Supporting Face to Face Teaching

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Abstract

The needs of Graphics and Visualization Education (GVE) are often more demanding of teaching facilities than are other subject areas. In the UK there is political pressure to improve the student experience through assessment of subject areas and as a result of the introduction of student fees. One area is the need to improve the teaching facilities and methods of delivery. GVE may be considered to be very specialist and not a key driver for facility improvement. The requirements, when met, can however provide improvement for all. There is also a need for widening the use of the techniques. Despite many awareness raising exercises, the techniques are still seen as being specialists and there is little penetration in some subject areas.
Keywords: *teaching rooms, teaching methods, online learning, student experience.*

1. Introduction

When delivering Graphics and Visualization Education there is a need for the provision of appropriate teaching space and/or technology for flexible learning by students at a time and place of their choosing.

This paper focuses on the needs of the teacher and the student for face-to-face teaching and the pressures on Higher Education Institutions for the provision of suitable teaching space. The perspective given in the paper is a UK one and is based on work undertaken by the Advisory Group On Computer Graphics (AGOCG [1]) and the funders of that initiative, the Joint Information Systems Committee of the Higher Education Funding Councils (JISC [2]). Some of this work is now being taken forward by the UK's Standing Conference for Heads of Media Services [3].

The paper concludes by recognising the benefits which might accrue to many teachers and students if the requirements of GVE are met within teaching space provision,

2. Teaching Space Provision

Provision of teaching space in UK Higher Education Institutions tends to be a mix of centrally owned rooms and departmentally owned rooms with support provided by the centre or by the department. Equipment in rooms may be installed or may be supplied as required for particular lectures, normally through a booking system. The result of centrally owned space and insufficient funding is that use of the space is efficient but that the facilities available and the support provided tends to be at a relatively low level across all rooms. The facilities are often inconsistent. Booking of rooms is rarely based on facilities required by a teacher but simply on student numbers and, perhaps, special access requirements, e.g. wheelchair access. The AGOCG case studies showed virtually no links between room bookings and the requirements of the teacher for facilities to support their preferred teaching method. The result is a very slow move towards the use computers for face to face teaching. Lecturers tend to prefer to use low levels of technology e.g. OHPs, slides and writing boards as these can be guaranteed.

3. Political Pressures

There are a number of political pressures which make this an interesting time in UK Higher Education.

3.1. Teaching vs Research

The UK Higher Education Institutions are all subject to external reviews by Government. These cover research, through the Research Assessment Exercise and teaching and learning through the External Subject Reviews (formerly the Teaching Quality Assessment).

The pressure to deliver results in both areas is common to all institutions (about 185 in the UK), though aims and aspirations vary. The pull on resources as institutions strive to improve on research results can have an impact on the funding for teaching resources and support.

3.2. External Subject Reviews

The External Subject Reviews focus on the student experience and are an intensive assessment of the delivery of teaching and the learning within a subject in a University. The provision of appropriate teaching space and facilities is part of this review.

3.3. Flexible Learning

The current government strategy to develop life long learning and to expand the Higher Education sector means that a greater range of teaching and learning methods need to be put in place if this is to be achieved. The need to provide more flexible learning methods allowing students to learn at a time and place of their own choosing for some or perhaps most of their studies will be embraced as a concept in different ways by different institutions. Many will adopt new methods to some degree.

3.4. Student Fees

A further pressure to focus on the student experience comes from the very recent introduction of student fees to be paid by all in UK Higher Education.

4. The Perspective of the Teacher

The teacher needs to feel that they have a guaranteed availability of facilities before using different technology for their teaching. The lack of online access and data projection in teaching rooms results in caution and a lack of willingness to use new technology in teaching face to face situations. There is also a lack of confidence in many teachers which needs to be overcome with training and support. Teachers need to think about fall-back procedures if things go wrong and to be supported to develop these.

5. The Perspective of the Student

Students are expecting to be able to access resources online. Lecture notes and support materials should be made available online to support the wide range of students enjoying higher education today. Such students may be working their way through University (common in the US but a new feature of UK Higher Education) who may not be able to attend all lectures. The availability of materials online is also critical in supporting the education of some students with disabilities who may only be able to access materials in a way modified to support their particular disability.

Students also expect to be able to see the materials and many rooms are unfortunately not suitable for data projection. Some examples and good practice guidelines are given in the AGOCG case studies.

6. Teaching Space fit for GVE

Teaching space that is "fit for purpose" is the key to a successful experience for both the student and the teacher. The requirements for GVE are towards the top of the range of requirements. Online computer access, data projection, good resolution display, suitable blackout, dimming lights are all needed. Such requirements would benefit all. Yet, these facilities are far from common in UK Higher Education across the large numbers of teaching rooms.

7. Widening the Use of GVE and Promoting the Benefits

At the same time, there is a lack of both awareness and takeup of graphics and visualization tools in many disciplines. Many disciplines could benefit from the use of these tools in both research and in teaching. In many disciplines the lack of takeup has been a result of a number of factors including lack of inter disciplinary working and a lack of equipment funding.

The social sciences have been identified by AGOCG as disciplines which could benefit from the takeup of visualization techniques, particularly in regard to the analysis of large and complex datasets and other data mining activities. Workshop output and case studies can be seen on the AGOCG Web site.

There is a major contribution still to be made by those who have been involved in Graphics and Visualization techniques in both research and teaching for some years. The techniques are applicable to many subject areas which have thus far still been little touched by awareness of the potential of these techniques. The use of such techniques in a wider range of subjects and the demand that would inevitably cause for improved teaching facilities and the development of new teaching methods in areas beyond Computer Science would benefit many.

References

[1] Advisory Group On Computer Graphics, http://www.agocg.ac.uk (including various reports relating to Lecture Room Services at: http://www.agocg.ac.uk/reports/mmedia/casestdy/casestud.htm

[2] Lecture Room Services, Workshop Report http://www.jisc.ac.uk/pub98/assist3.html

[3] Standing Conference For Heads of Media Services http://pari.mmu.ac.uk/msh/welcome.htm