Introduction

This pilot project examined the provision of flexible support to University of Northampton (UoN) students who are unable to access mathematics and statistics support, due to individual time and distance barriers. Our study was initially only concerned with engineering students, but was subsequently opened to all students. With the increase in widening participation, distance learners and part-time students entering higher education, the demand for mathematics support has grown (Davies and Elias, 2002). The need for mathematics support also exists for traditional students, as good school grades can no longer guarantee a smooth transition to engineering courses (Croft and Grove, 2006). Currently at UoN, we provide any student on any course the opportunity to access one to one tuition in any mathematics and statistics-related query. This is done through drop-in sessions which take place throughout the week on campus. What happens to those students who are unable to attend the drop-in sessions?

Following discussions with sigma and their subsequent funding of the project it was decided that the best way to support students who could not attend drop-in sessions was to provide an online one to one tutorial via video conferencing. Masouros and Alpay (2010) assert that this is a key attribute in providing an effective online learning resource. This pilot intended to examine the effectiveness and uptake of providing this support, the benefits to both students and staff as well as identifying any barriers.

Methodology

While we were optimistic about this pilot from the outset, we soon realised that “there is a lack of practical and field-proven models adapting such an approach” (Li et al. 2010). As such the University’s learning technologists were brought in to discuss the most effective online tool for support. Skype was quickly identified as the most effective tool for the pilot. Founded in 2003 Skype is free and simple to download and allows users to access video-conferencing software, computer to computer. It has a share-screen facility, which is particularly useful in sharing files or demonstrating key concepts. It is used and recognised worldwide; at peak times there are 40 million users online. Also, as part of Microsoft, it is likely to remain free and be supported in the long term (Skype Limited, 2012). To complement the online tutorials we decided to use Uniboard software, which would quickly and neatly enable us to provide visual diagrams, shapes and grid backgrounds to aid explanation and demonstration of concepts.

A key barrier to online support was identified as the students’ access to equipment. It was decided that students would be given the opportunity to borrow computers. We
also identified the need to provide students with information on how to download Skype. Students were able to make an appointment themselves through the University’s website, via telephone, or in person. Since students we were targeting were unable to attend during the conventional working week, appointments could be made outside of these times. We attended the induction week for all new engineering students to make them and their lecturers aware of all the support available and advertised the online support on our web pages.

Throughout the whole process we were mindful of the findings of Masouros and Alpay (2010) who identified advertisement, publicity and human interaction as the main strategic aspects to enhance the teaching of mathematics.

Results & Discussion

Unfortunately at the time of publication no students had utilised the online one to one tutorials, whereas during the same period we saw an increase in the face-to-face support. When it became apparent there would be a low turnout from engineering students we opened the pilot to all students. The key research question that has emerged from this pilot has been why the students have not attended, and this has now become the focus of the research. Grehan et al. (2011) have suggested that students do not attend mathematics support centres due to fear, lack of personal motivation and awareness. This may be part of the reason, but it does not fully explain why students did not access the online tutorials. Empirical evidence gained by asking those students who attended the tutorials in person suggests the online tutorials were regarded somewhat as a second class service and they preferred the face to face contact. Whilst this feedback is useful, the pilot was predominately aimed at those students who could not attend in person. Further research is needed to establish why distance and part-time learners did not make use of this service.

Reflecting upon this pilot it could be argued that the non-engagement of students was due to a number of assumptions made at the outset. Firstly that students would be happy to receive the support in their home environment. They would trust the reliability of the technology as well as their own proficiency in using the technology. Finally, and most importantly, they wanted this support. In their research Li et al. (2010) have concluded that students do not want to study in their home environment as it is not always conducive to a productive working atmosphere. They also argued that students would not tolerate technical issues and are put off using technology if they thought there was a chance it might not work. Perhaps our first two assumptions were not correct. However, Hargis and Wilcox (2008) strongly agree with our assumption that technological advances become second nature to higher education students, as “they spend so much time utilising social networks such as Facebook and MySpace”. Perhaps this is true for some, if not most students, but arguably it is not true for all.

Conclusions

This pilot has had some unintended benefits. The use of Uniboard software and PC tablets are now used regularly in face-to-face tutorials providing an effective and immediate learning tool. Furthermore this pilot has been used as a case study at UoN to outline the limitations and inform others undertaking a similar task. Most of all, this pilot has provided us with an opportunity to undertake further research to find out why students are not yet keen to engage.

With advances in technology it does not necessarily follow that there will be advances in learning. When we trialled the online support, we had a few technical issues which were resolved before the pilot went live, but the technology worked. We were able to see prospective students who were in another room, or another county. We could observe body language and maintain a personal connection to the student. The sessions could be recorded and sent to the student for them to refer back to instantly. We had achieved in our minds, exactly what was required. Was this something the students actually wanted? Judging by the non-engagement, it appears that they do not. It just shows you that you can take a horse to water . . .

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References

Hargis,J. and Wilcox,M., 2008. Ubiquitous, free, and efficient online collaboration tools for teaching and learning. Turkish Online Journal of Distance Education, 9 (4) 9-17.