Chinese higher education teachers' conceptions of e-Learning: Preliminary outcomes

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Over the past three years, the Centre for Studies in Advanced Learning Technologies, Lancaster University, and the School of Network Learning, Beijing Normal University, have been involved in the development of e-Learning courses and in carrying out research into e-Learning. During this collaboration, we became aware of cultural differences in our approaches to the design and implementation of e-Learning courses. This led us to consider the differences and similarities in our conceptions of e-Learning, and their effects on the design, development and implementation of e-Learning courses. A new comparative research project looking at UK and Chinese higher education teachers' conceptions of e-Learning was established. This paper reports on preliminary results of phenomenographic interviews with higher education teachers in China working in 'conventional, campus-based universities concerning their conceptions of e-Learning. The interviews were analysed from a grounded theory perspective that resulted in a set of preliminary conceptual categories namely the centrality of the lecture, online cooperative learning, network learning, student learning, and infrastructure and access. Discussion of these categories is presented which illuminates the state of e-Learning in Chinese higher education. We conclude that the dominance of traditional teaching methods in China is unlikely to present the conditions for mainstreaming e-Learning in the near future.

Keywords: conceptions of e-Learning, phenomenography, China higher education system, student learning

Introduction

The UK Higher Education Funding Council has funded a series of inter-related projects in what has now become known as the eChina-UK Programme. In Phase One of the programme there were two main objectives. The first was to foster collaboration between UK higher education institutions and Chinese higher education institutions in the production of Masters level courses using e-Learning for school teachers in China. This involved us collaborating with Beijing Normal University in the joint production of a Masters level module in "Educational Technology and E-Learning". The second objective of the programme was to develop understandings in both countries of cultural change and exchange in e-Learning pedagogy. Members of the various UK project teams (of which there were four) held different views on the importance of this second objective, as did the Chinese partners.

The UK team involved in the production of the "Educational Technology and e-Learning" module, however, believed that this objective was as important as the production of the Masters level modules, if not more important. Our experience of working with colleagues in China made us aware of the complexities of culture and cultural differences in the collaborative production of the Masters level module. We were presented with real challenges related to working across boundaries. The additional problem of language played a decisive role in our negotiations and understandings of what we were trying to achieve. Nevertheless, we did not lose sight of the wider objective of trying to understand culture and cultural change and exchange (see Banks, Lally, Liu, McConnell, 2006, for an examination of our experiences of the processes of intercultural collaboration).

From our work to date in Phase One of the eChina-UK Project it has become apparent to us that we have to develop a shared (that is, 'intercultural') understanding of pedagogy (teaching, learning, e-tutoring etc) if we are to be successful in collaboratively developing e-Learning materials and in generating successful professional educational development in e-Learning. Although 'intercultural' in this context primarily refers to the 'large' Chinese-British cultures, it can also refer to 'smaller' cultures that exist in both countries.

This is a complex process in which our ideas and understandings of terminologies, issues and practices have to be constantly discussed, revisited and renegotiated, and in which new understandings emerge as we proceed. In an intercultural setting such as this collaborative Sino-UK e-Learning project, we are aware that the ideas underpinning the two different cultures of China and the UK distinguish each of us from the other (Dahl, undated). For example, in working together and being exposed to these different cultures we have become more aware of our own teaching and learning culture in the UK and that of our colleagues in China. We have started to understand this process, but much remains to be done. We call this "Intercultural Professional Development", and an in-depth, critical examination of it is the focus of our combined work in Phase Two of the Programme. The results of this new project will be of direct benefit to both UK and Chinese higher education systems by making use of the synergy of ideas and resources available in joint project developments. In Phase Two, we have agreed to carry out research aimed at developing our understanding of intercultural e-Learning pedagogy as the core of the project work.

Examining intercultural understandings

The examination of intercultural understandings is being carried out in two ways:

Firstly, and most importantly, we are examining intercultural understandings of e-Learning by the joint Sino-UK development of an online course in intercultural e-Learning pedagogy, designed to allow UK and Chinese higher education staff to explore differences and similarities in their understanding of e-Learning pedagogy and to collaboratively develop new shared knowledge about teaching, learning and tutoring in e-Learning contexts. The content of this course is to include learning material designed specifically to facilitate collaborative intercultural exchanges which will illuminate different conceptions of e-Learning. We also plan to develop and evaluate new pedagogic methods and tools to support formative assessment (knowledge extraction and analysis).

Secondly, intercultural understandings are being examined by comparative research into UK and Chinese higher education teachers' conceptions of e-Learning. This is the focus of this paper. We have developed a methodology for doing this based on existing research into teachers' conceptions of teaching and learning.

There are two important elements underpinning this work:

Conceptions of e-Learning
The first important element is the area of research interest, which is concerned with examining teachers' conceptions of e-Learning and e-teaching.

Considerable research has been carried out into students' conceptions of "conventional" (that is, face-to-face) learning and into teachers' conceptions of "conventional" teaching (e.g. see Entwistle, 2005; Entwistle and Walker, 2000; Kember, 2000; Kember & Kwan, 2000; McConlogue, 2003; Pratt, 1992). This research indicates that conceptions of teaching may have a bearing on the ways in which university staff carry out their teaching.

Entwistle (2005) suggests there are relationships between teachers' conceptions of teaching (including their beliefs about teaching), their approaches to teaching (which may be, for example, teacher focused or student focused) and their level of understanding about teaching (that is, their knowledge about teaching and learning and their experiences of teaching methods). All of these influence teachers' understandings of student learning and impact on their relationship with a class. An understanding of teachers' conceptions is therefore likely to help in the process of understanding and improving teaching (Prosser, Trigwell and Taylor, 1994).

As far as we can tell, no research has been carried out into the more specific area of higher education teachers' *conceptions of e-Learning and teaching*, in China or the UK, which is the focus of this study. We think this is an important area for research. The findings of research into conceptions of "conventional" learning and teaching have been used to help university teachers and professional

developers understand the ways in which students approach learning and the ways in which teachers approach teaching, and these understandings have been used to change and develop practice. We expect research *into conceptions of e-Learning and e-teaching* to lead to similar useful outcomes. In the context of this study, we are interested in how Chinese higher education teachers think about e-Learning, how they go about planning for e-Learning and how they integrate e-Learning into their practice.

Phenomenography
The second important element underpinning this research is the methodological approach adopted in carrying out the research. A phenomenographic approach was chosen in which we focused on identifying and describing the qualitatively different ways in which people understand phenomena in the world around them. Phenomenography (Marton & Booth, 1997) suggests that we are guided in our actions by the interpretations we construct about particular phenomena. The improvement of complex phenomena such as e- teaching and e-Learning requires an understanding of the interpretive nature of this relationship.

The eventual aim of this research project is to produce four sets of analyses of Chinese and UK higher education teachers' conceptions of e-Learning: one examining Chinese higher education teachers conceptions; one examining UK higher education teachers conceptions; the third providing a comparative analysis of the two; the fourth examining how we can use these understandings of teachers' conceptions of e-Learning to help improve the teaching and learning processes in both countries.

In this paper, we report on the results of the interviews with Chinese higher education teachers who work in "conventional", campus-based institutions. We examine the ways in which these teachers think about e-Learning and e-teaching, the beliefs they hold about their "e" practice, the ways in which they implement e-Learning, the problems they face in incorporating e-Learning into their courses and the ways in which they perceive e-learners.

Methodology

Our research approach was based on existing research methodologies which emphasise a phenomenographic stance to the elicitation of teachers' conceptions of teaching and learning (for example see Prosser, Trigwell & Taylor, 1994; Roberts, 2001) followed by a grounded theory approach to data analysis and the development of categories of conceptions. We interviewed 24 higher education teachers in China. Our contacts in China provided us with access to these teachers, and we approached them via email or telephone to seek their participation in the project. The interviews were aimed at examining the phenomena of e-Learning from the perspective of each individual participant. Those interviewed were all involved in promoting or developing e-Learning in their higher education institution: they were e-Learning teachers, staff developers, researchers, e-Learning specialists and the like. The selection of participants was very important as we wanted to be sure that all interviewees had direct experience of designing and running courses that use e-Learning in one way or another so that they could talk knowledgeably and in depth about their experiences. By e-Learning we mean the use of digital devices such as computers, the Internet, the Web, Virtual learning Environments (VLE's), hand held devices and so on to organise or carry out learning and teaching.

This paper considers the preliminary results from the interviews of higher education teachers in China.

The interviews

In this second order perspective, we view conceptions of e-Learning to be at the interface between an individual's practice and the particular context in which they are working. Conceptions are therefore likely to be dynamic (Prosser, Trigwell & Taylor, 1994) and open to change depending on circumstances. They are, however, likely to be embedded in teachers' belief systems (McConlogue, 2003) and likely to indicate an underlying set of values about e-Learning and teaching: conceptions, beliefs and values of this kind are most often tacitly understood by teachers and most teachers are unlikely to be able to articulate them without some assistance or prompting.

There were three stages to each interview:

1 *History:* at the beginning of each interview we asked participants to relate a short biographical history of their teaching career. As well as acting as an icebreaker, the biography gave voice to participants. Biography "can help bridge the gap that has grown between the practice of teaching and the practice of studying teaching" (McEwan, 1995; 166)

2 *Case study:* this was the central part of the interview, where participants talked about their learning and teaching practice, ideas, beliefs and conceptions of e-Learning. Teachers' knowledge of their beliefs, values and practices is likely to be in part tacit. Beliefs exist "at an implicit level and may therefore be difficult to articulate and identify and hence difficult to unearth and examine" (Tann, 1993: 55–56, as cited in McConlogue, 2003). Because of this, we tried to help teachers unearth their conceptions by the use of stimulated recall in which we asked them to think about specific examples of their teaching as it relates to e-Learning so that they could bring this to the fore as a source for discussion. Stimulated recall is a way of discovering what a person was thinking at a 'critical' moment' of action.

3 *Future:* We asked participants to tell us about future plans for using e-Learning in their teaching. This allowed them to think ahead to where they thought e-Learning was going, and to consider what they might be trying to achieve in their future practice. This also acted as 'closure' to the discussion, allowing us to thank them for their time and participation and for them to ask us questions about the project.

The interview method was piloted in China in January and February 2006, and revisions to the methodology carried out. The first full set of interviews was carried out in March to June 2006. The interviews were conducted in Chinese and audio recorded with participants' permission. Transcripts in Chinese were prepared from the recordings, and these were then translated into English for analysis. Each interview took place in the participant's office or other suitable place, and took between one and two hours.

Analysis

The interviews were analysed in two stages:

Each interview was examined separately as a case study. Each transcript was read through and notes made in the margins highlighting particular issues of potential interest to us. The transcript was then read again and the original notes were expanded into a narrative about the participant's conceptualisations of e-Learning. This expanded narrative allowed us to get an in-depth understanding of each person's beliefs and values. We were able to draw-out the unique features of each case. These in-depth case studies proved to be rich in data and presented the participant's conceptions of e-Learning within the particular and unique context of their place of work.

Having examined each case in turn, we then analysed across cases, comparing one interview with the other and drawing out similarities and differences between cases. This led to a provisional set of categories. At this point, one of us (Zhao) went back to the original Chinese transcripts to check that the translation of certain words and phrases into English was consistent across transcripts. We then double-checked each category until we felt they were stable. The aim here was to develop a set of grounded categories that expressed all the conceptions of e-Learning held by the participants. (Charmaz, 2000).

Results

The open-ended, wide ranging nature of the interviews allowed participants to explore their conceptions of e-Learning in relation to the particular higher education contexts in which they taught. In this paper, we discuss a preliminary set of categories of conceptions.

The centrality of the lecture
Every teacher we talked to emphasised the importance of the lecture method in the Chinese higher education system. The traditional 2–3 hour long face-to-face lecture method is for many of these Chinese

teachers still the favoured method of teaching. Even when there is good student access to technology, and where arguably e-Learning could be implemented, many of the higher education teachers interviewed said they still prefer the lecture, and indeed many still consider it to be the method most likely to lead to "mastery" of theoretical material and good quality learning outcomes. One interviewee went as far as to state that mastery of theoretical material "cannot be achieved online" and could only be satisfactorily achieved in the setting of the face-to-face lecture.

We cannot over emphasise the importance attributed by these teachers to the lecture method in the Chinese higher education system. Despite the enthusiastic interest shown by all those interviewed, and despite their personal eagerness to adapt e-Learning strategies into their practice and the value they placed on e-Learning, no one talked of e-Learning as being a central teaching and learning method, or of it being possible in China to run courses in conventional universities completely via e-Learning. The lecture, delivered by an authority figure, is the central vehicle for transmitting knowledge. It seemed impossible for these teachers to imagine a Chinese higher education system that did not place the lecture at its centre. From this position, all other considerations about teaching and learning seem to flow.

Online co-operative learning

The incorporation of cooperative learning methods into e-Learning strategies appears to be reasonably well understood by many of those interviewed. This form of e-Learning was described by them as involving the teacher delivering a face-to-face lecture, which is followed by students working online, often in groups, on cooperative tasks suggested by the teacher in order to consolidate their learning. Our analysis of the interviews shows that Chinese higher education teachers think that the introduction of online cooperative learning into their teaching practice helps the teaching and learning process in a number of useful ways:

a) It "excites" students by involving them in using new technologies such as learning platforms and discussion groups, which it is assumed will bring a large element of interest and motivation to their learning;
b) "painful" and "boring" learning associated by students with lectures can partly be overcome;
c) It provides a way of compensating for the draw-backs of the lecture method. Those interviewed said that online cooperative learning provides a means for introducing social (group based) learning methods in which students can discuss theoretical and conceptual issues, and carry out small-scale cooperative group projects. Participants expressed the view that the traditional face-to-face lecture does not include opportunities for teacher-student communication, nor for student-student communication of this kind;
d) Students have the opportunity to explore their 'tacit', or taken for granted, knowledge through discussion with their peers;
e) Students have access to more and richer "e" learning materials in these settings;
f) It is anticipated that online cooperative learning should lead to "good results" (*learning outcomes*) from their students;
g) Online co-operative learning provides students with the opportunity to learn "how to behave" in social settings and how to form relationships with each other. This, again, is something that does not occur easily in the lecture-only format of higher education teaching in China;
h) Costs can be saved, as large classes can be taught by one teacher;
i) Improvements in the "efficiency" of the teaching process can be achieved.

All those interviewed were familiar with the possible theoretical applications of online cooperative learning, and several of them were trying to implement it in their practice. However, despite the theoretical benefits to them of employing cooperative learning methods, everyone interviewed noted that there are many problems with this form of e-Learning in the context of the Chinese higher education system:

a) It is time consuming for the teacher: with large class sizes of 40–60 students, teachers say they spend too much time trying to look after the online groups and in answering student queries and questions.
b) In practice, online cooperative learning leads to poor learning results and outcomes compared with other means.

c) Despite trying to involve students in cooperative group work, teachers say competition is endemic in the Chinese higher education system, and that even in a cooperative learning setting, many students continue to be very competitive, which of course works against the cooperative learning ethic.
d) Group work, whether face-to-face or online, is experienced by students as being highly problematic because not everyone participates, yet often the same group mark is awarded to each individual in the group despite their level of participation, making it possible for many to "free ride". This can cause students to question the benefits to them of participating.
e) Online participation by students is, on the whole, poor. Most students will only participate if the teacher leads the discussion or poses questions. Students rarely take the initiative in leading a discussion or posing questions to other students. When they do ask questions, they are often targeted at the teacher and are about examination requirements and other administrative issues.
f) Online cooperative learning is still inherently teacher centred: despite the cooperative learning rhetoric, it seems some teachers still see this method as being largely about requiring students to grasp the theory that was taught in the lecture, rather than perhaps exploring concepts and participating in discussions of their own choice, or discussions leading to diverse outcomes.
g) Some teachers say students still prefer the traditional face-to-face lecture in which the teacher as expert directs students about what they should learn and what is needed to pass the end of course examination.

Network Learning

In many interviews, teachers discussed their use of "network learning". This was described as a form of resource-based learning, where material (often in the form of a text book) is placed online and students are expected to learn it on their own. This process was described by one interviewee as a form if "individuation". It is a quick and convenient form of e-Learning which can be applied to the masses. One teacher described how he taught classes of 300 students via network learning, and said this was not unusual. Those interviewed talked of network learning as a way of providing courses to the public, who are off-campus. There was scepticism about the quality of this form of e-Learning, with questions about its ability to 'improve' learning. It is considered quick and convenient, but not of a high quality. Yet from what those interviewed said, it seems ubiquitous throughout some parts of China.

Student Learning

The ways in which students are asked or expected to learn by teachers is an important aspect of the change that occurs when e-Learning is introduced into higher education. Questions were raised by some of those interviewed about the ability of the Chinese student to participate in forms of e-Learning that are based on "self-study" methods. It seems Chinese students are not well equipped for this kind of learning and, in many cases, still expect the teacher to teach them everything. In relation to this issue, one interviewee characterised students into two types: the "City-bred" student, who is usually a single child and whose maturity is "brittle"; and the "Country-bred" student, who is earnest and frank:

> the students of Kang university have a character, they are from the city, dress-up fashionably. And then almost all are singleton, are coddled since childhood at home. Therefore….I find that they are excellent in drawing etc, but the brittle degree of their mentality is also strong…..The class is different in Nanhai, they are from city and country. You will find this very obvious, will feel that (these) children are especially weak to (learning) new things….their thinking is not so active. However, they are frank. Their origins are different (interviewee).

The implication here is that to involve students with such diverse origins, expectations of learning and approaches to learning in online e-Learning methods that are based on self-study and autonomy would, in many cases, be extremely difficult. The cultural shift required by students to cope with self-study, or to re-asses their role in the teaching and learning process especially in an e-Learning context, would be enormous and for many beyond their present ability. Teachers said that the shift away from teacher-led, teacher-focused methods to "innovative" methods that call on students to exercise greater agency in their learning will be slow to emerge, even in face-to-face contexts.

Infrastructure and access
Effective e-Learning necessarily relies on there being a well-resourced technical infrastructure, and for those involved having consistent and stable access. The situation in China with regard to these issues is changing. It appears to be very patchy and seems to depend on the resources and social and political context of each institution. The higher education teachers that we interviewed work in reasonably well-resourced universities. But even here infrastructure and access can be poor, or poorly supported, so making the promotion of effective e-Learning problematical.

For example one person who we interviewed compared the excellent technical infrastructure and access to computers in Hong Kong, of which she is familiar, with that in her own university in Beijing:

> In fact, the teacher wishes we can be in this kind of environment, and even sit at home, and in the office, not see the students, and implement all these things. But at present, it is not realistic. Many aspects still need to be improved. Not only the hardware environment, but also including some ideas *(about how to make e-Learning work)*, some theoretical findings, some constructions of the software environment, and some sharing materials, which are good for the course learning, are all the elements that must be considered in the development process of the e-Learning (interviewee).

Another teacher who indicated a keen willingness in the interview to embrace e-Learning and all that it had to offer talked realistically about the present cultural and political context of higher education in China and how, even if access to technology and infrastructures was at the level found in many western countries, it may still not be possible to fully embrace it:

> We admire the environment in the western countries very much. For example I can learn even lying on the lawn with a notebook computer. I think this will let the students out, and in fact, in the process of letting them out it can also exercise a kind of self-conscious competence or open mind in them. But the environment in our country maybe does not allow this…(interviewee).

Clearly, although infrastructure and access are important determinants of effective e-Learning, there are also important cultural and political issues that also intervene.

Discussion

This research into the conceptions of e-Learning and teaching held by higher education teachers in China provides a fascinating, but necessarily partial window into the world of higher education in China today. Because of their particular position as e-Learning practitioners and advocates for e-Learning in their university, those interviewed are university staff who we might expect to be knowledgeable about e-Learning and be in a position to implement it in their own practice, and to influence its implementation across their particular institution. They are not uncritical about the state of e-Learning in China, and are realistic about its potential as a mainstream method of teaching and learning.

The teachers we interviewed exist, however, in a teaching and learning culture that has been dominated by the lecture method for centuries (Gu, 2006), and without exception each of them acknowledged the overwhelming centrality and sheer power of the lecture in the Chinese higher education system. This perception of teaching and learning is not uncommon in China. Indeed, anything other than the traditional, campus-based form of higher education is universally considered second or third rate (Gu, 2006). E-Learning seems to be relegated by many teachers to a third class form of education. Even the traditional correspondence course is considered by many to be of a higher quality.

Teachers interested in e-Learning in China face many issues that will impinge on their ability to incorporate the use of information and communications technologies into mainstream higher education. One issue is the size of classes in China, which can be large, usually between 40–60 students. In the case of network learning courses, some classes have as many as 300 students. In such contexts, the opportunities for innovating are not high. Incidentally, it is interesting to note the different meaning of network learning in the Chinese context, where it refers to a largely resource-based form of online learning in which learning material is "broadcast" to the masses and in which there is little student-to-

student communication, and even less student-to-teacher communication. It is a delivery system in which individual students receive course material and are expected to learn it on their own. This is in contrast to western network learning practice which involves "learning in which information and communications technology (ICT) is used to promote connections: between one learner and other learners; between learners and tutors; between a learning community and its learning resources." (Goodyear, Banks, Hodgson and McConnell, 2004: 1). There is little if any sense of "community" in the Chinese meaning of network learning.

Another feature of the Chinese higher education system that may impact on the incorporation of e-Learning into mainstream practice is the way in which teaching is organised. The teachers interviewed in this study organise and run courses by themselves. There seems to be little understanding of team teaching or of how courses can be produced and taught by teams of teachers working together. Higher education institutions appear to provide little support for working in this way. And incidentally, there appear to be few opportunities for higher education teachers to benefit generally from staff development initiatives. Indeed we were told by many of those we talked to as part of this research that taking part in this interview study provided them with a unique and valuable opportunity to share their ideas with a willing listener and discuss trends in e-Learning innovation. It therefore appears that it is difficult for any individual teacher working in a conventional on-campus setting to find out about innovations in learning and teaching generally, and about e-Learning in particular, in order to assist them in their professional development and to make the move from the traditional face-to-face lecture to online or e-Learning.

The issues faced by teachers are of course only one part of the picture. Students have to be open to change and need to have an understanding of the potential benefits to them of innovations in learning and teaching, especially those requiring them to participate in socially situated collaborative and cooperative forms of learning. We have seen that students' ability, or willingness, to participate in forms of learning that require them to be more autonomous and to manage aspects of their own learning is a potential barrier to the introduction of forms of e-Learning that are widely practised in western countries. This adds another complex layer to what is already a complex situation in the culture of teaching in Chinese universities. As long as the lecture method dominates, and as long as the teacher continues to be seen as the sole expert disseminator of knowledge and as long as the end of course examination continues to be the major important source of judgement about learning outcomes, forms of e-Learning that have become widely established in western countries are not likely to become easily established in the Chinese context. As Yu Minhui puts it:

> students are often told that the key task for them is to make great effort to achieve the excellent scores in exams, because regardless of how actively you participate in the classroom activities and discussions, exam performance is the only means to assess whether or not you are a good student, in other words whether or not you will be successful in your lifetime. Under those conditions, it is impossible for students to bridge the connection between the function of their participation in classroom interaction and their learning outcomes (Yu Minhui, 2006)

Another issue faced by these teachers is the lack of technical support offered by their universities. Most higher education institutions do not seem to have the appropriate technical infrastructure to support e-Learning. Many of those interviewed teach in reasonably well-resourced institutions (by Chinese standards), but even in these contexts student access to computers is very low, and the on-campus e-Learning infrastructure is weak and cannot easily support large numbers of online learners. The resources that teachers can provide online are still poor. Students studying at the post-graduate level have little access to research resources such as e-journals and research data-bases. Full access to the Internet and the resources available on it is still problematic for most campus students, and indeed for the wider society in China, although this is changing.

Conclusion

In this study, we set out to investigate the state of e-Learning in higher education in China by interviewing teachers in Chinese universities who use e-Learning in their day-to-day practice. From a second order perspective, we constructed a set of preliminary grounded categories describing the conceptions of e-Learning and teaching held by these teachers. The *lecture method* is still central to the Chinese higher education system and is unlikely to be superseded by any other method in the near future. The lecture is considered by many to be the only way to pass on knowledge of any substance. Indeed, it is the teaching method by which all others seem to be compared. Nevertheless, e-Learning methods that have been tried and tested in western countries such as *online co-operative learning* are being introduced by small numbers of teachers wishing to innovate in their practice and who have the resources and understanding of how to organise learning in this way. Success is not universal: many students resist working collaboratively or do not know how to do so. The long tradition in China of competitive learning is hard to throw off. Assessment strategies work against student participation in online discussions. Learning outcomes are not always at the desired standard. Despite this, some of those teachers we talked with indicated a commitment to forms of e-Learning requiring students to work together in cooperative groups. They believed in the social and intellectual benefits to their students of this form of learning. The most ubiquitous form of e-Learning mentioned by those interviewed is *network learning*. Unlike its western counterpart, which has a focus on promoting connections, and in networking students and tutors in the context of a rich variety of resources, the Chinese conception of network learning is a form of learning in which packaged learning material is broadcast to masses of off-campus students. There is little real attempt at facilitating connections between learners. It is described as being an efficient way of distributing course materials. Students and *student learning* are of course at the centre of any form of higher education. Those interviewed had some concerns about the ability of Chinese students to adapt to self-study methods and other forms of self-management that may be required in e-Learning contexts. There is still a high teacher dependency culture in China that militates against student autonomy. Finally technological *infrastructure and access* to computers in most universities is still poor compared with that in western countries. The state of e-Learning in the universities in which these teachers work is however dynamic and changing.

Looking to the future, the results of these interviews suggest that those who are already involved in the field of e-Learning in China share a common future model of e-Learning. This might best be described as the "Lecture plus Online Work" model. This model involves the teacher giving a face-to-face lecture on theoretical or conceptual issues, followed by 'homework' carried out by students in an online learning platform. The online homework may involve students participating in group tasks and discussions, with opportunities for students to ask questions of the teacher. Many of those interviewed said this was the most likely way forward for e-Learning in the Chinese higher education system as it supports the traditional lecture method, which many see as being the basis of high quality student learning, while offering students opportunities to interact and communicate in ways that are not currently possible in the lecture itself. This model appears to address the issue of large class size, as it (theoretically at least) provides a way for teachers to organise students into smaller groups with a focus on interaction and communication online:

> With all these students, we need to solve the problem of too many students with too limited classrooms….So I want to make some revolutions to reduce all the classes to about 60 students a class with small (online) tutorial groups (interviewee).

A change of this kind would amount to a radical shift in the Chinese higher education learning and teaching process. There are signs that such a shift is occurring, but only among those enthusiastic teachers who are already involved in e-Learning, which is a minority of teachers. The strength of educational traditions and the inherently conservative nature of Chinese higher education suggest that any wider shift to some kind of mainstream e-Learning is some considerable way off.

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