E-learning communities in Initial Teacher Training: How can undergraduate trainees be encouraged to participate in online discussion during final school experience?

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INTRODUCTION

This paper aims to add to our understanding of the reasons behind varied levels of participation in online communication by trainees on a four year undergraduate (UG) BA with primary teacher training programme and, in doing so, provide some information for other initial teacher training (ITT) providers who might be hoping to pursue a similar course. It sets out to answer the question 'How can undergraduate trainees be encouraged to participate in online discussion during final school experience?'

The paper outlines the outcomes of one part of a project (the 'connect4' project) which was established to provide and evaluate non-assessed online forums designed to allow trainees to maintain contact and share resources during their final placement. The data gathered allowed the following sub-questions to be considered:

- What are the motivations and benefits for trainees to participate in online discussion during final school experience (SE)?
- What are the barriers to online communication for trainees during final SE?

The background of the connect4 project will first be explained after which some literature pertinent to the issue of participation in online discussion forums will be reviewed. The rest of the paper will focus on the evaluation of the project, outlining the methodology and discussing the issues that the data highlights. The paper will finally consider how these issues could be addressed with future cohorts of trainees and how trainees value (or otherwise) having access to online discussion forums during final SE.

BACKGROUND TO THE PROJECT

During the course of 2005 the project, funded by the Training and Development Agency (TDA) 'Promoting e-learning communities in ITT' monies, was established. This set out to create and sustain an e-learning community, through the use of php-based discussion boards, with final placement trainees, newly qualified teachers (NQTs), mentors in schools and other ITT providers. The project was entitled 'connect4' in view of the fact that it allowed communication within these 4 groups.

For undergraduate (UG) trainees, the focus of this paper, the intention was for them to become part of an online community for a specific reason, namely to support each other by exchanging materials and ideas for the teaching of mathematics during final school experience. It was hoped that, after graduation, they would continue to use the NQT forum to maintain contact with peers and to exchange materials and ideas during their first year of teaching. Mathematics was chosen as the focus as this was one area of the primary curriculum that the trainees would have to plan to teach every day and was an area in which some of them lacked confidence in subject knowledge at their own level.

The necessary systems were first put into place in that php discussion boards were established online for the four different communities targeted within the project. A leaflet explaining about the project and how to register for the discussion boards was prepared and distributed to all prospective participants. The whole UG cohort was also given a briefing on how to access the board and how to register.

The choice of php discussion boards was based on their accessibility to NQTs and the other two groups taking part in the project, all of whom were not members of the university. The University's virtual learning environment, WebCT, is not accessible by external users and it was felt that registration and training of final placement trainees in the use of php discussion boards, rather than WebCT, would facilitate and prompt continuing interaction and professional development as NQTs within an e-learning community.

The trainee forums were open throughout the placements and a number of reminders about its use were given at various times before and during the placement period. It is the level of engagement within the UG trainee forum that is to be the focus for this paper.

In addition to the php board a 'Final school experience – General Issues' message board was also available to the UG trainees from their WebCT home page. This was set up by the SE director to provide a facility for trainees to raise placement queries as necessary.

ONLINE COMMUNICATION AND COLLABORATION

Some of the literature relevant to the project will now be reviewed in relation to the two sub-questions listed in the introduction.

What are the motivations and benefits for trainees to participate in online discussion during final SE?

Biggs (1999) listed four categories of motivation for students becoming engaged in learning at university level. These included:

- a) extrinsic motivation (i.e. an outcome that benefits the student in some way)
- b) social motivation (i.e. student feels that others will value their engagement)
- c) an opportunity for ego-enhancement
- d) intrinsic motivation (i.e. engagement because of the satisfaction it gives)

Of these, social and intrinsic motivation were felt to be the least likely reasons for trainee engagement in the connect4 board during a busy time such as final SE. An opportunity for ego enhancement could well motivate those trainees who like seeing their ideas and resources in public view and who enjoy others praising them for their efforts. However, extrinsic motivation was felt to be the most likely reason for trainees to engage as they would be able to access useful support during their placement. In doing so they would prepare themselves for working as a fully qualified teacher, a job where collaboration in the preparation of teaching materials is becoming more and more common. Teachers are expected to plan as teams, sharing ideas and materials, working to their strengths to the benefit of team members and the children they teach. The Department for Education and Skills (DfES, 2003) is keen for schools to go further than this and highlights cross school collaboration as something that should be actively encouraged. The DfES Innovation Unit cites inter-school networking '...as a radical answer to raising standards of teaching and learning in every school.' (http://www.standards.dfes.gov.uk/innovationunit/collaboration/networkcollaboration/?version=1) When asking for bids for the 'e-learning communities' funding the TDA were supporting this view, and going further, acknowledging the benefits of online communication and collaboration.

Another possible motivation to engage in online communication is that of helping out others in similar circumstances. Preece and Maloney-Krichmar (2003:9) suggested 'common ground' is an important aspect in social interaction which allows participants in online discussion to have a shared understanding of what they are discussing. Within the connect4 project all of the trainees were all on placement in school. To that extent they experienced 'common ground'. However, different trainees were in different contexts (age groups, school settings, distances from university etc.) and it could be that posting from one trainee in one setting would trigger empathy from another trainee in a similar setting hence giving them the motivation to act altruistically by responding and offering support and resources.

Salmon (2002) suggests that as participants in online learning become more adept and used to the system their motivation for participating in online discussion changes. She identified a number of stages that, once introduced to the system, learners move through. This begins with the desire for simple online socialisation from which they move on to the stage of discussion in order to exchange information and support each other in achieving their goals. Next there is a stage of group discussions which allow for collaboration and knowledge construction and, finally, the stage where participants look further than the group for benefits that might help their own development. In terms of the connect4 project it was felt that of these motivations it was those in the two earlier stages listed above that were most relevant. The php board was simply designed to act as a support service if required by the trainees.

The benefits of communication and collaboration through online forums have been well researched and there were a number of studies that highlighted potential benefits, and therefore motivation for engagement, for the trainees involved in the connect4 project.

The first of these is that of participants being able to keep in touch asynchronously from wherever they happen to be living. Kickel and Kickel (2001) and Hammond & Wiriyapinit

(2004) all reported that students appreciated the flexibility allowed by asynchronous discussion. Such flexibility is important for trainee teachers on placement as they are unable to speak to each other until they arrive home from school in the late afternoon or early evening and then have to work late, planning for the following day. The ability to log on to a discussion forum at a time to suit yet still be able to see what has already been discussed is a useful facility as is the chance to share resources electronically thus overcoming the need for trainees to meet to swap disks for copying files or hard copies of resources.

Clouder and Deepwell's (2004) study into the use of online discussion boards by physiotherapy students reported that participants gained reassurance from each other during placements. During teaching placements trainees can feel isolated, as they do not come into university for regular teaching sessions. Having an online forum available to share problems, materials and ideas would appear to be a useful support structure at such a time.

Another possible benefit for trainees from the connect4 project arises from the fact that the forum was open to the whole cohort. Clouder and Deepwell found that discussion boards allowed students to engage with people that they would not normally talk to which gave rise to 'the potential for widening networks and therefore thinking, which might be more constrained in a face-to-face context' (2004:431). Tutors thought that trainees who do not normally have contact with each other during university taught sessions may well be able to offer each other support via the connect4 forum if they were placed in similar contexts for their final SE.

A fourth benefit to the connect4 board appeared to lie in the fact that the structure of an online forum normally ensures that messages can be organised in a coherent way and provides a constant record of all that has been said. Students in Hammond and Wiriyapinit's (2004) study saw the ability to go back to read messages on an online forum as a real advantage and a much better system than email for communication as emails are normally sent to a limited audience, are often deleted and cannot be read in a threaded way. Tutors felt that if trainees had useful ideas and wanted to discuss how they went when put into practice, or were seeking new resources to support the teaching of a particular learning objective, then an online forum would be a useful tool.

It was with these benefits in mind that the connect4 project was originally designed. However, there are a number of problems with this type of communication and the tutors involved in setting up the project were aware of what these included.

What are the barriers to online communication for trainees during final SE?

There is research to suggest that students in higher education are sometimes unwilling to share ideas. Ashby and Broughan reported that in a study of VLE use '...some students felt an unwillingness to share ideas with peers that may favour others in assessment' (2002:140). The trainees within the connect4 project were to be appraised whilst teaching and could well have been reluctant to offer their own resources to others in the same situation, i.e. there may well be a feeling that you need to 'stand on your own feet' and not benefit from others' hard work.

Another possible barrier to the success of the connect4 forums was that people can find the medium difficult to use – either due to technical problems with the system or to a reluctance to 'go public' online. Among the student group that Clouder and Deepwell studied they noted individuals with "evaluation apprehension" ..., the concern that peers might evaluate their ideas, particularly if they are written down'(2004:431). The trainees within the connect4 project group were reasonably well used to having to post messages to discussion boards as part of some of their modules in university so it was felt that lack of confidence to put their ideas online should not prevent the majority from participating.

A common obstacle found by Allan for people not participating in e-learning initiatives was that of not having the time, or the inclination to find the time, to do so. He reported that some participants felt that e-learning brought '...an additional burden to an already heavily pressurized workload and life style' and that '"time" was frequently an obstacle for e-learners' (2004:341). Cramphorn, too, when investigating the reasons why students were not participating in web-based discussion boards, found that lack of time was a barrier and the time needed to write responses was 'at least five times as long as speech' (2004:421).

METHODOLOGY

Evaluation of the project was carried out by the completion of a hard copy, anonymous evaluation proforma by all 120 trainees during their post SE meeting. This methodology was chosen for three reasons:

- a) It enabled data to be gathered quickly and easily from the whole cohort. The size of the cohort was such that to have interviewed all trainees would have been impossible in the available time. A small sample could have been interviewed but the resulting data would have been less useful as the more individuals that could be included the more representative the data would be. Krejcie and Morgan (1970) advise that for a sample to be representative in a population of 120 at least 92 people would need to be included. To interview 92 trainees and then transcribe the results was unrealistic within the time available.
- b) Sample size was maximised. Tutors had a guaranteed audience as all trainees were required to attend the post SE meeting.
- c) Anonymity ensured that trainees could be open and honest about their views. Cohen et al (2000) warned that '...[A]n interviewer might be regarded as someone who can impose sanctions on the interviewee...'(p.121) so, in a situation where the researcher was a module tutor, the trainees might not have felt able to speak openly if their feelings were negative in case of reprisal when module assignments were marked. Completion of an anonymous questionnaire overcame this issue.

The relevant part of the questionnaire used can be seen in Appendix 1. A number of closed questions were asked, in addition to which trainees were requested to rate a set of statements from one to four (1 indicated strong agreement). Whilst an even number of ratings does have the benefit of forcing participants to give either negative or positive ratings, a middle value being less useful, it can, according to Cohen et al (2000) lead to an

inaccurate view. Because the participants cannot lodge an ambivalent attitude the researcher is left with the impression that participants have a stronger view than they actually do. However, a four, rather than five, point rating scale was chosen as it matched the format of the standard institutional module evaluation pro forma which the trainees were used to completing so would not lead to confusion. Space for supporting comments for these ratings was also provided in order to gather additional insights. Data indicating the level of engagement in the discussion boards were also available from the boards themselves.

OUTCOMES

82 % of trainees registered for the 'connect4' php board but, as can be seen from Tables 1 and 2 below, participation in the connect4 forum was very limited. The majority of the few who did access the board did so in order to read messages only. Data gathered from the board itself shows that only two trainees posted three messages between them. The tables also gives participation data for the 'General issues' WebCT forum and show a higher level of usage.

Number of visits	% of trainees (connect4 php board)	% of trainees ('General issues' WebCT forum)
None	56	21
Seldom - 1 or 2	34	11
Occasionally - 3-6	8	23
Regularly - More than 6	2	45

Table 1: Numbers of visits to the available discussion boards

Purpose of visiting forum	% of respondents (connect4 php board)	% of respondents ('General issues' WebCT forum)
Reading messages only	95	79
Posting messages only	0	0
Reading & posting	5	21

Table 2: Purpose of visiting the available discussion boards

Table 3 shows that although much work was done in developing mathematics resources to be used on SE virtually none were sent in for uploading onto the connect4 discussion board.

Resources	% trainees who developed resource files	% trainees sharing resources through the connect4 discussion board
Interactive whiteboard notepads	62	1
Powerpoint Presentations	43	1
Word documents	10	
Excel Spreadsheets	8	
Scanned images	3	
Other	13	

Table 3: Number of resources developed and shared

There was a much better degree of participation in the 'General Issues' WebCT message board with a set of thirteen discussions being developed. However, even these involved a limited number of participants. Of the 120 trainees within the cohort only 16 became involved. 61 messages were posted over an eight week period and 16 of these were responses from the tutor responsible for the SE.

Responses to the questions relating to trainees' feelings about participating in online communication can be seen in Figure 1. 71% felt positive about communicating with peers online; 90% were happy to share resources online and 89% reported that they were confident in the use of ICT in order to do so.

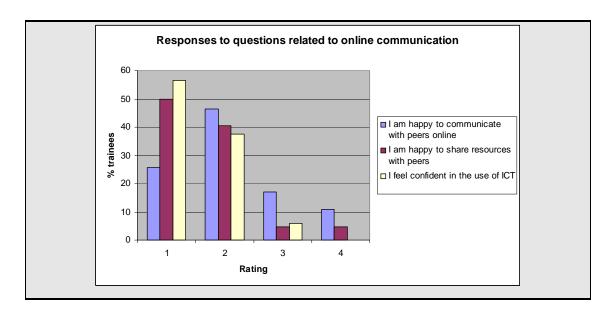


Figure 1: Responses to questions relating to online communication

Responses to the questions relating to motivations to use the connect4 discussion board can be seen in Figure 2. Here the responses were mainly negative apart from the final response where 70% of the trainees reported that they would like to continue using the connect4 board when NQTs.

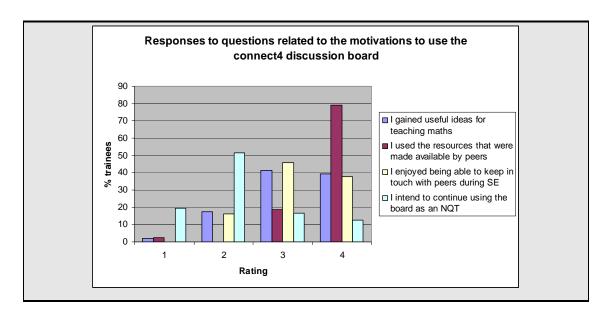


Figure 2: Responses to questions related to the motivations to use the connect4 discussion board

Supporting comments for these ratings are listed in table 4 which shows the number of trainees making similar comments. Unfortunately not many trainees provided supporting comments, in spite of being used to doing so during normal module evaluation procedures. It could be that the morning after a final SE ends is not an ideal time to choose to evaluate a project but it was the only time available. In spite of the limited number of comments the statements do provide a flavour of their feelings and it is likely that they could well be echoed by many others within the group.

Reason	% trainees
I had no time to do this	22
I had no internet access at home	7
I was unsure about how to access/use the discussion board	6
I found my own resources	5
I prefer face to face discussion	5
I didn't have an interactive whiteboard at school	4
It was not a priority	4
I couldn't access the discussion board	3
I missed the training session so was unsure of what to do	3
I don't like posting resources in case people think that they are no good /	2
wrong	
I used the WebCT forum to keep in touch	2
I lack confidence in the use of ICT	2
Students should be able to find their own resources	1

Table 4: Reasons given for lack of participation in the connect4 php forum.

Table 5 gives the reasons trainees gave for engaging in the 'General Issues' WebCT forum. It is clear from this that they felt the forum useful. In spite of only 13% of trainees posting messages 66% did make a number of visits to the forum to read what was there, unlike the connect4 forum which was visited a number of times by only 10% of trainees.

Reason	% trainees
To check if there was anything important I needed to know from	27
university	
To see if anyone had asked a question that would help me	17
To see how others were getting on / see how they felt	27
To ask questions	2
To share problems	2
To share / get lesson ideas	2
It was entertaining	1

Table 5: Reasons cited for engaging in the 'General Issues' WebCT forum.

DISCUSSION

The outcomes will next be discussed in relation to the two sub-questions set in the introduction to this paper.

What are the motivations and benefits for trainees to participate in online discussion during final SE?

The three key motivations for participating in the connect4 discussion board that trainees were asked about within the questionnaire were:

- a) gaining ideas for using in mathematics lessons;
- b) being able to access ready made resources for mathematics teaching; and
- c) being able to keep in touch with peers

In retrospect it may well have been useful to ask a further open question about other motivations they may have had to become involved. However, looking at the available data that is shown in Figure 2 it is only a minority of trainees that felt that the connect4 discussion board provided any motivation to engage on these three counts. None of the trainees who did rate these aspects positively provided any further comments to give further insight.

Within the WebCT forum 27% did appear to have the motivation that they wanted to keep in touch with peers. Presumably because they were able to do so through WebCT they didn't need to via the connect4 board. However, with only less than one third of trainees feeling the need to keep in touch it seems that tutors (and the TDA who felt that money could be usefully spent setting up this kind of online community) need to re-think the need for such forums. It could be that, whilst in school, trainees are happy to be supported by

their mentors, class teachers, other trainees within the school setting and their own close peers that they see once they get home each day.

It is likely that the use of the connect4 php board was reduced due to the availability of the WebCT forum (a platform they are used to using in other modules). There was a real reason for logging on as they needed to check WebCT for important messages from the SE director throughout their placement. While they were logged on it was easy for them to look at the general issues forum to see what had been posted. The forum was used by trainees to ask about placement related issues, as well as sharing ideas, hence the higher level of postings. Half of the discussion threads were to do with important questions about planning documentation, SE requirements and the TDA standards – the connect4 board did not have this status.

Once the motivation to engage in order to access important information regarding SE has gone and trainees become NQTs it could be that online communication could be expected to decline. However, as the majority of trainees reported that they wanted to use the connect4 board when they became NQTs it appears that this type of contact is valued. As the WebCT area would not be available to them once they left university the trainees realised that the connect4 board would be an easy way to then keep in touch.

What are the barriers to online communication for trainees during final SE?

Although 72% stated that they were happy to communicate with peers online only 2% did so through the use of the connect4 board, and 13% through the WebCT forum. This is an indication that the provision of online message boards is not in itself likely to encourage trainee interaction during final SE. It is clear that willingness to talk is not enough. Of the 28% of trainees who stated that they were not happy to communicate with peers online a number provided a clue as to why, namely that of preferring face to face discussion or lack of confidence in the use of ICT.

Only 10% of the trainees reported that they were not happy about sharing ideas and comments from these trainees indicated that the reason for not wanting to share was concern that they might be judged sub-standard, something that tallies with the findings of Clouder and Deepwell (2004) cited earlier in this paper. Many trainees developed mathematics resources for use in school yet virtually none were uploaded for sharing, in spite of 90% being happy to do so. It was clear that there were other barriers to take into account.

The overwhelming reason cited for lack of participation was, understandably, lack of time. School experience, particularly a final placement, is a very stressful time for trainees. They have to be extremely focused on planning, assessing, evaluating and preparing resources, spending hours doing so. Although the point of the connect4 board was to help them with this they appeared to see it as an unnecessary extra – 3 commenting that 'connect4 was not a priority'. Many of the trainees in the cohort were placed in schools that were a long distance from where they lived and, therefore, needed to spend a good deal of time travelling. Those that were not living near to university and did not have access to the internet at home would be disinclined to spend additional time travelling into university to

use the computers there. Accessing the internet from school can often be difficult for them as not all had internet connections in the classroom and there is little time available during a school day for accessing discussion forums.

Those who commented that they were unsure about how to access or use the board, in spite of a short briefing session and detailed registration leaflet provided, indicate that there may well be a need for extended training for those who are less confident in the use of ICT.

It was clear from the comments about the WebCT forum (see Table 5) and the data showing its use (see Table 1) that the trainees find an online forum useful during SE. The issue now is to consider how best to organise this to remove these barriers and encourage them to participate and benefit from the experience.

CONCLUSION

Although some trainees appeared motivated to participate in online communication during final SE in order to gather important information and maintain some contact, there appear to be a number of barriers that prevent trainees engaging in online communication. It could be that participation in online forums during this time is an unrealistic expectation on our part. However, if we feel it is an important aspect of teaching then we need to consider how it could be achieved. Other institutions involved in ITT that are debating how best to support trainees when out on placement and considering the use of online discussion boards may well find the following considerations useful.

Lack of time is a key issue but a difficult one to address. However, from September 2005 all teachers are meant to be guaranteed 10% non-contact time for preparation, planning and assessment (PPA) as a result of the government's workforce reform (DfES 2003:67), a move that resulted from a recognition that teachers have little time for PPA during the school day. Because of the introduction of PPA time in schools the university has had to change its expectations of the amount of face to face teaching a trainee can be expected to do. Rather than moving up to 90% during the last part of the placement (the level that used to be expected for an NQT) the limit has now been set to 80% to ensure trainees also have their 10% PPA time. Now that they have this time they could be encouraged to use some of it to support each other's planning within e-learning communities. Participation could be made a requirement of the placement, although this would penalise those who do not have easy access to an internet connection.

Lack of easy access to the internet is a problem which is also difficult to deal with. Trainees who haven't got access to an internet connection at home and who live a good distance from university are not going to be able to engage easily at all. However, the majority of primary schools have now got an internet connection so it should be possible to gain access during the school day, even if only for a limited period each week.

Helping all trainees to be more comfortable engaging in online discussion could be achieved by increasing the use of online forums within university modules so that they are more used to working within this environment. Currently the university's ITT modules making use of this facility are in the minority. If it became the norm, and if there was some assessment of participation, then this reluctance may well be overcome.

The forums themselves need to be easily accessible. Use of the university's WebCT platform would seem sensible, allowing the connect4 board to run alongside the SE general issues forum thereby encouraging trainees to access both. This would provide a natural extension to an already established system that the trainees are used to using. The general issues forum was more highly valued by trainees as it provided important information that they all needed to be aware of and a point of contact to check on requirements for SE. The notion of 'common ground', mentioned earlier, encouraged them to participate in this online community, as they were coming 'together for a particular *purpose*' (Preece & Maloney-Krichmar 2005). If the connect4 board were just a click away then the level of engagement here might increase.

The connect4 board was intended for the sharing of mathematics ideas and resources. If trainees had a wider range of boards covering a variety of curriculum areas, age groups and contexts (e.g. a mixed age or mixed key stage class; a class with high numbers of children with English as an additional language or particular types of special educational needs) then this would provide further areas where trainees with 'common ground' could be encouraged to participate.

The use of WebCT for the connect4 board would have avoided the access problems that a number of trainees reported. However, if it were to be used as the preferred platform this would necessitate training in an alternative platform before the trainees left the institution. The use of Moodle software may well be an answer to this problem as it is a virtual learning environment which can be used internally and externally alike. Trainees who get used to using the system throughout their course would then be able to continue using it as NQTs without the need for re-training. All they would need to do would be to re-register as an external user using their private email address as their username.

It was gratifying to note that only one trainee voiced the opinion that they should have to find their own resources, in spite of initial thoughts voiced earlier in this paper that trainees may adopt a 'stand on your own feet' attitude, especially when they are being appraised. Hopefully this trainee was the exception rather than the rule and the cohort recognise that working as a team is a useful skill to have as a qualified teacher working in school. It would not be sensible to have the attitude that others need to come up with their own ideas. It is this way of thinking that wastes teachers' time in having to 're-invent the wheel' and prevents people working to their strengths for the benefit of others. To make sure that they do realise this it could be beneficial for them to make the sharing of at least one resource a placement requirement.

If the issues above could be satisfactorily addressed then it is likely that trainees would feel better supported in what is a demanding aspect of their programme of study. The

motivation to engage would increase and trainees would benefit from the support of the elearning community that they belonged to.

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APPENDIX 1: PART OF THE EVALUATION PROFORMA USED WITH THE 4 YEAR ITT UG TRAINEES

(ONLY SECTIONS RELATED TO THE USE OF THE PHP DISCUSSION BOARD ARE INCLUDED HERE.)		
Your assistance with this evaluation is much appreciated as the results form a vital part of the project review process.		
Section A		
• Did you register for the connect4 board for final SE? NO YES		
Reason if no:		
How often did you access the connect4 board during SE4?		
Never Seldom (1 or 2 times) Occasionally (3 to 6 times) Regularly (>6 times)		
If board was accessed did visits involve: Reading messages only Posting messages only Reading and posting		
messages		
• Number of messages posted		
Did you develop your own maths resources (e.g. IWB notepads, powerpoints, spreadsheets, word documents) for use on SE4? NO YES		
• If yes – did you upload any files onto connect4 discussion board?		
NO YES		

Section B

Simply give a score of 1-4 for each statement, where 1 is a high score (i.e. you agree strongly) and 4 is a low score (you disagree strongly).	Rating	Supporting comments	
• Accessing postings and documents from the connect4 forum was not problematic.			
• I am happy to communicate online with peers in a discussion forum.			
• I am happy to share my ideas and resources with peers.			
I feel competent and confident in the use of ICT generally.			
• I gained a lot of useful ideas for maths lessons from the 'connect4' board during final SE.			
• I made use of / adapted many of the available resources from the 'connect4' php board.			
• I enjoyed being able to keep in touch with other students during final SE via the 'connect4' php board.			
 I intend to continue using the 'connect4' php board when I am an NQT. 			
<u>Section C</u> – The 'General issues' message board on the SE4 Weber 25. How often did you access the 'General issues' board <u>during</u> SE4 (NB this does not include participation in queries about planning b	?	block began.)	
Never Seldom (1 or 2 times) Occasionally (3 to times)	6 times)	Regularly (>6	
26. If the 'General Issues' board was accessed did visits involve:			
Reading messages only Posting messages only	Readin	ng and posting messages	
27. If the 'General Issues' board was accessed – why did you do so?			

Section D – for those of you who responded to any of the above negatively:

Please explain how you could be encouraged / helped to take a greater part in online communication. What was it that prevented you from doing so?