An International Collaborative Approach to Supporting the International Learner

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Abstract

This contribution to international learning arose from two international collaborative developments that Southampton Solent University were involved with in 2006.

These developments raised questions of preparing and supporting international students, “cross-border” ICT-based course delivery, teaching and learning strategies for international learners and the collaborative development of international learning environments.

Informed by a review of the international learning literature and the practice of these two developments, potentially generic approaches to tackling these questions are presented and evaluated. This includes a model for preparing and supporting international students, the delivery of a course in decision support at an International Summer School and the development of a shared international environment and resource for teaching and learning databases.

An overarching conclusion drawn is that an international collaborative approach, facilitated by ICT, can lead to a richer and better supported experience for the international learner.

1 Introduction

This contribution to international learning arose from two international collaborative developments that the Faculty of Technology of Southampton Solent University (SSU) were involved with in 2006.

Firstly, a cohort of 12 students from the b.i.b. International College (b.i.b.) in Germany were expected to enter directly onto the final year of our Computing and BIT degree courses at SSU in September 2006. This raised the question:

How should we prepare them before they come, and support them during their studies, by an effective and efficient process?

Secondly, as part of an EU Socrates-Erasmus partnership, SSU were invited to deliver a 3-week course in "Modelling and Analysing Data for Decision Support" (MADDS) to a group of international learners at an International Summer School at the University of Applied Sciences, Hof in Germany in July 2006. This raised two linked questions:

How should we deliver in Germany (or anywhere else if the need arose), reliably and efficiently, a resource-based, practical course developed in the UK?

and

What teaching and learning strategy should we implement for a culturally diverse group of international learners?

Following these two separate developments, and in seeking to gain further value from the relationships established, it prompted the question:

What potential shared international teaching and learning environments and resources could we collaboratively develop to benefit learners and tutors in our respective institutions?

This paper discusses and evaluates the approach we took to tackling these questions. Although the questions cover quite a wide span, the collaborative, international approach we took, and the facilitating role of ICT, are key unifying themes.

Background is provided in section 2. Section 3 is a review of the literature on international learning that informed the approaches we took. Section 4 discusses and evaluates our developing approach to supporting the b.i.b. students, section 5 discusses and evaluates the approach to delivering the decision support course at Hof and section 6 discusses progress with respect to developing shared learning environments. These approaches are evaluated, and further work is indicated where appropriate. Section 7 draws key conclusions.

2 Background

The work which underpins this paper and a response to these questions was undertaken mainly during a contiguous 4-month period, split into two parts, in Germany from April to July 2006. Background to the two institutions in Germany, the relationship with SSU and how the work was resourced is provided in this section.

b.i.b.

The first part was based at the b.i.b. International College in Paderborn from April to early July in 2006. b.i.b. is the "Bildungszentrum fuer Informationverarbeiteende Berufe" - ie the "Educational Centre for Information Processing Professions", and was founded in 1972 at the initiative and support of computer pioneer Heinz Nixdorf. b.i.b. is now a private, non-profit making institution that is quality assured by, and receives income from, the German HE system. b.i.b. focus on educational and training courses in IT, computing and business.

b.i.b. has a number of other campuses in central Germany located at and between Bergisch Gladbach in the west and Görlitz in the east, and a total of around 2000 students. b.i.b. Paderborn is on the same site as the Nixdorf Computer Forum - reputedly the largest computer museum in the world.

The collaboration between b.i.b. and SSU started in 2005 with b.i.b. seeking a direct entry or "top-up" route at level 3 for their Computing and BIT students. The first 3 "trial" students successfully completed the 3rd year of a BSc (Hons) degree in Computer Studies in July 2006, 12 completed successfully in July 2007, 24 are currently on the courses, and up to 45 are expected in 2008. 12 students are also currently on the SSU Southampton Business School courses, and up to 35 are expected in 2008. Short visits of teaching staff in both directions have taken place.

fh-hof

The second part was to deliver the MADDS course on an inaugural 3-week "Enterprise Computing" International Summer School at the University of Applied Sciences (fh-hof). Fachhochschules (the basis of the "fh" prefix) are vocational universities in the German HE sector offering primarily undergraduate and masters degrees. fh-hof was established in 1994 in the state of Bavaria. It is a highly modern, 24-hour access campus offering undergraduate and masters degrees in computing and other technical subjects, as well as business administration.

Resources

A key resource for completing the work was remote desktop/VPN (Virtual Private Network) access to the author's PC in SSU from the fh-hof and the various b.i.b. campuses in Germany. This enabled access "as normal" to applications and files.

There was no discernible degradation in performance over the international network except occasionally at peak periods. Reliability was high with only occasional breaks in connection, and the PC in SSU only needed to be rebooted on a couple of occasions. The SSU desktop was used about 90% of the time, and the local desktop about 10% of the time. The direct transfer of files between SSU and b.i.b. or fh-hof server drives was as quick as working at a PC on a local area network.

The remote desktop access resource facilitated the completion of normal SSU teaching and administrative responsibilities. Face-to-face teaching for 3 weeks in April/May was covered by a *quid pro quo* arrangement with an SSU colleague. Travel costs were covered by the EU Socrates-Erasmus programme. Accommodation was paid for by b.i.b and the fh-hof. No significant costs were incurred by the Faculty.

3 Review of International Learning

This review informs to some extent the approaches we have taken now and might take in the future to tackling these questions.

Preparing and supporting international students

Some sources (eg UKCISE [1]) argue that it is important first to devise a strategy for supporting the international learner. However, there is little evidence of actual strategies and models that have been shown to help course teams in supporting international learners. Moreover, there is little evidence of more collaborative approaches in supporting the international learner except perhaps in the context of joint degrees.

There are several studies arguing the need for induction (Ottewill [2], Ferris [3]). Furthermore, there is wide agreement and practice now for the preparation of international students for study before arrival (eg UKCISE [1]). There are a number of general web sites (eg British Council [4]) which provide general cultural, procedural, language and other essential information. It is difficult to access and assess the provision of general and/or more specific support in institutional virtual learning environments (VLEs) and intranet sites.

There are many studies that focus on approaches to encourage cultural “mixing” and integration, and the taking into account of varying teaching and learning backgrounds. These refer to the use of online collaborative tools (such as blogs) to facilitate this. However, there is less evidence of the provision of more specific academic preparation, although some authors (eg Kimber [5]) discuss the need for preparing for undergraduate final year projects.

It is apparent from the literature that there are many different aspects to potentially improving the international learner experience. Section 5 will show how we have analysed our particular international learner support requirements, and have designed and focussed our provision and support accordingly.

Delivering practical courses remotely and across international borders

There is comparatively little in the literature on delivering practical courses, whether online or not, in other countries or to learners of varied cultural backgrounds.

One general approach for courses is to use a web-based VLE that enables the delivery of learning resources, and of generic VLE learning tools, remotely. For example, Global Campus [6] at Middlesex University is a learning environment designed to support international learners at a distance in tandem with local support tutors.

The provision, operation and support of software applications for practical learning activities is more problematic though. Festervand et al [7] discussed the delivery of a US Information Systems course in France, including issues of language/keyboard differences and the use of the Excel spreadsheet and other applications.

The availability of open source and virtualisation software, and the improvement of international functionality of application and operating system software, has certainly eased the teaching and learning of IT/computing subjects in recent years. However, there appears little in the literature on this subject.

Teaching and learning strategies for culturally diverse learner groups

Many studies refer to differences in teaching and learning cultures, but there appears comparatively little on strategies and approaches for handling culturally diverse learner groups. Moreover. there appears little in the literature relating specifically to computing/IT courses.

Development of shared international teaching and learning environments and resources

There are a number of strategic sources that call for the development of collaborative projects such as joint degrees etc. For example, the Bologna Declaration [8] asserts that the *"The European dimension shall be promoted in HE through curricula, inter-institutional co-operation and mobility schemes for both students and teachers/researchers"*.

However, there seems less emphasis on practical, subject-based developments that could also yield mutual benefits to institutions and their learners. The British Columbia Centre for International Education [9] argues for *"linked assignments*

which require interaction with other cultural groups, domestically or abroad in order to gain international perspectives related to the completion of a specific project or assignment". They also argue for staff experience abroad (which we would agree with of course!). One good example of international collaboration, which recognises the importance of the international dimension in geography, is the International Network for Teaching Geography in Higher Education [10].

4 Preparation and Support of the b.i.b. International Students

The homogenous educational and cultural characteristics of the international students (ie all from b.i.b. and Germany), and the economic size of the cohort (currently 24), enables a more focussed "horses-for-courses" strategy than would normally be possible for supporting smaller numbers from more disparate cultural sources. Furthermore, the ESRC [11] asserts there are many similarities between the German and UK HE systems and learner experiences.

Our current strategy can be explained in the context of the model in Figure 1. This shows a cyclical, continually reviewed process (of up to 24 months for the one academic year of study) from attraction to graduation, and an online environment (including the SSU myCourse VLE) to support this process. Specific "actions" that the b.i.b. student can take at each stage in the process are also indicated. This strategy is also designed to achieve not only effective support, but also efficient support as the number of students scales up.

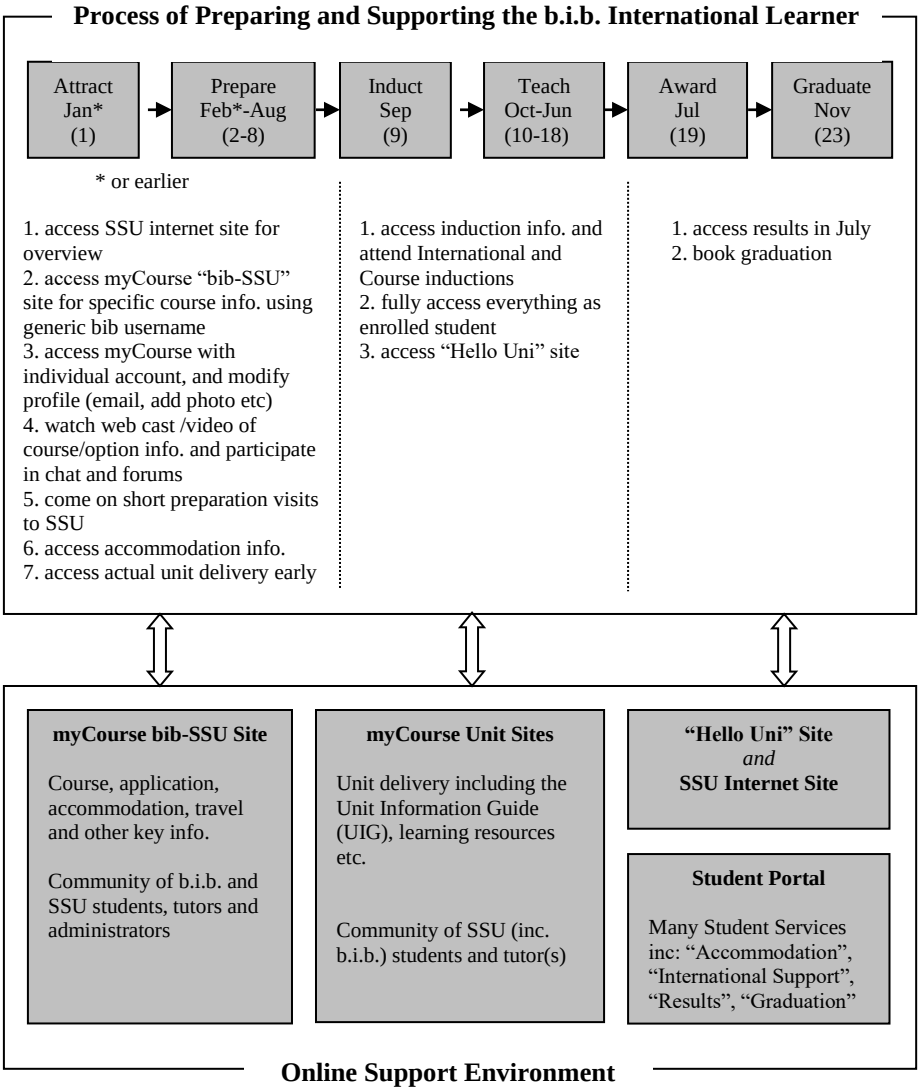

Figure 1 – Model of Preparing and Supporting the b.i.b. International Learner

The review of the overall approach, and an update of the current cohort's progress, takes place conveniently in November when the b.i.b. leaders visit for the previous cohort's graduation.

The “b.i.b.-SSU” site is subject to continual update and improvement, and supports throughout the process including when SSU staff meet the b.i.b. students in Germany. Figure 2 provides evidence of usage by showing the “hits” on the site at an average of around 20 from October to December 2007, but then steeply rising to around 170 in mid-January 2008. Note that a brief peak of 25 “chat” posts occurred in a trial of a web cast to b.i.b. followed by a chat session.

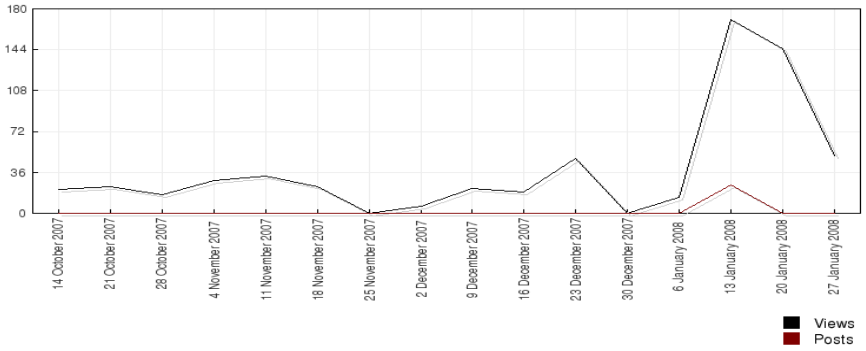

Figure 2 – b.i.b. Student Usage of the SSU- b.i.b. Site in the “Attract” and Early “Prepare” Stages

One specific and important area of preparation and support relates to the curriculum. A detailed analysis (not included here for the sake of brevity) revealed that the match between the levels 1 and 2 computing curriculum (thus enabling direct entry into level 3) was remarkably close between SSU and b.i.b. However, we have identified that the academic aspect of the final year project and software requirements analysis are areas where the b.i.b. students could benefit from some additional preparation. This was achieved through short, relatively low-cost exchange visits by relevant subject staff, and access to learning resources online.

Informal and anecdotal feedback from b.i.b. students and staff (and SSU staff) of this provision is good so far. However, further research and a methodology is required to measure how effective and efficient this online support is, and how it might be improved. One enhancement possibility, for example, is to extend the use of collaborative tools such as forums and blogs. A further and broader question is whether a more generalised form of the model could also be applied to other course contexts with (or without) the presence of international learners.

5 Delivery of the “MADDS” course at the fh-hof

This course is described in some detail as it contributes significantly in context to the international themes of this paper. However, the “decision support” subject content is kept to a minimum.

Overview

The course initially sets data warehousing, online analytical processing (OLAP) and data mining in a business need context, and then focusses on a practical approach to multi-dimensional/OLAP modelling and analysis using iSQLPlus/Oracle and Excel/OpenOffice spreadsheet tools.

The 1st week of the course revised key underpinning database skills, the 2nd week focussed on establishing OLAP concepts and techniques, and the 3rd week focussed on applying these skills to a more realistic business decision support scenario. This scenario contained international data (eg of a country such as Germany) which enabled students to develop solutions they could better relate to.

The course was taken by mainly final year degrees students from the Ukraine (2), South Africa, Sudan, Poland, India and Albania. The course was rated 7.5 credits under the European Credit Transfer and Accumulation System (ECTS). All the students were capable, motivated and consequently passed.

Teaching and Learning Approach

The approach taken was adapted from that used by the tutor when delivering this topic in the UK. Essentially, this is to apply an appropriate mix of face-to-face and/or ICT-based teaching and learning methods to meet the learning outcomes, and to cater for as wide a range of learning styles and cultural backgrounds as possible.

The approach was underpinned by a wide range of online learning resources including a course narrative, presentations, digitised chapters from books, online quizzes etc. Initially, concepts and techniques were presented by a mix of specified background reading, lectures and demonstrations. This was followed by corresponding and focussed practice activities. The student then drew upon, and synthesised from, these established core skills and knowledge in the context of the business decision support scenario in the 3rd week.

80% of the students on the MADDS course were familiar with the mix of approaches (including student-centred) used on the course. 90% of the MADDS students also found the online provision of resources very helpful to their learning. It is also the case that these views were consistent with the b.i.b. students studying this subject on the computing/IT courses at SSU.

Online and "cross-border" course delivery

The practical context and learning resources for this and other database courses have been delivered online to both distance and on-campus learners via the SSU virtual learning environment (VLE) for the past 5 years. This includes access from outside the firewall to the OLAP databases in an Oracle server using the iSQLPlus

tool. This server-based approach was used without change for the delivery of the course at the fh-hof.

The only significant difference was the use of OpenOffice (in addition to Excel) on the client. An English language environment was achieved by using VMWare virtualisation software in conjunction with a Windows operating system acquired under the Microsoft Academic Alliance, and the use of USB US keyboards.

The approach we took proved successful with no significant issues to resolve. This was confirmed by student feedback. Notably, 100% were satisfied with the speed of retrieval of data records from the UK over the internet.

6 Shared International Teaching and Learning Environments

The rationale for establishing a shared international teaching and learning environment is to provide a richer, more realistic, international experience for the learning of a subject (in this case databases) than might otherwise be possible. An economy of effort could also be gained from the sharing of the associated learning resources.

We decided to start with establishing an international distributed database based on an international company scenario. For example, the employee records of the German site of this company are held in the local database in Germany and similarly with the UK employee records held in the UK. The actual databases are of course at the fh-hof and SSU, but this is transparent to the student and so this is indeed a realistic international distributed database scenario.

In addition, the associated learning resources for distributed databases have been made available through the SSU VLE for the benefit of the fh-hof, b.i.b. and SSU students in 2006-07 and 2007-08. Anecdotal feedback so far is good.

Following further development of the international distributed database, we aim to experiment with sharing the teaching of this and other database topics such as OLAP. One possible model might be for the tutor at SSU (say) to facilitate/lead the teaching of distributed databases (say) with video-conferenced sessions, e-moderation of forums, chat sessions etc. The tutor at fh-hof would provide the backup face-to-face support for learning and assessment with the fh-hof students. Tutor roles could then be reversed with the tutor at fh-hof facilitating/leading the teaching of OLAP, say. All of this would be underpinned by enhancing the existing SSU online database of database learning resources with resources from the fh-hof. This should result in a significant economy of effort as well as a richer teaching and learning experience.

It should be acknowledged here that the IT systems and network staff of all three institutions played a key role in enabling this development.

7 Conclusions

Practical approaches to four questions of international learning, informed by the literature, have been presented and evaluated. However, further research is needed to determine the efficacy of these approaches and the potential for more general applicability.

The developments discussed in this paper provide further evidence that ICT, with its improved functionality, reliability and performance, is now able to facilitate the effective and efficient internationalisation of courses and learning. Furthermore, it illustrates (and reinforces) that an international collaborative approach can lead to a richer and better supported learning and teaching experience for the international learner and tutor respectively.

8 References

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