Attitudes of Potential Teachers of Design and Technology

Abstract

Teacher recruitment is problematic for several areas of the curriculum, and for design and technology teaching it is extremely serious. In March 1999, the Department for Education and Employment commissioned the Technology Education Research Unit at Goldsmiths College University of London to undertake a 12 month research project to investigate the attitudes of potential teachers of design and technology in schools. The study focused on final year undergraduates pursuing design/technology related degree courses, and sought to identify their attitudes towards embarking on a career in teaching. The study also enquired into the attitudes of the final year tutors of these students.

Key findings

Quantitative data (questionnaire)

- Students identified the attributes that they associated with their ideal job and with a job in teaching. Students' view of teaching – when contrasted with their 'ideal' job – was that it lacked variety, professional freedom and creativity. It was also poorly paid and lacked career fast tracks.
- Students' degree courses were seen as vocational in the sense that the vast majority of them have a career ambition to become designers, architects, or engineers, working in industry.
- Students' experience of design and technology in schools was positive. There were recurrent references to the fact that their design and technology teachers had been 'good' teachers and influential in their schooling.

Qualitative data (interview)

- Students reported that very little careers guidance was provided in any of the courses.
- Students typically held very negative attitudes towards teaching, because it was seen as stressful, uncreative and overburdened with paperwork.
- Students had very little knowledge of routes into teacher training.
- Design degree students were the group most likely to choose to teach design and technology. They were also most knowledgeable about what it involved.
- Students felt that teaching needed more money, teachers more autonomy, and the profession needed to be far more creative and be presented with a better public image.
- Tutors assumed that their students would be taking up a career in industry.
- Tutors knew very little about routes into teaching.
- Tutors believed that the teaching role was constrained, uncreative, and overburdened with paperwork.
- Tutors knew very little about design and technology, unless their own children were studying it at school.
- Tutors regretted what they saw as the low status of teaching and the damaging consequences of 'endless teacher-bashing'.

Background

By September 1997 the issue of teacher recruitment for design and technology was sufficiently serious for it to be made the focus of an 'Invitation Conference' organised by the Design and Technology Association (DATA) and supported by the Teacher Training Agency (TTA). At that conference, the Chief Executive of the TTA put the problem bluntly:

> 'Without wishing to sound full of gloom and doom, for the academic year just starting ... design and technology applications have been lowest of all, and our predictions were that around 46% of places on PGCE courses would be filled. So perhaps it is timely to concentrate on design and technology'. (Millett 1997: 5)[1]

Since that date, the crisis in recruitment for design and technology teaching has deepened, despite it being designated a shortage subject with access to some priority subject recruitment. The question, of course, is why? What is in the minds of potential recruits that makes them decide against a career in teaching rather than in favour of it?

Aim

The aim of the research was to identify the attitudes of appropriately qualified undergraduate students and of their final year tutors, towards secondary teaching of design and technology as a career.

Research methodology

To identify an appropriate student and tutor sample, we selected two broad categories of degree course that are reflected in the design and technology title:

Technology courses

Engineering, computer/software, and food.

Design courses

Visual communication, product design, 3D, furniture, textiles, ceramics, interior design. Additionally we included a group of courses that spanned this range of specialisms:

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1 Millett, A. (1997) 'TTA Perspective', in *Invitation Conference on Teacher Supply in Design and Technology, Report and Findings: DATA Research Paper No 9*; DATA: Wellesbourne

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Bridging courses
Design and technology, architecture, product design engineering.

Education courses
Typically shortened BAEd courses.

Since we were seeking attitudinal data, we used **interview** techniques, with selected groups of final year undergraduates, for the mass of our data. The interviews (approximately one hour long) were with small groups of students and had a semi-structured format. We supplemented the interviews with a series of tick-box **questionnaires** that were designed to be completed in about 10 minutes at the start of the interviews. The 'hard' data from these forms was then analysed against that emerging from the interviews.

In each institution, we asked tutors to select a group of five or six students that represented the final year cohort of students in terms of gender balance, the spread of age and ability and any other variable that the tutor believed to be important in defining the group. For each course that we visited, we also interviewed the final year tutors. The final composite sample therefore involved 130 students, on 23 courses, with 19 tutors in 18 institutions.

Main research findings

There are two kinds of findings in this report, quantitative and qualitative. The first finding (1) is based on group data and examines group priorities for students' 'ideal' jobs and the fit and misfit between these priorities and their views of teaching. The second finding (2) examines the structure of the groups in terms of their age and gender, their career aspirations and their views of design and technology as they experienced it in school. The third finding (3) is based on student interviews and helps us to understand and interpret why students hold the views that they express in findings 1 and 2. The final finding (4) is based on tutor interviews and explores the same issues from the tutors' perspectives.

Students' 'ideal' job set against their view of a job in teaching

Students identified the attributes that they associated with their ideal job and with a job in teaching. These were set against each other to examine the match and mismatch. The greatest areas of mismatch were seen to be: lack of variety; lack of professional freedom; poor pay; lack of dynamic; lack of career fast tracks; and lack of creativity. We believe that these six qualities can be divided into two groups, i.e. those that relate to the nature of teaching careers in general, and those that address classroom issues in particular.

The data from the questionnaires suggested that graduates' views of teaching might be substantially altered if we could demonstrate that design and technology teachers have the opportunity to be *creative*, to exercise *professional autonomy* in their classrooms, to be *dynamic* in their teaching, and to maintain *variety* in what they do.

Individualised structure of the student sample

In every course, the degree was seen by the graduates as vocational in the sense that the vast majority of them have a career ambition to become designers, architects, or engineers, working somewhere in industry. They were not pursuing a higher education degree in the classical sense; they were training for a specific profession, and in the main they had an occupational route planned.

Some gratifying data emerged about students' experience of design and technology in schools. For the vast majority, the school experience of design and technology was positive. There were recurrent references to the fact that their design and technology teachers were 'good' teachers and influential in their schooling.

Attitudes expressed by students in interview

The student interviews provided wide-ranging data. Very little careers guidance was provided in any of the courses. Typically there were very negative attitudes towards teaching, because it was seen as stressful, uncreative and overburdened with paperwork. There was very little knowledge of routes into teacher training and if students were conscripted (i.e. forced) into teaching, only the bridging and design students would choose to teach design and technology. To correct the situation, it was felt that teaching needed more money, teachers more autonomy, and the profession needed to be far more creative and be presented with a better public image.

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Attitudes of final year tutors

The issues that we identified from tutor interviews were broadly the same as those that arose from the student group interviews. Most tutors assumed that their students would be taking up a career in industry. They knew very

little about routes into teaching, and the notion that their students should become teachers hardly ever entered their heads. They believed that the teaching role was constrained by the National Curriculum, uncreative, and overburdened with paperwork. Tutors knew very little about design and technology, unless their own children were studying it at school, and finally they regretted the low status of teaching and mentioned the damaging consequences of what they described as 'endless teacher-bashing'.

Recommendations

At the forefront of our minds throughout this project was the imperative to discover what might be done to increase the likelihood of the students with whom we had been interacting, choosing to take up a career in teaching.

Recommendation 1 Attracting graduates into design and technology teaching

- We believe that the **design** group would be the easiest to attract into teaching and, given the urgency and scale of the current shortage, we recommend focusing on this group. However, we recognise the importance of attracting the other complementary groups, and where appropriate, our subsequent recommendations address these differences.
- We recommend the development of a 'designer in residence' programme in schools for which graduates can apply and to which schools can subscribe. We also recommend that this programme be run in association with the Royal Society of Arts (RSA). Design graduates are familiar with the prestigious RSA student design awards, and it would be relatively easy to piggy-back a national 'designer in residence' programme through the same channels.
- We recommend that equivalent student support bursaries should be made available for students undertaking maths, science and design and technology teacher training.

Recommendation 2 Initial training and continuing professional development

- Because of the breadth of the design and technology curriculum it is very difficult for graduates from a specialist area to teach this breadth after only a one year PGCE course. If bursaries of the kind we discussed above were to be available for such students, we would recommend that two-year PGCE courses for design and technology become the standard rather than the exception. In the absence of such bursaries, or equivalent student support, we recommend that ALL design, bridging, engineering and food graduates should be considered as possessing the competence to start a design and technology teacher training programme. This recommendation carries with it the requirement of a programme of continuing professional development to support newly qualified design and technology teachers to consolidate their training and enrich the breadth of their skills and knowledge in line with the demands of the design and technology curriculum.

Recommendation 3 The role of tutors

- The data indicates a clear connection between students' views and tutors' views of school teaching. We recommend that a primary target for recruitment actions should be design tutors, partly because they are a permanent feature of life in the college and investment in them has long term value, and partly because they have such a profound influence on the ambitions and expectations of their students.
- We also recommend that a one-day conference/event be designed specifically for such tutors. It should present the issues surrounding graduate employment in design, and specifically highlight the teaching options. We further recommend that this event be replicated at regional centres around the country, to invited audiences of design tutors.

Recommendation 4 Information supply

- There is a need for information both about design and technology teaching and about routes into it. Our data suggests that this is not currently being supplied either by design tutors or by the careers services in higher education institutions.
- We believe that the most transparent and available medium for such information for students would be a website, and we recommend that one be developed specifically to attract design graduates into teaching design and technology.
- However, whilst websites are highly effective when addressing individuals or small groups, there are many venues and circumstances in which it would be more convenient and effective to address a wider group. In these circumstances it would be valuable to have a state of the art video presentation of 'teaching design and technology'. We recommend that such a video presentation be produced and

distributed widely to appropriate individuals and institutions.

Recommendation 5 The public projection of teaching

- It is important to counter the highly negative perception of teaching that is held by graduates and their tutors. In particular it is important to establish the creativity and excitement of teaching. We recommend that policy bodies, in particular TTA, DfEE, and Ofsted need publicly to celebrate the creativity, diversity and risk-taking in teaching design and technology in schools.

"it is important to establish the creativity and excitement of teaching"

Conclusion

We began this study from the undeniable fact that teacher recruitment in design and technology is seriously below the level that is required, and from the premise that the roots of this problem might lie in the attitudes that graduating students hold about teaching. Our findings describe the attitudes (both of students and of their tutors) that we have uncovered during the study, as well as pinpointing the lack of knowledge about teaching that is commonplace amongst graduates and their tutors. Our recommendations address these matters with actions and initiatives targeted at particular user groups. The implementation of these initiatives would, we believe, have a considerable beneficial impact on the recruitment of graduating students into teacher training courses for design and technology.

Note

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