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Enhancing practice: to investigate an appropriate strategy for using Clip Cetl enhanced textile facilities to improve the student learning experience.

Clip Cetl Category: Improving student learning experiences:
the fellowship set out to improve a specified learning activity within particular course contexts, including students in the evaluation of the project.

Introduction

The fellowship project, which ran from Sept 2006 to Sept 2007, aimed to investigate and identify an appropriate strategy to inform the planning of course teams for the use of LCF's enhanced textile facility at Lime Grove. The project aimed to design material to underpin workshop based specialist skills and establish a system to encourage the creative use of new equipment. The work aimed to enrich the student learning experience and enable students' learning to be organised on a more flexible basis by supporting independent learning.

Medium Term Strategy

The fellowship supports the University of the Arts medium term strategies of enhancing the quality of learning and teaching and of enhancing the student experience. E-learning and independent learning are key issues within the development of HE at the London College of Fashion and the University of the Arts London.
Investigating student learning was key to the project. It was intended that student interaction, learning teams and blended learning would be explored in relation to the practical subject area.

Additionally, by enhancing the quality of the student learning experience in the workshop, work-based simulation, an essential component of the Foundation Degree Design and Technology course at the college, would be improved.

Track record

I have been involved for several years in the development of independent learning materials to enhance student learning. My MA Fashion Studies Independent Project investigated the design of an interactive teaching and learning resource for fashion embroidery. I also contributed to the collaborative online teaching and learning resource *Materials Collection.*

Context

The Dearing report, 1997, acknowledged the problems that would face Higher Education for the next 20 years with an increase in student numbers in HE creating new challenges in education. Laurillard noted in 1993 that there has been an increasing emphasis for students to become more independent learners.

In March 2005 the HEFCE set out their strategy for e-learning detailing their commitment to working with partners to fully embed e-learning in a sustainable way within the next ten years and identified their goal in being to help the new technology to become an embedded part of the activities of the sector.

Within the London College of Fashion the CLIP CETL funding bid considerably enhanced the textiles equipment at the Lime Grove site within the embroidery workshops. Embroidery has been taught at the college since its foundation and has been maintained as a core subject specialism from Foundation through to Post-graduate levels and research. The range of textile equipment CETL funding enabled the college to purchase was selected to provide, where possible, state of the art industrial equipment for student use or a viable simulation process of industrial design and production. The rationale for the purchase of equipment was student driven, providing access to equipment for students irrespective of their ability to pay by siting equipment within the workshop areas rather than it being limited to a bureau service. All surface textile students need to be aware of how to design for new technologies within the subject area.

Prior to the new equipment spend there was only one CAD embroidery workstation, one manufacturing machine and one desktop printer within the embroidery workshops. There are now ten embroidery CAD stations with two CAM manufacturing machines, one laser cutter with twelve laser software stations, a digi pen and plotter for inputting of pattern piece data and two desktop printers for textiles. With the increased equipment there was a need to identify how course teams could plan appropriate use of the new technology to enhance student learning within the limited access time allocated to each course and group owing to current LCF numbers. This was the driving factor behind the fellowship application - to enable the new technology to be embedded within the curriculum across all levels in a sustainable way. I was interested in undertaking the project as I have a strong focus on technology within my teaching and with digital textile technologies within my research practice.

Methodology

What I planned to do?

Timescale

The timescale for the project was spread throughout the year rather than being contained within the normal one term fellowship format to enable investigation, design of material and evaluation and feedback from students.

Research through previous projects into supporting students as independent learners suggested in part a digital response. IT could offer a developmental solution for the enhancement of learning to address a number of significant factors that have affected teaching within the textiles for fashion subject area at the London College of Fashion: increased student numbers; increased diversity and widening participation, disappearing access provision and shorter course lengths. As with many art and design disciplines textiles is a tactile as well as visual subject and much is 'learning through doing', the learning experience being provided by subsequent reflection and discussion between student and staff. There is a need therefore to maintain the studio time for demonstration, discussion and experimentation.

Development of independent learning materials allows for access to a body of knowledge by the student during independent learning allowing more focus on student centred learning.

These materials in combination with a programme of taught delivery and demonstration would enable students to develop real employability skills, importantly not merely using the software to produce product but to support and develop their skills in relation to the workplace.

Industry has identified the lack of such skills and the need for their development. Roy Burton from YES CAD/CAM Embroidery Company identified such needs in a recent article in *Printwear & Promotion* industry magazine.

Previous research on theories of how learning takes place, different learning styles, information on open and distance learning and the development of multimedia material was considered during the development of the material. The materials represent mediated learning with selected examples promoting an aesthetic encouraging creativity and diversity.

The University's IT Research & Development Unit (ITRDU) has supplemented Blackboard with tools that support the integration of visual content, allowing for the VLE to become not only a text delivery method but also an 'interaction mechanism' (Dickerson & Kennedy 2005). Part of the plan of the fellowship was to use materials developed for e learning or independent learning as part of a blended learning and teaching strategy for the subject area.

It was planned to use BB image board to integrate images with threaded discussions. *(On BB image thumbnails are displayed alongside text discussions, allowing students to have text and images in direct proximity to each other).* Image board was to be used to allow students to document the stages and processes in the creation of samples created using the new technologies with online comments from

peers or staff. Some coureses were to be asked to use this a tool for creating a reflective journal as part of the blended learning activities in relation to the resource.

CLIP CETL funding has allowed for a technology rich learning space to be created within the LCF textiles area. The fellowship planned to use new Clip cetl funded technology to embed the Clip Cetl funded textile equipment. By working in consultation with industrial contacts the CLIP CETL video and media specialist, Oliver Furlong, developed a camera that works as a document camera but that is also capable of being freely manoeuvred to demonstrate detailed practical work wirelessly to large groups of students. Importantly the camera would have the capability of recording the image for use on VLE. This was trialled in the lead up to the fellowship in embroidery at the Lime Grove site and gave excellent results and it was intended that this would form a key part of recording for the fellowship. The cameras however owing to technical manufacturing issues beyond our control were not available at the sites within the timeframe of the fellowship and alternative methods of capture had to be used.

Project phases

The Project phases during the year were:

- Research
- Analysis (student interaction and student feedback)
- Implementation
- Editing (student evaluation and feedback)
- Dissemination

Research
October-December 2006 -
Comparative practice was investigated:

- the following colleges/universities with technology rich environments were visited: Bradford, CSM, Chelsea, Glasgow, Lycée de la Mode, London Metropolitan University, University of Hertfordshire and the research information gathered was used to inform practice
- existing resources were investigated through the library/internet and the information gathered was used to inform project outcome planning
- industry practice was investigated through visits to GS UK, Amaya, Wilcom, YES Embroidery company to inform content planning. Additionally the IMB 2006 industry fair in Cologne provided useful technology updates to advise further Clip Cetl spend textile during the fellowship year
- pedagogy research investigated learning teams through the library/internet and staff meetings/discussions with information gathered informing learning and teaching strategy planning

Technical handouts were prepared and edited through use by individuals and student teams

Analysis
January – March 07 -

- a period of analysis of data with evaluation of progress of teaching and learning strategy informed the further planning and development of materials and plans for the use of the remaining fellowship time
- materials & samples were produced
- staff worked with students/groups to develop samples/products using the technology that will be documented for future inclusion
- on-going feedback from student focus groups was used to review and edit the resources
- testing was planned on the integration of blended learning activities during this period. However as the planned resources were not complete enough at this time owing to many technical installation problems with the new textile CAD and IT equipment, this element of the fellowship had to be postponed.

Implementation

April 2007

- content and delivery strategy was refined and tested with student groups.
- content of some products was revised.
- production of some components was continued
- evaluation with student focus groups from FDA FDT

Dissemination

- outline appearance on some course sites (Credit Framework)
- Fellowship report
- copies of materials to be lodged with Clip Cetl and on the CAD stations within Lime Grove and other sites as appropriate - December 2007
- introduction in teaching and learning FDA FDT, BAFS, BA FDT programmes

What did I find out?

- knowledge of other colleges' strategy for integration (or non-integration) of resources into the curriculum
- increased experience of working with learning teams
- increased technical knowledge of development of learning materials
- new (to me) methods of developing resources to support independent learning (video clips, Camtasia software, Smart boards, Moby-gos)
- the chance to experiment with new audio visual technology

The idea of the fellowship originally proposed had to change.
How? Why?

- being technology led, problems with the new equipment, installation of software and issues involved around the move to a new block within a new site delayed the completion of the initial phases of the project.

- teaching strategies planned had to be revised as the project developed in response to delays owing to technological and IT /CAD issues. Focus groups and feedback schedules had to become more flexible.

- owing to the technological delays some of the intended resources took longer to develop and review than others. Moby go cameras, although researched in the summer prior to the fellowship proved problematic when delivered in the Autumn term and were available too late for inclusion in the fellowship. However through revision of the project and with assistance and support of the Clip Cetl team and in particular Oliver Furlong, possibilities for different outcomes were investigated and produced and the research gathered will inform further developments.

- ring fencing time was difficult

- working in workshops alongside students was almost impossible!

Development, analysis and evaluation

Staff and students were consulted in the early planning stage, and in the construction and mapping of content. Students were given the opportunity for evaluating the hard copy (not digital) material at different stages of the project, in both written form (questionnaires), focus groups and through the tutorial process in the case of the FDA FDT course. It is intended to continue the evaluation process through these mechanisms during the coming academic year, 2007-2008, with returning cohorts from FDA FDT, BA FDT and BA FS students in addition to revising resources during the current year 07-08.

Students were used as primary indicators of improved learning. Evidence of how the fellowship improves the student experience was obtained by a comparison of the experience of first year and second year cohorts of the FDA FDT course. Data was gathered by questionnaires, observation and small focus group discussions. It was intended that students would also be responding through their participation in blended learning tasks through blackboard but the revision of the timescale of the project meant that this has been rescheduled to the current academic year 2007-8.

Analysis of media

As part of exploring a strategy for how best to integrate the technology and support independent learning and face-to-face delivery, learning outcomes were identified as:

• a familiarity with the concepts and methods of cad embroidery & laser
• an understanding of key terminology applicable to cad embroidery & laser

• the confidence to improve cad embroidery & laser skills through practice
• an understanding of the part played by cad embroidery & laser in the fashion design process
• an understanding of the uses of cad embroidery & laser by fashion designers

However, Pask (1967) in his *Conversation Theory*, Ramsden (1992) and Laurillard (1993) all support the view that the teaching-learning process should be a dialogue between teacher and student, a 'conversational' model of learning and that it should contain several characteristics, these being that teaching media should be discursive, adaptive, interactive and reflective.

Laurillard analyses different media, from the lecture to computer tutoring systems, on the basis of how each relates to this '*conversational'* model of learning using evidence from evaluation and design studies. Both Laurillard (1993) and White (1999) share the view that the more interactive courseware is the more possible that it is to fulfil the conversational model of learning.

With this analysis in mind, the advantages and disadvantages of the materials developed were considered. Laurillard is critical of multimedia resources where they are not truly interactive unless combined with other media to fulfil all the criteria for learning. To generate a rich learning experience interaction with the learning materials was planned through the use of blended learning, by building use of the materials into the scheme of work, creating close links to learning outcomes and by learning activities using the University's virtual learning environment and communication tools. This process was intended to be part of the fellowship but is to be integrated this year and evaluated through the FDA FDT course and BA FS.

Impact on learning and teaching

- independent learning materials to assist delivery
- better understanding of the technology
- variety in the learning experience for students
- students have greater control over learning, at their own pace, as independent learners
- knowledge sharing amongst peers
- reinforcement of taught core content
- develops in depth knowledge of the technology earlier in the course allowing earlier specialisation and experimentation
- useful after periods of absence for students to 'catch up'
- assists the development of IT skills
- underpins workshop based specialist skills
- develops team working skills
- develops employability skills
- alignment with the external working world - meeting industry needs

Impact on curriculum

Fellowship research and the development of materials have enabled the accreditation of two new digital textile electives for the Credit Framework. This will enable students to choose to study textiles as a specialist subject area within BA fashion courses and for students on pathways such as womenswear within the graduate portfolio to study designing for laser, cad embroidery and digital print as part of their programme of studies.

Additionally these schemes of work with related outcomes are available for course teams to use for taught and independent learning for these textile technologies.

Evaluation

Background research into the use of IT and learning and teaching identifies repeatedly the importance of evaluation. (Draper, 1966. TILT. Fry et al, 1999). Research identifies that time must be allowed during and after a project for modifications suggested by feedback. Two evaluation methods were combined to give evaluative feedback, personal observation and open-ended questions allowing problems to be detected that were then tested by fixed response questionnaires. The importance of the studies being of the *actual* classes that the software is designed for is emphasised by Draper (1966) requiring that feedback be collected during at least a two-year period to allow comparison across the Foundation Degree two-year cohort and BA FS years one to four. Evaluation by staff and students has informed both the modification and development of the materials and will continue to inform both their review and development.

Feedback from the students was generally very positive. Feedback revealed that students found the materials assisted independent learning, allowing them to develop greater knowledge of the technology and enabling them to experiment at an earlier stage. They felt that the resource, allowed them to recap on taught content and make better use of workshop time. They had found the materials useful during periods of absence to catch up and for the 'computer phobic' it had assisted the development of IT skills. Importantly, they felt that existing workshop based and face-to-face learning was reinforced.

Dissemination of outcomes:

- material designed for reference by students in practical workshops is available for courses within the LCF such as BA FDT, Postgraduate courses, Credit Framework electives and Foundation Degree level electives.
- short paper presented at the first Blended Learning Conference 2006 '*Clip Cetl: enhancing textile practice'*, University of Hertfordshire, subsequently accepted as a case study for the ADM HEA *Study of e-learning* carried out by the University of Cumbria.
- article on *Digital Embroi*dery for Textile Forum magazine, 3/2007 September
- *Digital Embroidery* paper presented at the International European Textile Network, London Metropolitan University, October 2007
- internal and external staff development activities
- Clip Cetl UAL Learning and Teaching conference
- LCF Learning and Teaching days

- Clip Cetl fellowship days
- *Digital embroidery: integrating the digital with craft* with Hand and Lock International conference on embroidery, Sydney, Australia, November 2007

New things that have emerged?

- as a result of delays imposed by the non availability of programmed equipment I engaged with *Camtasia* to develop independent and e-learning resources and plan to use this for the development of future materials and the idea of a *'language lab'* of embroidery for students to engage with at their own pace is now a future goal!

- along with the development of the *Making and Meaning* elective for the Credit Framework, I think that there is a real opportunity to develop an online postgraduate fashion textiles embroidery course incorporating these digital technologies

Lessons learnt!
For colleagues:
- don't be over ambitious!
- be religious about your allocation of time - ring-fence!
- plan more thinking time and evaluation time

For the University:
- technology takes time to embed but it is really worth it from a student' experience point of view and for supporting independent learning within what is a very difficult time to be studying a practice based discipline

For the subject sector:
- the UAL is an established force within the sector for textiles and e-learning and the dissemination of this fellowship has helped to reinforce that

The benefits:
- exploring the use of learning teams
- working with colleagues, working with students
- time to look and time to think
- what helped to move the fellowship forward was the students and their eagerness to engage with the new equipment and assist with testing support materials

The fellowship has made it possible to:
- visit colleagues in colleges and universities to investigate comparative practice
- hold discussions with colleagues on the implementation of new technologies
- identify industry practice with visits to R.A.Smart's, GS UK, Amaya, and Wilcom companies
- investigate pedagogy practice through learning teams

- prepare and evaluate technical materials with students across different levels through focus groups, discussion, questionnaires
- research and develop the use of software packages for the development of materials
- investigate some of the features of the new manufacturing design and technology equipment
- the presentation of papers/case studies at key conferences and the publication of case study and articles referencing work at the LCF within the field in terms of textiles and teaching and learning
- learning materials in hard copy (manuals, samples etc) and digital resources (manuals, Camtasia clips, video clips as overviews)
- encouragement of the creative use of new equipment
- teaching that enabled the successful embedding of the new equipment within the curriculum during the first year of installation
- the development of specialist digital textile electives
- time to explore learning and teaching strategy
- indirect results of the Fellowship personally has been an invitation to contribute a chapter on digital embroidery following the ETN conference, to give a presentation to University of Swansea, London Metropolitan University and the University of Falmouth and offers to work collaboratively from London Metropolitan and the University of Hertfordshire to be considered for the future.

This fellowship was developed in response to an anticipated and perceived need. Resources follow Laurillard's objectives (1993) for designing media based learning, by targeting an area of the curriculum that 'will clearly benefit' and that presents difficulties. The fellowship's success will depend ultimately on course teams and their commitment to allocating sufficient taught hours to adopt the suggested learning and teaching strategies to deliver identified skill levels and learning outcomes.

In conclusion, the Fellowship has been a rewarding experience, for both myself and hopefully for the students who are beginning to benefit from the work in progress so far. The work will be continued, time permitting, and the potential is there for further development.

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