

Designing Virtual Student Mobility

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Abstract

Internationalisation in Higher Education has resulted in an increasing number of students who choose to spend time working or studying overseas in order to gain an international perspective on their studies and develop intercultural and linguistic competences. While the benefits of international student mobility are undisputed, the numbers of students who benefit from 'real' mobility are relatively small due to financial and linguistic constraints. An alternative to real mobility is 'virtual' mobility; the use of ICT to enable students to collaborate and communicate across borders of space and time. Viewing the concept of mobility as an activity where students (and staff) experience a change of educational context that can impact differentially on those involved, this paper describes two European projects where ICT has been used to support real mobility students and to enable other students to experience virtual mobility, focusing on the organisational and socio-educational issues raised by technology choice and configuration.

Introduction

In the past fifteen years there has been a considerable growth in global student mobility, in line with a move towards a global knowledge economy (Europeunit, 2004b). International study exchanges and work placements within Europe can now be seen as integral parts of HE, complementing the Bologna process (Bologna, 2007b) in the drive to internationalise higher education and to increase the mobility and employability of European higher education graduates in the 'knowledge society' thus ensuring competitiveness of European higher education on the global scale. The mobility of students exposes them to internationalisation and intercultural learning but mobility is experienced in many different ways by students. What may be called *real* mobility is when students travel abroad for placements or for full programmes of study, whereas *virtual* mobility is experienced through online experiences. Virtual mobility can complement real mobility, and its design raises technical, organisational and socio-educational issues.

In this paper we use virtual mobility as a unifying concept to distil learning from two EU-funded projects where international online communication and support were approached as a sociotechnical design exercise: CAB – tutor facilitated international student collaboration online, and ESMOS – using online tools and technologies to support international student mobility. Both projects surveyed students and tutors on social, technical and educational aspects. Our focus is on the organisational and socio-educational issues raised by technology choice and configuration. Information and Communication Technologies are evolving rapidly, and the lessons we have learned can be applied to the use of the read/write Web or Web 2.0 as it is now called. In Section 2, we review the literature on real and virtual student mobility, and discuss tools for supporting mobile students. In the next section, we justify and describe our research method, followed by sections describing our cases, ESMOS and CAB. Finally, we discuss key issues relating to sociotechnical design of mobility support, raised by the literature in the context of our cases, and go on to draw some conclusions that can be applied within the changing landscape of information and communication technologies (ICTs).

Real Mobility, Virtual Mobility and their Sociotechnical Contexts

International Student Mobility can be defined as:

“any form of international mobility which takes place within a student’s programme of study in higher education. The length of absence can range from a short trip to the full duration of a course of study. In addition to study in a foreign HEI, mobility can include a period in a workplace or other non-HE environment.” (HEFCE, 2004a).

Two of the best known organised student mobility programmes in Europe are Socrates-Erasmus, which encourage co-operation between universities in different countries and foster the mobility of students and teachers within Europe, and Leonardo da Vinci, which aims to use transnational cooperation and skill mobility to enhance vocational training. Unfortunately, it is difficult to quantify this mobility since “mobility statistics” (in most European countries) report on foreign students, using the nationality of students as a measure of mobility, rather than counting students who move across country borders (Kelo *et al.* 2006). Mobility, however, does not just occur within Europe. Knight (2003) highlights the evolution of internationalisation as a concern of higher education across the world.

“Internationalisation at the national, sector, and institutional levels is defined as the process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education.” (Knight, 2003).

This broad definition encompasses internationalisation of higher education (HE) from an academic perspective (to improve the curriculum) and from a market perspective (to increase revenue by recruiting international students as distance or campus-based students). Global statistics reveal a very imbalanced flow in higher education as trade, and in mobility experiences of students in tertiary education; as well as a gross imbalance in educational opportunity (Global Education Digest, 2007a). Internationalisation of HE has been seen as a part of a country's response to globalisation that "*at the same time respects the individuality of the nation*", (Knight and de Wit, 1997). Moving from these national and institutional perspectives on internationalisation, a recent literature review of the Internationalisation of UK Higher Education has characterised internationalisation as applying not only to the curriculum but also to the experiences of international students in UK universities, to include home/international student relations (Caruana and Spurling, 2007).

Mobility is an area where ICT is regarded as an essential tool for support: information is easily distributed and accessed globally: boundaries of space and time are delineated, making it easier to co-ordinate activities internationally. ICT facilitates synchronous and asynchronous online communication and collaboration across borders (Caruana, 2004). Students experience **real** mobility when they study a programme or parts of a programme abroad. 'Internationalisation at home' has been defined as student participation in any internationally related activity with the exception of outbound student and staff mobility, driven by a desire to bring internationalisation to the estimated 90% who do not participate in Erasmus mobility schemes (Crowther et al., 2000). The diffusion of ICTs has enabled teachers to incorporate virtual co-presence into their local curriculum and activities, with students communicating with their peers from different countries and institutions. Such activities are an example of **virtual** mobility, in the optimistic definition that follows:

"The use of information and communication technologies (ICT) to obtain the same benefits as one would have with physical mobility but without the need to travel" (ELearning Europa, 2007c).

Mobility exposes students to internationalisation and intercultural learning through face to face and online communication and collaboration. Despite the definition of virtual mobility above, traditionally study abroad is seen as a richer intercultural and learning experience than online collaboration or distance education, those who experience it being regarded as a migratory elite (Murphey-Lejeune, 2001:51). Furthermore, real mobility does not necessarily result in a rich intercultural experience if international students do not mix beyond their national groups when studying overseas (Coates, 2006). Virtual mobility can complement real mobility, when online activities prepare for or follow up on exchanges, or virtual mobility can replace real mobility, and extend the audience of mobility activities. Designing virtual mobility raises technical, organisational and socio-educational issues.

In this paper, we use the concept of mobility as an activity where students (and staff) experience a change of context that can impact differentially on those involved in the activity. The change of context could be experienced by students who are studying abroad, and by students and staff they work with; by students from two different institutions who create an online context for their collaboration; by students who are studying abroad but stay in contact with their peers at home through online communication. In order to understand mobility, we need to view the activity from the perspective of all participants, as well as the more traditional provider or institutional perspectives. Virtual mobility activities initiated by students may occur through extra-institutional technologies and infrastructures, and beyond the gaze of tutors. Haythornthwaite (2001) observed that media occupy the most useful niche in group communication and collaboration:

"To examine these environments requires a multiplex approach, one that examines the nature and development of group activities, the way in which multiple types of interactions are accomplished through the variety of media available for communication, and how this combines to create the collaborative environment."(Ibid, 2001).

In communication media and tools to support real and virtual mobility, the emphasis to date has been on the issues relating to provision of digital services by the home and host institution, particularly authentication (Haywood *et al.*, 2006). Collaboration and support tools include virtual learning environments (VLEs), discussion forums, email, (we)blogs, instant messaging, SMS, mobile voice calls, Voice Over Internet Protocol services e.g. Skype, and even social networking sites, such as MySpace and Facebook. Whilst issues of institutional provision remain important, in the context of Web 2.0, where services are freely available on the read/write web (O'Reilly, 2005) and the ubiquity of mobile telephony amongst young people, students can easily set up their own collaborative environment.

Research Methods

Our approach is primarily interpretive as we seek to investigate and describe, in a rich fashion, tool support for virtual mobility. The two projects described in this paper used qualitative and quantitative data both to develop the sociotechnical artefacts provided for students, and to analyse outcomes (Bell *et al.*, 2006, Keegan and Valiuskeviciute, 2006). We have adopted a case study approach which was chosen as it enables the researcher to ask the 'how' and 'why' questions that help us to gain insight into emerging topics (Yin, 1994). The authors were researchers associated with the lead institution (University of Salford in each case), and have complemented qualitative and quantitative data with their own reflections, supported by notes and previous analyses reported in publication and project reports.

In the case of ESMOS, we used in-depth needs analyses of those involved in international mobility programmes, through interviews with key staff and stakeholders and through an online questionnaire, which was completed by two hundred internationally mobile students. On the CAB project, user-led evaluation of existing tools was complemented by an evaluation of alternatives to find a good fit with project objectives. On the ESMOS project was comprised of small-scale intensive studies of the use of social software for the support of physical and virtual mobility. The evaluation data on the effectiveness and level of satisfaction with new forms of online support (social, academic and technical) was gained through a combination of discussion thread analysis, focus groups and interviews with staff and students. In order to find out CAB students' general attitude to collaboration, motivational and emotional background, their satisfaction with timing, communication and language issues, attitude to collaboration platform etc., data analysis was undertaken based on the students and staff feedback (post collaboration questionnaires, reflective threads, focus groups and interviews). 571 questionnaire responses and 5 student focus groups were the subject of analysis.

CABWEB – a portal for staff and student collaboration

CAB (Collaboration Across Borders) project funded by the Socrates-Minerva program, was aiming to promote European cooperation in the field of open and distance learning and establish a network for online collaboration between staff and students from different countries, with emphasis on critical evaluation and reflection. During its life time (November 2003 to February 2006) CAB project hosted 24 student collaborations, 4 joint activities (where students and tutors participated equally), and 3 tutor discussions (professional development events) with 1921 students and 127 tutors involved all together. While majority of the collaborations were driven by the project partners (Poland, UK, Germany, Netherlands and Spain), 13 tutors and 280 students from Greece, Bulgaria, Turkey, Australia, USA, Malaysia, Mexico and Hong Kong actively joined the CABWEB community by organising and participating in collaborations.

For the first semester of the project, student collaborations took place using a range of discussion boards already in use at partner institutions and these were trialled by participants as part of the evaluation process. Partner communication was facilitated initially through Blackboard (the University of Salford VLE). Between the second and third semesters of the project, the decision was made to establish the CABWEB portal, a unified platform for project partner, tutor and student communication that was used henceforth and is still operational at time of writing. CABWEB is delivered through a fairly straightforward configuration of Moodle, a widely-used Open Source VLE, that offers a growing range of tools, including user profile, discussion forum, chat, WIKI, resources, glossary. Student collaborations usually used the discussion forum for asynchronous discussion.

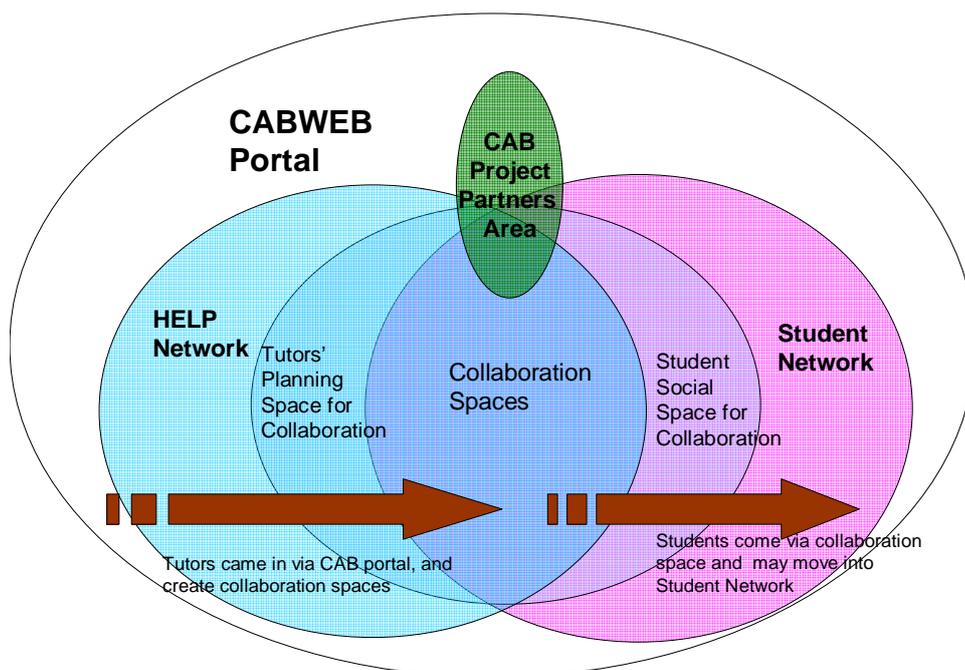


Figure 1 - CABWEB Portal - conceptual model

As well as providing a dedicated space for each student's collaboration, CABWEB also provided an ongoing space for tutors, Higher Education Learning Professionals network (HELP, see Figure 1.) The intention was that tutors would use the space to organise and discuss student collaborations. HELP evolved into a space for more general discussion on open and distance learning, (125 members of HELP from 23 countries worldwide) most of whom never participated in a student collaboration. The majority of the student activities were flexible, short-term (about 2-3 weeks), without major overhaul of the curriculum, which enables collaboration between students studying related or even different subjects, and having diverse desired learning outcomes. There were three main types of student collaborative activities: **peer-evaluation, topic-oriented discussion, and online seminar** with video support. Collaborations also were either open (all users of the CABWEB portal could take a part in the activity) or closed (intended only for dedicated groups of students). Activities took place between two or more group of students. Usually there was a 'host' group (initiator of the activity), who negotiated the collaboration arrangements and learning outcomes with other groups. In case of peer-evaluation (review) students had to introduce themselves, explain purpose of participation in the activity and - either to obtain feedback from peers on their project and then react to the evaluation provided, or to complete evaluation based on suggested criteria and get a feedback from the project authors. Student could participate on voluntary basis or be formally assessed (criteria of assessment were discussed with students in advance).

Enhancing Student Mobility through Online Support (ESMOS)

The partnership developed a project between higher education institutions from Austria, Bulgaria, Italy, Lithuania and the United Kingdom, with the combined aims of developing, evaluating and modelling the use of Virtual Learning Environments and online technologies to support students who took part in either a study exchange (ERASMUS) or work placement programme (LEONARDO), spending part of their studies overseas. The ESMOS project was built on the premise that there is great potential for developing a model of online support for European student mobility (especially now in the enlarged European Community) through reaching a mutual understanding and promoting best practice for student exchanges and placements, which would engage students in communication and activities, keeping them motivated and enhancing the quality of students' mobility experiences by providing them with a high level of continuous online support.

After in-depth needs analyses of those involved in international mobility programmes, the partnership developed a methodology for international student mobility (both virtual and physical) support using a variety of technologies and online tools, such as blogs, wikis, SMS, MMS and virtual classroom applications along with the 'traditional' VLE. The methodology was then used to inform the development of a Model for the Virtual Support of Student Mobility. For each online/mobile tool, protocols and guidelines were developed as

a guide for the various participants in the mobility process; students, academic staff, mentors and administrators. The resulting protocols and guidelines were implemented during the final phase of the project, where mobile technologies, online tools and VLEs into international student exchange and placement programmes for the purpose of student support see Figure 2.

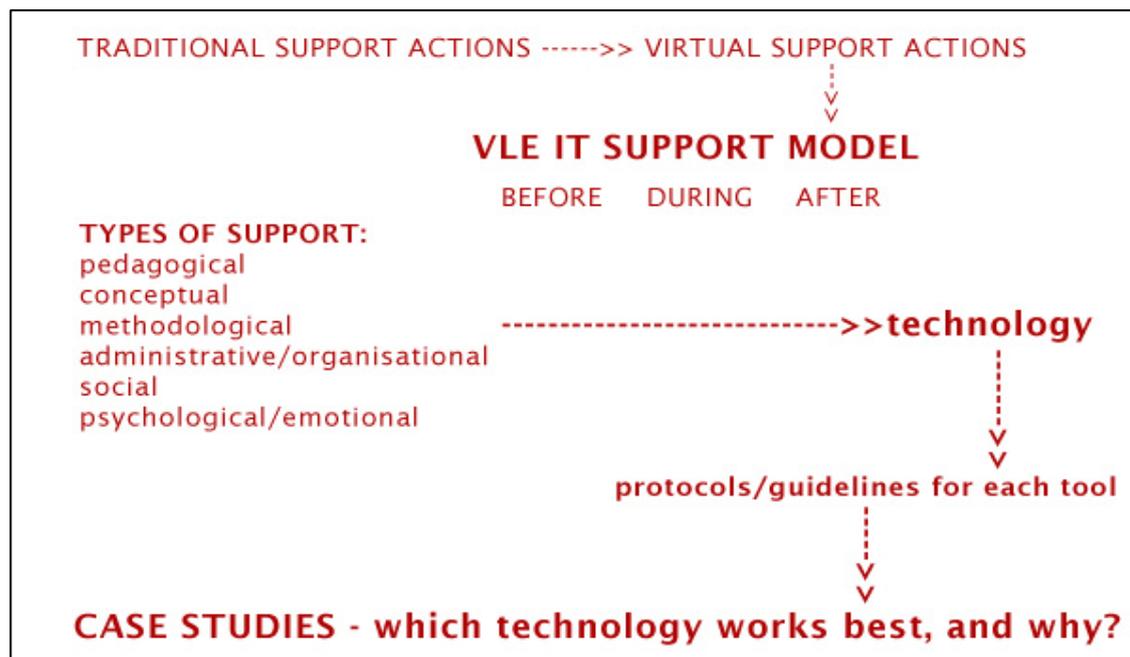


Figure 2 - ESMOS ICT Support Model

The original bid focused on Blackboard as the institutional VLE of the coordinating institution (Salford, UK). Through the lifetime of the project the scope was widened as each institution used different platforms. Two partners/institutions (AT and PL) developed their own placement management systems based on the system which was already used (and had been developed) by UNICAL (IT), adding their own communication spaces into the systems (IT version was an administrative tool). IT and BG used a standalone platform Blogger for the academic, social and practical support of international mobility students. In this paper, our focus is on the organisational and socio-educational issues raised by technology choice and configuration. Taking two studies as examples from the ESMOS project, a brief description of online mobility support follows, exemplifying two forms of virtual mobility alongside physical mobility, as in each case home-based students communicated with students who went overseas via a group blog, gaining an international perspective on their work and increased cultural awareness.

Data Gathering and Analysis

The first study is based on an action learning set of ten students from the BSc Adult Nursing degree at the University of Salford. Each student undertook a ten week clinical placement as part of the independent learning module; eight students stayed in the UK (although each at a different NHS hospital) while two students went abroad to work in a hospital overseas. The placements ran from June – August 2006 and during this period the blog was to support tutor and peer communication during the independent learning process. Because two students were abroad, the blog replaced the periodic face to face meetings and was used by all students as a placement journal to keep the group in touch; sharing key observations, feedback and learning experiences. Students were asked to post once a week to the group blog, and to comment on the posts written by their peers, and their tutor would also visit the blog and offer feedback to all.

In the second study, three Economics students from the D. Tsenov Academy in Shishtov, Bulgaria spent three months at the University of Calabria, Italy from February to April 2007. The students were provided with additional academic, social and psychological support from home and host staff, and their student peers, through online communication using a combination of group blogs complemented by instant messaging. Initially, staff from both institutions communicated via email in order to establish the objectives for the study exchange and the goals for the tripartite study, before exploring a variety of blogging tools in order to ascertain their suitability. Two linked blogs were set up using Blogger (a free external service): a staff blog to supplement/replace emails regarding organisational issues; and a student blog for reflection and support.

Skype (a free Voice Over IP system) was used by the supporting tutor from the international office at the D. Tsenov Academy in Bulgaria for ongoing communication with the three students in their first language, where they would discuss everyday difficulties and get advice and support. The tutor would then report back to all staff via the staff blog, where they could discuss any problems and make decisions, and then one of the tutors would report back to the students on their own blog.

Discussion

Both ESMOS and CABWEB established communities of learners and tutors: CABWEB focused on the educational aspects of international student collaborations online, ESMOS focused on the socio-emotional support of geographically dispersed students. On both projects, most of the online communication was in English, except when students conversed exclusively with their home group.

Student Satisfaction

Students perceived the support and collaboration opportunities offered by CABWEB and ESMOS as beneficial. On CABWEB, 84.7% of students agreed or strongly agreed that the collaborative activity was beneficial to their education. Students valued the opportunity to show their work to people around the world and being able to review projects of others. Those who were practicing language skills liked to use English outside the classroom with English speakers. Many students enjoyed learning about the other students' cultures and the subject they were studying. On the basis of evaluative feedback with staff and students involved in the ESMOS case studies, it was found that users felt that they benefited from, and were generally positive about blog-based communication in terms of online social, practical and academic support during the mobility period – whether physical (in the case of those who went overseas) or virtual (in the case of those who stayed at home, offering peer support and gaining an international perspective on their work). Interestingly, in both cases the students who went overseas increased their frequency of posting from weeks 4-6 of the mobility period which related to homesickness, while their use of/need for the blog then tailed off as they became more comfortable in their new environment. In both ESMOS cases, students expressed the view that towards the end of the mobility period, when they had adapted to the new culture, assignments were due and workload increased, blogging was viewed as 'another added pressure'.

Only 3% of CABWEB respondents had expressed a negative attitude to collaboration in terms of academic benefits. For those respondents, and for those who benefited in general, but had some negative comments, the reasons were classified as lack of or limited interaction; mismatch of subject related knowledge/skills of peers; perception of collaboration as additional, time-consuming task, without mutual benefits; harsh, unfriendly peer evaluation; and communication problems due to language issues. The adult nursing students on ESMOS who were less confident in using the technology were reluctant to contribute to the blog, and therefore ground rules were important in terms of frequency and length of contribution in order to prevent feedback comments only being given to user whose posts may be 'more interesting' than others. From a sociotechnical perspective, this raises issues in terms of who actually benefits from being part of an online blog-based community; if learners are reluctant to post due to lack of confidence/technological know-how, or if some participants gain more feedback than others, then there is a risk that only a proportion of the group will benefit from added online support. This reflects the reservations expressed by some of the students on CABWEB who felt disadvantaged if their evaluators did not respond in time for them to benefit.

Relationship of Activity to Home Programme/Module

On CABWEB, student activities were grafted on to an existing curriculum, either by offering the activity as an extra, or by adapting an existing activity to include another group of students (e.g. in peer evaluation activities). Because these activities were shared but not truly collaborative activities, they tended to be short term (typically two to three weeks) and attracted differential levels of interest and commitment from student cohorts. On ESMOS, students were on a study or work placement that replaced an element of their programme and the virtual interaction formed part of their support mechanism in their interaction with their home and placement tutors, and their home group of students. CABWEB students were more likely to obtain support from their home peers. This difference underlines that only a minority of students on a module would be on placement whereas all the students on a module could engage in a CABWEB collaborative activity. Such engagement offered lower risks (unless strongly linked to assessment) and lower costs for students, since they experienced no physical dislocation, only being required to engage online. However, the potential benefits for mobile ESMOS students was greater as they could have a fuller intercultural experience, particularly with the background support offered via the blogs, Skype and instant messaging.

ICT Tool Support/Multiplexity/Locus of Control

As we have described, the baseline support platform started out as Salford's institutional VLE for both ESMOS and CABWEB, and then changed to meet the needs of project partners and participants. What was different was that in the case of CABWEB, there was a tendency towards standardisation with the establishment of a reliable self-enrolment portal, with access to spaces that were either public or controlled by an enrolment key provided by the organising tutor. Tutors had been unhappy with accessing another institutions discussion board, or having to manage the setting up of accounts. In the case of ESMOS, institutional and organisational factors also impacted on the support platforms as it was found that there was no 'one size fits all' approach due to the different levels of technological and linguistic ability between participants.

There were variations in student and tutor facility with the range of communication technologies offered on CAB project and subsequently, the CABWEB portal. Although students generally found the Moodle tools easy to use, they made it clear that in some cases, such as chat, they would have preferred to use their tool of choice. In both ESMOS cases, an unanticipated finding was the ease with which students used certain technologies. In the case of the Adult Nursing students who went overseas, when unable to access a computer with an internet connection they would instinctively communicate with their tutor and peers via SMS. In the case of the Bulgarian Economics students, they did not need any training or introduction to Blogger as they were already familiar with the tool from their own experience. This demonstrates the potential shift in the locus of control with new forms of technologies and social software (Web 2.0), and it is not difficult to imagine scenarios where students actively seek support, even experiencing virtual mobility through 'experience by proxy', using sites such as Facebook to communicate with their peers, or even practitioners in their field as it is relatively easy to join relevant networks.

Organisational Aspects

On CABWEB, the organisation of collaborative activities could be quite problematic as it was difficult to find a period that fitted within the constraints of other module requirements, examinations and holidays. A tendency emerged for one tutor to organise the activity around their students' needs, and the other group to fit in. A common pedagogic model was used from the inception of the project (Whatley and Bell, 2003), and the tutors expressed satisfaction with the model, although it was not always easy to observe its influence on the organisation of the activity.

On ESMOS students were together (f2f), and tutors kept in contact through the staff blog which enabled an online staff community to run alongside the online student community. English was language of communication but not necessarily language of instruction. Usually collaborating students did not meet face to face. ESMOS mobility students were dislocated from their home peer group by virtue of their real mobility, although online co-presence gave them added support and enabled their home-based peers to experience a type of virtual mobility as they gained an international perspective through ongoing communication and discussion with the students who went overseas. In contrast, students in the CABWEB collaborative activities were co-located with their home peer group, yet had to work to create virtual co-presence with unfamiliar students in the mixed groups with whom they conducted their peer evaluations and online discussions.

Mobility as Change of Context

Our definition of mobility is based on change of context, and we can see that for different students, context is more or less changed. ESMOS placement students have experienced a significant change of context compared with their home peers, yet share a history and a virtual space. CABWEB students share a context (history, face to face and online) with their home peers but need to create a shared context with their international peers. On CABWEB, there was a wide variation in the visibility and online support offered by the tutor, and this lack of visibility could impact on student commitment and orientation to the task. On ESMOS, initially support mostly from home tutor, but as students gained confidence and experience and online community became a reality, there was a shift towards peer support with occasional facilitation from home tutor.

International online educational activities are, by their nature, extra-organisational, involving at least two organisations, in at least two countries. Hence, we cannot assume a common technical environment or even shared educational cultures. Tutors engaging in these activities need to make and sustain relationships with colleagues from abroad, and agree a platform for student communication, as well as effecting a pedagogic design that suits both parties and delivers learning outcomes. Thus where technology is used for student support in such activities, the key issues relate to the organisations involved, the sustainability of the activity,

and the needs of stakeholders. In both CABWEB and ESMOS, the international dimension also raised issues of intercultural dialogue and awareness. Tutors who are sufficiently motivated to organise virtual mobility activities are already alert to the pedagogic imperatives and opportunities, but may be overwhelmed by the choice of technologies available. We offer insights into technology decisions based on a rich appreciation of international and inter-organisational context to inform decisions made by those instigating virtual mobility for students in higher education.

Conclusion

For short-term exclusively online international activities, a standard platform (such as offered by CABWEB) has advantages as it provides some uniformity and structure for tutors and students who want to get started quickly, and use common resources. On the other hand, to give virtual support for real mobility, a flexible set of tools is indicated to accommodate the complex set of connections between student and home group, student and home tutor, and student and placement tutors. This last connection is part of the bigger question of the mobile student's integration into the placement institution's library and information services. In both real and virtual mobility, students are likely to adopt ancillary media (within their expertise and control) such as SMS, and increasingly Facebook, MySpace, etc. that allow them the means of communication without the need for staff intervention. Thus tutors supporting virtual mobility need to offer sufficient structure to provide a recognisable and easily-accessed space for semi-formal, observed communication and be open to private and self-initiated student communication through niche media.

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