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Higher education in the new millennium — the challenge of teaching practical craft and design skills

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Abstract

The last decade before the new millennium has been a period of radical change in Higher Education in the United Kingdom. The change initiated by the 1988 Educational Reform Act has seen many HE institutions in the polytechnic sector gaining both financial and academic independence as the 'new' universities in 1992. In a new institutional climate of cost effectiveness, government initiatives on mass education have drastically increased student numbers which has impacted on all disciplines, but more so on those that are skill based such as craft and design.

This paper is based on the experience of teaching craft and design students at the University of Wolverhampton and new strategies developed to teach practical skills in a climate of vastly increased class sizes. Its focus is the areas of design and visual communication, and making, materials and processes. It evaluates both student and staff responses to the new programmes in these areas, in particular the relationship of teaching to independent study.

The paper will be delivered with examples of student work as slides.

1 Introduction

The 1998 Education Reform Act which became law on the 1st April 1989, heralded a period of unprecedented change in Higher Education in the United Kingdom. As a consequence, the 1990's have seen a continuous stream of government initiatives to improve efficiency and value for money. The drive to increase student access across HE has seen student intakes often double. This has impacted on all disciplines, but more so on those that are practically based such as craft and design.

To cope with increased student numbers many practice based courses have had to undertake a radical re-think of their teaching and learning strategies. This paper is based on the experience of one such course and its response to the situation.

Woods, Metals and Plastics, normally referred to as WMP, was established at Wolverhampton Polytechnic in the mid 1970's, at a time of expansion in UK Higher Education. It was validated as a single honours degree by the CNAA and initially designated to have an intake cohort of 15 students per year, making a total of 45 students over its three year undergraduate programme. Soon after

starting, the course moved into purpose built accommodation designed and equipped for this student number, which was then perceived to be a maximum that would never be exceeded. Its original teaching establishment of 9 academic and 3 technical support staff gave it an academic student/staff teaching ratio of 5:1.

From the early 1990's the student target intake was increased. By the mid 1990's it had more than doubled to 95 FTE's (Full Time Equivalents).

Since the 1970's its academic staff establishment had fallen to 5, giving a current academic SSR of 19:1. The course has managed to retain its 3 academic support staff who now have increased responsibilities in workshops.

The rise in student numbers against a diminishing academic staff establishment has meant teaching methods adopted in the 1970's and 1980's are now inappropriate. To tackle this problem has required a radical rethink of teaching and learning strategies. One to one or small group tuition in the time honoured tradition of art, design and craft

education known as 'sitting with Nellie'¹ is no longer possible to sustain. We have had to move to a situation that is student centred and acknowledges independent learning. In short we have had to adopt a more innovative curriculum that still develops the practical skills acknowledged as essential to the craftsperson and designer, but does not require the intensive teaching input of the past.

2 Innovating the curriculum

2.1 Two essential skill areas for the craftsperson and designer

This paper concentrates on the development of two essential skill areas,
Design and Visual Communication
Making, Materials and Processes

In the 1970's the preferred route of entry onto WMP was from Art and Design Foundation courses which meant students had some previous experience in these skill areas. Today the entry profile is much broader. As well as Foundation, we now have direct entry from the sixth form, GNVQ and B/TEC Diploma and Certificate courses. as well as mature students from Access programmes. As we can no longer assume that students will have prior experience in these areas, we have had to go back to basics.

The three year course programme is now perceived in terms of skill development with each year as a level of progression,
Level 1 - Introduction of skills
Level 2 - Development of skills
Level 3 - Testing of skills

However the programme has had to comply with the University undergraduate modular framework.

2.2 Curriculum development within an institutional modular framework

Over the 1990's Wolverhampton University has refined its modular degree and diploma scheme which was first introduced in the late 1980's. By the mid 1990's the modular framework was firmly embedded in institutional policy and all courses complied with both its structural and academic requirements. At the centre of its structure is

the module which is defined as, 'a standard unit of learning that is a separately assessed part of a study programme. It is worth 15 undergraduate credits and involves 150 hours of study of which 50 are taught and 100 are self managed by the student as independent study.'²

3 Skill based modules

Each of the two skill based areas described in this paper have three modules as outlined below.

Design and visual communication

The three modules covering this skill area are

- Drawing and Visual Presentation (Level 1)
- Design Principles (Level 2)
- Design Competition (Level 3)

Making, materials and processes

The three modules covering this skill area are

- Induction to Materials and Processes (Level1)
- Three Dimensional Realisation (Level 2)
- Design and Make Project (Level 3)

3.1 Design and visual communication

Drawing and Visual Presentation Module (Level 1)

This module assumes that students entering the course have limited prior experience in drawing and visual presentation and therefore introduces basic principles. Some of the students may have experience beyond its starting point, but are expected to study all aspects of the module as a refresher and to re-familiarise themselves with the visual terminology, which will be needed for succeeding modules.

The module follows the standard institutional pattern and is based on three timetabled taught hours and seven independent study hours per week over the fifteen week period of a semester

The module is run through weekly assignments, each committed to an aspect of drawing and visual development. Each student is asked to select a small product or artifact which will form the basis of all their drawing and visual presentation work. The taught sessions consist of weekly introductory

lectures based on the assignment tasks, assignment briefings, presentations and tutorials. The following two examples give some idea of assignments:

Visual perspective assignment

Following a lecture introducing drawing and perspective, the student is set the task to construct a two point perspective of their product or artifact as a key outline drawing. This key drawing will be the basis of other visual assignments. The drawing work is undertaken as an independent learner and will be discussed in a group seminar in the following weeks teaching session.

Line, dot and tone assignment

Following a lecture on the use of line, dot and tone in both classical painting and design the student is asked to produce three renderings of their key drawing, one using drawn tone, one using cross hatch tone and one using dot tone. Again this work is done as an independent learner and will be presented as part of a group seminar at the next teaching session

Design principles module (Level 2)

Following from the Drawing and Visual Presentation in Level 1, this module builds on skills learnt and develops them in the context of professional presentation. Three projects form the basis of the module, two of which are individual and one a team project. Each focuses on a different design and presentation context

Project 1

Using the product or artifact and the drawings of it produced in Level 1 the student is asked to construct an exploded rendering showing how the object is constructed. The project which lasts four weeks is backed up with lectures and tutorials.

Project 2

A team design and presentation project which looks at the current wrist watch market. Each team has to research the current wrist watch market and put forward design proposals for future products. They have to present their ideas to the module group using design and visual material that they have developed. This

project last four weeks and is backed with tutorials

Project 3

This individual project is based on new technologies in the market place and this year concerned digital photography. The student was asked to research the digital camera market and present design ideas for a number of niche markets. All students had to undertake a verbal presentation to the group using visual material they had developed. This project lasted 6 weeks and was backed up with tutorial sessions.

Design competition module (Level 3)

This module uses an actual design competition to test the visual and presentation skills of the student and their ability to work within the constraints of an external project. Each year a different project has been selected. Students have been successful in, Phillips section of the National Lighting Awards - winner, BASF National Plastics Design Award - 1997 second and third placings - 1998 a placing in the sixth finalists with the competition finals to be finally judged in the summer.

3.2 Making, materials and processes

Induction to materials and processes module (Level 1)

Health and safety in the workshop means this module has to be front loaded with teaching input both by academic and technical support staff. It is mainly about introducing the student to materials and processes in the workshop situation and related health and safety procedures. It uses basic design and make projects to introduce the use of hand and power equipment and develops basic making skills. Students are closely monitored. As well as practical tests there is a theoretical paper testing their understanding of the workshop procedures including health and safety. Students have to pass all areas of this module to allow them access to workshops.

Three dimensional realisation module

This module introduces and develops model making and related three dimensional skills, through a product simulation model. The student picks a product or object and

simulates it as a static block model matching size, weight, colour and finish. Through undertaking this module the student learns the importance of accuracy in making. The making process has different stages with the student having to produce accurate technical drawings and a styrofoam simulation before embarking on their final solution.

Design and make project (Level 3)

This is the ultimate test of the students design, making and visual presentation skills and brings together all the elements of the five modules described in this paper. The area or subject of the project is the students own choice. As this is a double module, on which students will be spending most of the final semester, it is important that a detailed project brief is developed through consultation with staff. Students are expected to fulfil all the criteria of their brief and have to make a final assessment presentation of their project to the staff team.

4 Student and staff responses to new Programme

4.1 Student response

There was an obvious need to monitor the new programme and make amendments in the light of feedback from the student groups. The programme's introduction also coincided with the institutional change and upgrade from polytechnic to new university status. With the change in status new internal procedures for monitoring quality were introduced. Previous monitoring systems devised by the individual schools were now replaced with an institutional wide system with Quality Assurance Committees at both school and institutional levels being responsible for teaching and learning standards.

All modules now had to conform to the university pattern of generic and subject specific learning outcomes and aim at developing transferable skills. Student feedback from their learning experience became an important part of the monitoring process with each module having student evaluation firmly embedded in the teaching process. Each module now had both verbal and written student feedback. The verbal part is very much left to the module delivery team

who used the last teaching session as a seminar for discussion on the module's content. From these sessions we are able to ascertain student response to a broad range of issues including workload, assignment content, lecture content, and the relevance of presentations and tutorials. The feedback we gained from the verbal discussions has been positive and constructive, the following being typical of some of the responses

- Students felt significant progress had been made in developing, drawing, designing and making skills which helped to build confidence to face a professional future in craft or design.
- Most students enjoyed the assignment work which they felt to be demanding, but manageable.
- Development of practical work through independent learning was felt to encourage,
 - self-management skills
 - friendly competition
 - individual achievement.
- Team assignments developed,
 - confidence in working with others
 - appreciation of being a team member
 - responsibility to others
 - working to the strengths of the individual team members
 - the need for a team leader.
- Positive nature of tutorials encouraged achievement.
- Success in the Design Competition module gave recognition to the importance of this work.
- Realisation that in practical design and craft work there were no instant solutions, success being the reward for application and dedication.

The other method of student feedback was through a module evaluation form. This concerned mainly resource issues such as teaching accommodation, materials available for the module, use of visual aids, the quality of the handouts, and technician support. The student is asked to rate these areas on a one to four scale where 1 is unsatisfactory, 2 satisfactory, 3 good and 4 excellent. These forms were filled in anonymously and electronically read to produce an overall average.

4.2 Staff response

Supporters of individual and small group tuition along the lines of "Sitting with Nellie" felt that when we started this programme to develop visual and practical skills through independent learning, the quality of work would suffer. I believe there has been a tendency to underestimate the ability of today's student to work independently. They display a high standard of independent decision-making and an ability to take risks and experiment and learn from making and rectifying mistakes. The work has not suffered, in fact the quality and standard is as good as, and possibly better than in the past.

In the past there was no requirement to monitor the teaching and learning process and take on board feedback from students. What we now engage in is a partnership in learning where we welcome our students' suggestions

and constructive criticism. Some of these modules formed part of a quality assessment visit by a Quality Assurance Agency at the end of April 1998 and were commended for their excellence in teaching and learning and curriculum development.

Notes

- 1 'Sitting with Nellie,' is a teaching concept that was often adopted by Art, Design and Craft courses derived from the way that operatives learnt skills in craft based industries in the late nineteenth and early twentieth centuries. The apprentice operative learnt by sitting alongside the most experienced worker who was the typical Nellie. The concept was penned by Cal Swann.
- 2 Modular definition, University of Wolverhampton.

Appendix

Examples of feedback from module evaluation

The two module evaluations are examples from design and visual communication, and making, materials and processes.

Design Principles

1 Students registered

Total 54
 Withdrawals 0
 Completions 54

1 Grade distribution

Average grade C10
 Grade distribution A16 - B12

2 Module evaluation (average ratings)

- 1 Clear module objectives 3.5
- 2 Module well organised 3.5
- 3 Helpful mix of teaching methods 3.6
- 4 Amount of work was right 3.3
- 5 Feedback on projects 3.2
- 6 Appropriate assessment methods 3
- 7 Facilities satisfactory 2.8
- 8 Technician support 2.7*
- 9 Materials needed for the module 2.8
- 10 Books, texts, learning material available 3.2

*Not applicable

Key: 1 = poor. 2 = good. 3 = very good, 4 = excellent.

3 Comments

A series practical assignments formed the basis of this module which developed visual and presentation skills. Because it was a practical the response by the student group was good and is reflected in the marks. Lower marks tended to occur where students did not complete assignments.

Three dimensional realisation

1 Students registered

Total 52

Withdrawals 0

Completions 52

1 Grade distribution

Average grade C9

Grade distribution B13 - C8

2 Module evaluation (average ratings)

- 1 Clear module objectives 3.7
- 2 Module well organised 3.5
- 3 Helpful mix of teaching methods 4
- 4 Amount of work was right 3.2
- 5 Feedback on projects 3.6
- 6 Appropriate assessment methods 3.1
- 7 Facilities satisfactory 3.8
- 8 Technician support 3.2
- 9 Materials needed for the module 3
- 10 Books, texts, learning material available N/A

Key: 1 = poor. 2 = good . 3 = very good, 4 = excellent

3 Comments

This is a practical module developing model making skills in the workshop. Each student is asked to select a product and simulate it as a block model matching it in scale, weight, detail and finish. Intermediate stages include, Card sketch model and CAD drawings. Again student response was good, but students marks were lower when failing to submit stages in the project.