets". As a deliberate strategy we attempted to ensure an even spread of the different health professions in each group, an equitable spread of gender, a spread of experience of teaching and an equitable distribution of participants whose first language was not English. No attempt was made to ascertain and allocate to a group on the basis of experience in the use of computers and previous experience of online learning. We quickly noticed that there was a difference in the volume of postings between the four groups. This prompted us to commence further research to see if we could identify why some groups appeared more vocal than others. We again carried out a two stage analysis. An initial quantitative analysis, was complemented by a qualitative analysis of the postings. This time we devised our own coding scale to classify each individual posting. This has been fully described elsewhere (Sherratt & Sackville 2006a). The coding comprised four categories:

(a) Statement. A closed statement. Not inviting a response or comparison. A position statement.
(b) Limited Response. Refers back to an earlier posting, but only in a limited way. May be encouragement.
(c) Questioning response. Opens up the topic. Expands on ideas. Makes comparisons.
(d) Dialogue. Building on ideas. Taking them further. Introducing new interpretations. Joint problem-solving,

disagreements and disputes.

This coding was again complemented by a second coding which used Swan's affective, cohesive and interactive indicators (see above). In total 2,846 postings from the three modules which comprise the postgraduate certificate were coded. Combining the quantitative and qualitative analysis allowed us to build up a picture of the interaction and style of discussion that had taken place within each of the four learning sets over the whole eleven months of the programme.

Initially the analysis was at the level of the group. One Learning Set (no.4) maintained a high number of postings throughout the ten months of the programme.. Their postings were consistently far greater in the "Questioning response" and "Dialogue" categories of our scale. A second Learning Set (no.1) maintained a low number of posting throughout the ten months; and these were primarily in the "Statements" and "Limited Response" categories. The other two Learning Sets (nos. 2 & 3) tended to reverse positions as the programme progressed. Initially Learning Set 3 was relatively active, and had more of a balance between the four categories of postings; but activity in the form of postings started to decline during the second module. Learning Set 2 started off with a relatively low number of postings; but increased its level of postings in module two and three, both in terms of quantity and quality.

Following the group level analysis, we moved on to a more detailed analysis of the most active Learning Set (no.4). This revealed some interesting variations in individual responses. Even within this "most active" Learning Set we could distinguish between six highly active members and five relatively quiet members. Two of the quieter members could be described as "laggards" - they tended to be the last participants posting to a particular activity. Significantly they were still posting questioning responses, which could have led to an opening out of discussion had time allowed. An analysis of each discussion topic revealed that a number of the Learning Set members tended to act as "peer facilitators" for a particular discussion. Significantly for the group dynamics of the Learning Set - as one "peer facilitator" tired after three or four activities, another would take over. Thus the informal role of "peer facilitator" was spread around six members of the highly active Learning Set. When this pattern was contrasted with the other less active Learning Sets, it was noted that whilst these sets may initially have also had a member playing the role of "peer facilitator", when this person "tired", no other participant took over, and discussion diminished.

In seeking an explanation for these differences between Learning Sets we considered whether a difference could relate to tutor input.. Mazzolini and Maddison investigated this factor in some detail, and concluded that the ways in which tutors post to discussion boards can influence students' postings and perceptions, although not always in expected ways. They suggested that frequent postings by tutors did not lead to more overall student postings, and that the more tutors posted, the shorter were the lengths of the discussion overall. (Mazzolini & Maddison 2003). In our 2006 research we analysed the tutors' postings to the four learning sets, and found no significant correlation between the number and type of tutor postings and the type of online discussion which ensued. However this finding was tentative; and it has lead to current research which is reported in the third paper in this symposium.

The analysis of the most active Learning Set also revealed a dialogue, seven months into the course, between the very active members which engaged in a self-analysis of their own learning behaviour. Here are four illustrative excerpts from this discussion:

> *"I also like the discussion threads which I find are great - you usually find that between us all we manage to cover most of the important points.. I tend to read everything at least twice, once when I "check my mail" and once when I find the time, like today, to spend some serious time working through the activities reading everything as I go" (Participant D)*

> *"It's always a pleasure to read your contributions from whatever part of the world they happen to have originated. It is difficult on occasions to keep up with the reading. I too do 'the quick read' and then another time the 'track the thread from start to finish'. Reading a thread downstream is interesting - it meets a different need" (Participant K)*

"I like the way we can all use humour and also critical thinking/ reflection in this discussion and it enables that. Still, don't feel like any at the moment! But that's another beauty of ICT on this course that we can dip in and out and contribute when we feel like it, when the mood takes us" (Participant B)

"I agree with K about reflecting and then discussing. The time to reflect before participating (not all the time in my own case!) has probably contributed to the well-thought out comments and comprehensiveness of some of the contributions…… I can't claim to have read everything twice like D, but have found reading discussions at the end consolidates my learning. Don't think there's any doubt that we go off at a tangent B, but I think this adds a personal touch and can be educating in its own right" (Participant A).

The level of self-analysis within this group not only provided insights for the Programme Team in modifying some of their induction strategies for later cohorts - but also opened up another research approach, focussing on the actual experience of the learners. This is the focus in the second paper of this symposium.

Whilst all these research initiatives have provided the Programme Team with insights as to what is happening within the online learning community, we have also recognised the partial nature of the research findings, and the potential for advancing different interpretations of much of the data produced. For example, this research has tended to overlook the meanings which participants attach to their use of the discussion board; and the role of the tutor in supporting or inhibiting discussion has also been neglected. It is these two areas of research which are the subject of the two succeeding papers.

Discussion - Aligning Design Delivery and Research

This summary of eight years experience in designing, delivering and researching supported online programmes has been located within an action-research framework. Members of the team who both designed and delivered the online programme have also been extensively involved in researching and evaluating the programme, as have the students who are completing or have completed the programmes.

As a result of the evaluative research, aspects of the design and delivery of the programme have been modified and altered on an annual basis. These modifications have ranged from relatively minor modifications, such as altering the wording of some of the activities so as to promote and support more discussion and debate; to more major changes, such as altering the means of assessment, so that online discussion was recognised and rewarded in some way. Many of these alterations have grown out of discussion within the learning community (students and tutors) as a result of reflecting on the data produced not only by research on our own programme, but by considering related research from similar programmes both in those which focus on clinical education and in those which are primarily delivered by supported online learning. It is important to recognise that these changes are also firmly located in the pedagogic principles which informed both the initial design and the continuing delivery of the programmes.

The debate and dialogue within the learning community (students and tutors) has also led to the forming of new, and probably more sophisticated, research questions which have guided the continuing research. For example - an initial concern with the extent to which learners were interacting with the technology, the content, each other, the tutors, and their wider professional community, modified into a concern about what was actually being said within the Discussion Board. As the Programme Team became more aware of the different forms that debate and dialogue were taking within Learning Sets, the research questions tended to coalesce around why some learning sets were apparently highly "successful", whilst other Learning Sets struggled to maintain an active dialogue online; and why certain students participated in very different ways. Significantly students who might play a relatively minor role in online discussion were still able to produce highly graded assessed pieces of work. Having conducted research into these aspects of group and individual variation, the research question has moved on to a consideration of the role of tutors in facilitating or

inhibiting different types of online interaction.

As the research questions have changed focus - so too have the research methods being used. Initial quantitative methods were supplemented by detailed analysis of archived communications using the Discussion Board. The two other papers in this symposium illustrate how aspects of Learning Set interaction are now being analysed by the Learning Set themselves; and how interviews with both students and tutors are being set alongside the analysis of the archived communications and the numerical data easily accessible within a VLE. The research questions and the research methodology increase in complexity as more experience is gained from both the design process, and the delivery of supported online programmes.

It can be argued that this account has demonstrated the close alignment between the design process, the delivery process, and the evaluative research of the programmes. But it would be wrong to convey the impression that the programme team were in any way complacent about what they have achieved. They have recognised the need to bring in other researchers to support their own research - for example a cultural anthropologist has been engaged in the process of participant observation of one of the modules. They are also conscious of the continued development of communication technology which also has to be evaluated and, where appropriate, incorporated into the delivery of the programmes. The principle of alignment both within the programme itself; and between the broader activities of design, delivery and research remains a guiding principle of our academic work.

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