

A participatory design approach to the development of online tutor training materials: A case study from China

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The role of the tutor in online learning can be complex due to the wide range of media and pedagogies that can potentially be used. As a result there is a need for effective training materials that recognise this and the Sino-UK eEducator project aims to meet this need. This paper reports research into the participatory design approach adopted within the project. Ten potential users of the final eEducator training module are involved in the design process. Reflective journals and interviews have been used to collect data regarding the ways they work with other academics and learning technologists. The paper describes the process, the similarities participants share and problems they confront in this project.

Keywords: participatory design approach, collaboration, eEducator training

Introduction

Learner-centered approaches play an important role in teaching and learning. These approaches are central to China's Curriculum Reform in Basic Education (2001-2010), which aims to meet learners' needs, consider learner differences and support learners in taking a responsibility for their own learning. One would imagine then that in teacher training teacher differences and needs would be considered, learner-centered approaches would be adopted and learner autonomy would be promoted. However, it is often quite a different picture. Diaz-Maggioli (2004) points out that globally there are some constraints in current professional development practices. Teacher training often adopts a top-down model with a few experts deciding upon what teachers need to know and how the training should be delivered. As a result the most common form of teacher training is the short or longer-term course in which teachers pass on information or teaching methods they have learnt with the aim that this will change classroom practice (Clark, 1989). This is especially true in both mainland China and Hong Kong. Teachers have little if any ownership of the training process and are likely to be passive recipients of this. Teachers are not allowed a participatory role in making decisions related to the content of their studies or of the ways their training is delivered. There is a case for involving teachers more fully in the design process, after all they will have a very real understanding of what their needs are and of the practicalities of the proposed learning experiences in relation to its impact on their practice. There is also a case for developing an understanding of the participatory design process in order to improve its effectiveness.

This paper reports such research and begins with a review of the processes itself and the context in which the research was conducted – the development of an online tutor training module for use in China. This is followed by a description of the research approach taken to illuminate the participatory design process. The last section discusses the major findings of the research and its implications for future developments.

The participatory design approach

Participatory design (PD) originated in Scandinavia (Schuler & Namioka, 1993) in the 1970s. It started in the field of computer software design, but similar approaches have been used in other fields as well (Silva & Breuleux, 1994). Participatory curriculum development (PCD) in higher education has been promoted by Taylor (2006):

Today, particularly with an increasing interest in experiential and learner centred education, learners are encouraged to take responsibility for their own learning. At the same time, there has been some recognition that teachers and trainers should have an input into what they teach as well as how they teach it. Still, curriculum development has tended to remain the responsibility of a few, an elite group located at the top of a hierarchy. The idea of other stakeholders having a clearly identified role in curriculum development is rather uncommon.

This idea of involving different stakeholders in curriculum development serves the purpose of enabling the users of a curriculum to take responsibility for their own learning experience, through participating in the design. Axup (2006) points out that PD has a very strong advantage:

Co-designing with real users in realistic situations and environments helps improve the quality of feedback users provide. Frequent iteration between users and designers reduces misconceptions designers make (in part due to insufficient domain experience).

Understanding users' needs, their preference, their problems and confusions can only be achieved by frequent and profound communication between designers and users. The role of the expert "is changed from that of an expert to that of an equal participant who happens to have expertise" (Carmel, Whitaker & George's research, in Silva & Breuleux, 1994:103). They need to listen to the users' voice and not just take for granted what users may like and have to know. There is a need "for designers to take work practice seriously—to see the current ways that work is done as an evolved solution to a complex work situation that the designer only partially understands" (Greenbaum and Kyng, in Winograd & Kuhn, 2006).

There is a need for users' work experiences to play an important role in the design process and should be highly valued. However, Axup (2006) also points out that there are several pitfalls of PD:

- Participants are usually not trained designers. Consequently they can produce bad designs or feel uncomfortable doing unfamiliar design activities.
- If participants are asked to start from scratch, it will be problematic. They work better with some scaffolding to direct design ideas.
- Users may not be willing to devote time to help build technologies that other people profit from. A key challenge is determining how to interest or motivate participants to help build a product they may not use, and which may be years from production.
- Using a small sample of participants runs the risk of one user being an outlier with unrepresentative concerns. These participants can provide useful challenges to the design, but they should not drive it.

The PD process itself tends not to be the focus of research. What happens during the PD process and what factors influence people involved in that process needs to be researched if the process is to be more fully understood and any benefits for learning design maximised. This paper reports on such research.

Research background

The context for the research is the eChina-UK program, which is a British-Chinese collaborative eLearning initiative, funded in the UK by the Higher Education Funding Council for England (HEFCE) and the Ministry of Education (MoE) in China. The eChina-UK projects under this programme aim to collaboratively develop innovative eLearning teacher training materials for teachers (at secondary and tertiary levels) in selected subject areas. For further information about the programme, projects and partners see <http://www.echinaprogramme.org/>.

Within the program there was recognition of the importance of the online tutor within eLearning and of the need for effective training. This training needed to engage tutors in understanding their roles in the complex online learning environments in which they would be supporting students. This resulted in the eEducator project, funded by HEFCE. The aim was to develop a generic module that would meet this need. This involved a collaboration between the University of Nottingham (UoN) and Beijing Foreign Studies University (BFSU) A PD approach was adopted within the project and this involved academics, tutors, learning designers and technologists in the collaborative design of the module and the training materials. The hope was that the PD process would ensure that the future users' 'voices', the tutors, would be 'heard' and their working experiences respected.

Research design

Research questions

As a member of the design group, the author of this paper participated in the process of designing online curriculum materials for the tutor training module. During the process, the author experienced dilemmas as did her colleagues. The research set out to explore these and their influence on design. The main research question was: What are the factors that influence eLearning design in the participatory design process?

This can be broken down into the following sub-questions:

- 1 How do the different professional groups work together in eLearning design?
- 2 What cultural differences (i.e social culture subject/professional culture etc.), if any, affect online learning design?
- 3 How do people's beliefs about teaching and learning influence their design of the online teacher training course?
- 4 What kind of roles do people play in the team work?
- 5 What is the benefit or influence in involving future users of the course in the design process?

Subjects

There were three groups of participants involved in this research:

- Group 1 – Six academics
- Group 2 – Three learning technologists
- Group 3 – Ten potential users of the course

In selecting these participants, the UoN project team requested the BFSU team to involve people who would be potential tutors for MA ELT online course developed by UoN-BFSU within eChina-UK program. This course intentionally includes a variety of self study, cooperative and collaborative activities and as such represents a challenging learning environment for both students and the tutors. Those selected as project tutors were a representative example of those who would be acting as tutors on the MA ELT. They had at least an MA degree and were from a number of representative regions/cities. Ten volunteer tutors who met these requirements were selected: from 4 regions of China, four from Beijing (Northern China), two from Guang Zhou (Southern China), two from Xi'an (Western China) and two from Shang Hai (Eastern China).

These project tutors were involved in:

- A four week orientation program working as online learners as a means of introducing them to the project and to some online examples from the MA ELT course
- Online collaboration with academics and learning technologists to develop the eEducator materials (from March to December, 2006)
- Face to face collaborative materials development at two four-day residential workshops in Beijing (March and August 2006)
- Supporting research into the participatory process of developing the materials through providing data by taking part in interviews and keeping reflective journals

Research methods and data collection methods

This research uses a critical incident approach (Tripp, 1993). According to Tripp:

...the vast majority of critical incidents . . . are not all dramatic or obvious: they are mostly straightforward accounts of very commonplace events that occur in routine professional practice which are critical in the rather different sense that they are indicative of underlying trends, motives and structures (pp. 24-25).

Therefore, critical incidents:

...are not 'things' which exist independently of an observer and are waiting discovery . . . but like all data, critical incidents are created. Incidents happen, but critical incidents are produced by the way we look at a situation: a critical incident is an interpretation of the significance of an event (ibid., p. 8).

During the participatory design process, UoN team and BFSU tutors were divided into five groups, each containing academics and tutors. One group contained only Chinese academics and tutors, the others were mixed British and Chinese – where communication was in English. Technical design support was shared amongst groups. The groups began their work at a face-to-face workshop in Beijing, using rapid prototyping tools to demonstrate and discuss their pedagogic ideas. After the workshop, they collaborated in their small groups at a distance to produce further materials for the module. At the end of this first phase (from February to August) another face-to-face workshop was organized in order to share and evaluate the materials developed thus far and to explore ways of working to illuminate the benefits and challenges of PD. Both workshops were audio recorded and monthly reflections from all involved were collected. Team members were requested to identify critical incidents – events that were significant in relation to ways of working, developing understanding etc. Data collection started from February and finished in August 2006, which was the first phase of this project. The outline of this phase and data collection plan is shown in Appendix I (obtainable from the author).

The research began with the collection of background information from the project tutor participants and the UoN project team members. In addition their beliefs about teaching, learning and e-learning were elicited through the use of individual interviews and a questionnaire. The participants in China were from different parts of China, therefore, they were asked to complete a questionnaire before the first face-to-face workshop. Issues that needed further explanation were identified from the questionnaire and participants were interviewed at the first workshop.

Secondly, all small group discussions in the first and second face-to-face workshop in Beijing were audio recorded for research purposes. Every person who was involved in the module design provided a post-workshop reflection about critical incidents during the workshop. The recordings were transcribed and used to triangulate any critical incidents mentioned by group members and identify more critical incidents by the researcher.

Thirdly, every member of the design team (including the UoN team and project tutors) was asked to keep a monthly reflective journal to identify critical incidents that happened each month. The researcher followed up any ambiguous information via face-to-face interview and email to clarify issues. The researcher identified factors that arose that influenced the design process and the materials within each home group from the reflective journals. Each home group was interviewed at the second face-to-face workshop and the end of the project (as part of phase 2 of the research) in order to provide opportunities to verify the data and stimulate more reflections from the participants.

Findings for phase 1

This is the report of the findings from the first research phase, which will inform the second phase of the research. In the following, names have been converted to letters and numbers so that the participants' identities are protected. Groups are identified as A, B, C, D, and E. The members in each group are numbered as A1, B2 or C3, etc. The technologists are known as T1, T2 and T3. The critical incidents identified in this research and the reflections of the participants are the major data used to analyse factors that influence the PD process.

Participants' major concerns and difficulties in collaboration

The major concerns were time and communication. Most of the participants were very busy with their own daily work and have many responsibilities. They found it hard to allocate enough time to the project.

One is about time. I have much work to do in my institute and it is difficult to find time to do this project. (D4)

Both the academics and tutors have their full time work on top of this project, not to mention other tasks such as conducting research and writing papers and some of them are executive leaders in their school or department. It is indeed very difficult for them to spend enough time on the project. As for communication within groups, most of them were concerned that email was not adequate for the kind of communication that was needed considering the nature of the project. They were not sure whether effective cooperation could be achieved through online asynchronous communication. One of the groups strongly felt email communication to be problematic as little had been produced through the occasional email exchanges in his group.

Sometimes, ideas could not be well expressed through language written down. We may need face-to-face communication, or talk to each other. (E4)

This is a small incident but it is critical because none of the project members had realized that language could be a problem for these tutors. Although their language proficiency was relatively high, it seems that language is still an obstacle for communication. It is obviously easier to communicate orally but not so easily in written language.

As it was mentioned previously, the members in group C were all Chinese and communication seemed to work very well in this group. They were the only group to use Skype to conduct voice chat online each week. The following quote seems to indicate that the combination of a shared language and synchronous chat supports collaboration. "We found that online contact is of little difference from face-to-face contact." (C3)

However this may not be just a language issue. There may be cultural and power/authority issues affecting the activity in the other groups. The coordinators in the other groups were all senior UK academics while the coordinator in group C was of similar status and age to the group members.

Ways of working within groups

The academics seem to be put in a position of leading the material design.

I am very much placed in the position of leading yet I am not taking the leadership role for two reasons: first, that I am still wanting to work collaboratively; secondly, due to time. On the latter, I could email more often and/or suggest other ways of working using the technology without dramatically increasing my time input but there is the sense that I didn't want to push too much. I finish the month with a group member suggesting I push more! (A1)

Most of them did not want to be in that position because they wanted true collaboration. However, the reality was if they did not draft something, ideas were not agreed or moved on. It appears that someone needs to be the secretary and organize ideas into a prototype before others can comment on it. Nevertheless the notion of collaborative activity was problematic within the PD process. Collaboration brings with it the notion of everyone needing to contribute 'equally', but how this is interpreted by each individual in a group is critical. The interviews with all the BFSU (Chinese) tutors after the second workshop revealed that they were happy to give their critical comments on a prototype and that they considered this to be "true collaboration". On the other hand, UoN (British) academics seemed to believe that each should contribute equally to ideas in the first place and only this can be considered as "true collaboration". However the ability of the Chinese tutors to contribute initially was not affected by interpretations of the 'collaboration' but more to do with their unfamiliarity with the themes they were working on. Each group was responsible for one theme related to tutor training and when BFSU tutors

were divided into groups they were assigned into the group. They were not given the choice of theme because each theme needed to be developed and the UoN team were worried that some themes might not be chosen if tutors were given the right to choose. In addition the UoN team argued that as the five themes are all related to tutor training, the tutors would be bound to be able to contribute to them and develop an interest during the design process. The reality was that those who were put into a theme with which they were unfamiliar were less confident and worried about their lack of expertise.

As I was assigned to the Evaluation (Assessment) Group, I was worried about my lack of the knowledge in Testing and evaluation. Therefore, lots of reading needs to be done in the field to understand and then contribute to the development of the project. ... In our group of three, obviously A1 plays the role of manager and source of expertise; I am myself contributing my comments and understanding of relevant issues. And this might be the most appropriate at this stage, for A1 does have the most expertise and experience in the field of evaluation. (A3)

Others mentioned in the interview that they had to spend a long time brushing up their knowledge before they could actually contribute significantly to the material design process. One tutor was not at all interested in their theme and she was de-motivated. This indicates that "True collaboration" may need an equal sense of ownership in the decision making process if there should be collaboration in the design process – the choice of academic theme is perhaps more important to a beginning academic than an experienced one.

Another factor that seems to affect the quality and type of contribution is personality. Some of the participants perceive themselves to be passive. For example D3 always waits for instruction/order from his group coordinator. He calls himself a dependent person, waiting for orders. If nobody asks him to do anything, he does not take the initiative. E3 also does nothing because she doesn't feel much pressure from the group members.

I am a more or less dependent person, waiting for instructions. Almost nothing new has come to me (this month) about the design work. No specific orders. ...I didn't receive any orders, no instructions, and I myself was not active enough. (D3)

To be frank, I tried to allocate at least half an hour the first few days after the workshop looking for and sorting reading materials for ideas. But along with the deadline of other tasks, especially those unexpected, I put the project aside because I didn't feel much pressure from my group members. (E3)

This is unlikely to be a cultural difference issue. What is clear is that peer pressure and tighter action plans might have helped involve the tutors more effectively at an early stage. However each group did try this approach.

The third factor that influenced the behaviour of the tutors might have been how the participants viewed their roles within the project. Interviews with BFSU tutors indicate that most of them were not very clear about their roles. They saw themselves as tutors who had some online teaching experience and who therefore could evaluate critically the materials produced by the UoN team by offering their valuable experiential knowledge. This was a critical point in the project as it was at this moment the UoN team realized that the tutors had not been informed fully about the project.

Similarities and differences

Most participants believed they shared similar beliefs about online teaching and learning in general, but when it came down to specific ways of presenting the materials disputes arose.

We share some similarities about some basic principles about effective online learning and tutor training, but we may have very different ideas for some specific ways or processes, because we come from either different cultural background or online work experiences. Everyone would have his or her own understandings. In our group, when we came to the metaphors to be used, I personally would prefer to choose some more typical Chinese

symbols, but I found the British academics would like to have their western symbolizations, like the pumpkin, the birds, and etc. (D3)

The choice of symbols and images reflects the designers' perspective of teaching and learning as well as their understanding of the target culture. The difference in this incident shows that careful study of metaphors in different cultures when working inter-culturally is necessary. Some of the BFSU tutors thought that the UoN team needed to be more familiar with the Chinese context, especially the way Chinese learners learn.

It turned out that the awareness of China's unique education atmosphere was somewhat inadequate, e.g. What would be the most benefited target group of this project? What strategies would be best applied to the selling and marketing of the course? Cultural differences had been another gap in the cooperation process. I tried my best to work as a "bridge" during our home group discussions. ... the main gap was the different ways in thinking, the Chinese way and the British way. (B2)

This tutor believes that Chinese and British have different way in thinking. This is proved by one incident in her group. At one time, they try to organize ideas into different levels. The UoN member wants to discuss about the details of how they might present the start so that they can gain the attention of the learners right from the beginning, while another member (the Chinese member) prefers to consider the overview first before going into details. The third member reflects that:

It seemed to me that both B1 and B3 were trying to persuade the other with his own ideas, both were strong people, I felt if I wouldn't do some coordination work, the two would certainly break up and quarrel. Either of them was correct, they were just looking at the same thing from different perspectives. B1 would like to look at specific things first, while B3 would approach things from the general point of view. Finally B1 gave up and we all followed B3's way of thinking. (B2)

In a later interview, B3 said he found it difficult to understand the British way of thinking at the beginning but later he was getting used to it slowly. The work within this group was getting smoother. Successful collaboration very much depended on the willingness of the group members listening to each other and being ready to compromise.

However, some participants felt that the difference was not necessarily a cultural one; rather it is the difference of personality or personal preference of ways of thinking.

I was left feeling that the bigger differences were not so much due to the cultural perspectives of the UK and China being at odds, rather that the emphasis of the way I was thinking in terms of developing the materials was different to much of the current practice... (A1)

Differences in the team seemed to come from personality - not culture or academic beliefs. (D1)

It is true that every single person is different. Some have much stronger personalities than others. The way of tackling things is also different from person to person. It is therefore important to develop a certain degree of trust and sense of belonging within the group. This helps to smooth the relationship among group members and enable them to work better

Role of technologists

As already mentioned, one of the strategies used in the project was to produce rapid prototypes so that ideas could be visualised and shared. One critical moment for the whole team was when they were presented with rapid prototypes of their ideas at the first workshop.

The 2 presentations were important– there was a real sense that we were achieving something as a small group and collectively. This helped motivate the group and it set tight deadlines for developments. (B1)

When we all saw the mock up, this showed us all what the potential might be. I think that this is where the technical involvement in the process can be critical in moving things on. (A1)

They listened to our ideas and T3 helped to develop the rapid prototype. He was very quick and the rapid prototype helped us to see our ideas visually and it was what we wanted. (C1)

This illustrates the importance of involving technologists as much and as early as possible. Academics and tutors are not necessarily experts in technology. They need technologists to show them the possibilities of what technology can offer and to help them try out ideas. What's more, technologists need to be open to new ideas, to listen, and to offer their suggestions. In this way, pedagogy can lead the development of technology and technology can enhance pedagogy.

In the first workshop, technologists were invited into each group after their initial group discussion to listen to their ideas so that they could help to develop these into a rapid prototype. Most of the participants mentioned that the technologists were very patient and supportive and that the level of creativity was astonishing.

They would have been more helpful if they had been invited to join the activities of the home groups.... because their suggestion might save much time spent discussing the layout of the web page. For example, once B1 thought hard on how to arrange the web page, but a few words from T1 (one of the technologists) made every thing clear. (B3)

The very act of having them in the workshop sessions is till now most effective in this cooperative project of ours. With their help, I have come to realize that technology can actually do much more than I can imagine. (A3)

Influence on participants

It is still too early to see any strong influence on participants. However, some of the tutors have mentioned in their reflections that participating in the design process has already started to influence their work and thoughts. A critical incident reported by B2 describes how she was inspired by her group member B3's idea. B3 developed an efficient way to help his learners to handle their workload and study appropriately. This stimulated B2 and she tried out similar things with her learners and unexpectedly obtained a high number of positive responses from them. Another participant D3 happened to be in a theme which was rather new for him. He found the theme valuable and wanted to integrate it into his own tutoring. He developed a much clearer understanding of the theme through wider study and than wrote an academic paper for a journal.

These examples show that participating in the course design process not only helped the online tutors to improve their teaching but also supported them in becoming "teacher researchers". They not only contributed to the design process but also were stimulated by it.

Conclusion

The results from phase 1 of the research have already shown an interesting and dynamic picture of collaborative group work using participatory design approach. Some participants have expressed concerns about the final product, the need to make compromises and avoid conflict may "result in a lesser quality and product" (D1). However, in China and in the UK there is a saying: three heads are better than one. The compromise people make is not necessarily a sacrifice; on the contrary, it could turn out to be a better choice/decision. In phase 2 of the research, comparisons between groups and activities (face to face and online) using activity theory (Engeström, 1987) will be drawn to illuminate influences on ways of working in groups and the influences on the pedagogic outcomes.

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Bionotes

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