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Learning to teach design and technology in university or in school: is emerging teacher identity shaped by where you study?

Key words: initial teacher education, PGCE, GTP, teacher professional identity

INTRODUCTION

'We teach who we are' (Stenberg 2010: 343).

This paper describes the preliminary stage of a research project that will investigate whether the course that students take to become teachers of design and technology makes any difference to the professional identity of the teacher they become.

Design and technology (D&T) student teachers come from a wide range of backgrounds, some are young undergraduates straight from school who are acquiring subject knowledge whilst also learning to teach it. Others begin their postgraduate training having achieved subject expertise via their first degree and subsequently gained a wealth of industrial and commercial experience. Whichever route is taken, learning to teach involves not only learning the knowledge and skills required but also the formation of a professional identity as a teacher (Carter and Doyle 1996).

Like Stenberg (2010) we believe that who we are as teachers (our professional identity) is an important aspect not only of our own selves but also informs our classroom practice. According to Sachs (2005: 15) teachers' professional identity 'stands at the core of the teaching profession. It provides a framework for teachers to construct their own ideas of 'how to be', 'how to act' and 'how to understand' their work and their place in society'. Teachers' professional identity is shaped by historical and political influences as well as social and cultural ones, including the student teacher experience and context of learning to teach. It is, therefore, important to understand the impact that the teacher preparation course has on the development of student teachers' emerging professional identity and how this might influence how (student) teachers are, act, and understand.

Our research is being undertaken in England, where teacher preparation is currently undergoing upheaval, with increasing numbers of school-based routes to qualification being proposed. We are investigating two types of teacher preparation courses, one university-based and one school-based, to find out whether these two courses have different outcomes in terms of the professional identities of the design and technology teachers and the types of teachers they are in the classroom. This may give some insight into the teachers we can expect in the future, given the Government's change in emphasis from university-based to school-based preparation. This will have relevance for those investigating D&T student teachers' professional identity and for those concerned with the role of the university and the role of the school in the preparation of teachers.

DEFINITIONS OF TEACHERS' PROFESSIONAL IDENTITY

The concepts of 'identity' (Erikson 1968, Lloyd 2005) and being a 'professional' (Jackson 2010) have been researched for decades. It is outside the scope of this paper to explore

these concepts in depth but the research on teachers' professional identity has grown out of these earlier studies.

The literature acknowledges the multi-faceted and complex nature of teachers' professional identity and the difficulty of providing a concise and precise definition. Beijaard et al (2004), in a meta-analysis of the literature, concluded that there was a lack of clarity, with reports defining professional identity differently, or not at all. However, they determined that teachers' professional identity can be characterised as not fixed, consisting of sub-identities, involving both personal and contextual factors and agency, the individual's active involvement. Sub-identities are complex for student teachers, comprising not only the personal and professional but within the professional are identities of subject expert (as graduates), student (particularly for those in university-based programmes) and student teacher. Personal factors include what the student teacher brings to the course and the social interactions experienced during it and contextual factors include the location of training. Other researchers also describe teacher identity as fluid (Olsen 2008) and not fixed (MacGregor 2009, Chong, Low and Goh 2011). Connelly and Clandinin (1999) found that teachers were more concerned about who they were than about what they knew, they referred to professional identity as 'stories to live by'.

Day and Kington (2008) suggested three dimensions to teacher identity: professional identity, situated located identity and personal identity. Lauriala and Kukkonen (2005) and Stenberg (2010) consider identity and self-concept as the same thing, a notion which is contested (see Rodgers and Scott 2008). However, Rodgers and Scott also suggest that identity and self are related, 'If our identities are stories, then our selves might be the storytellers' (2008: 738). Accepting the relationship between identity and self, Lauriala and Kukkonen suggest that there are three dimensions: the actual self, the ought self, and the ideal self.

The context of teacher education in England led us to use the definition of professional identity suggested by Lauriala and Kukkonen (2005). In this we see the actual self as being the identity which the student teacher currently holds about him/herself, and which we will be investigating in later stages. We regard the ought self, which Lauriala & Kukkonen (2005) describe as represented by 'one's own, and significant others' hopes, wishes and aspirations' as being represented in official documents and research reports, for example Qualified Teacher Status Standards and reports on teacher effectiveness (Hay McBer 2000). The ideal self we consider to be the self promoted through the teacher preparation programme undertaken by the student. This paper reports our preliminary findings on the ideal self suggested by pre-service courses which are university-based and those which are school-based, at this stage using only data on the taught programme.

INITIAL TEACHER EDUCATION AND STUDENT TEACHERS' PROFESSIONAL IDENTITY

It has been recognised that students begin their teacher education programmes with preconceived notions of what it means to be a teacher (Lortie 1975, Flores 2001, Gratch 2001), and that these notions can be difficult to change (Korthagen 2004, Alsup 2006). One of the purposes of teacher education, therefore, is to engage students in reflecting on their preconceptions and how these might influence them as teachers.

Student teachers' professional identity develops as they progress through their training programme (MacGregor 2009). Battey and Franke (2008:129) believe that 'The process of learning to teach is a social process of identity transformation' and MacGregor (2009:3) that how identity develops depends, to some extent, on 'the social and cultural constructs of others in specific contexts'. This implies that the context for student teachers' learning is an important contributor to their professional identity. If social interaction with others is a factor then who those others are, their views of teaching and what it is to be a teacher and their perception of the individual student will all be influential.

It has also been shown that the school context is important in shaping teachers' professional identity (Beauchamp and Thomas 2009, MacGregor 2009). This suggests that students on teacher preparation programmes that are based in schools are likely to be influenced by the school environment in which they are based, the culture of the department and the individual teachers with whom they work. As these are all located within one environment the influences on the student teacher, we suggest, may be convergent. Students on university-based programmes, although influenced by the school context during the time spent on practicum, will have this influence mediated by their experience in another school, by university tutors and the experiences of other student teachers.

We believe there are additional factors to consider which are specific to D&T student teachers. Many D&T student teachers have previously had successful careers, for example in a design studio, manufacturing company or self-employment which will influence their approach to the subject and what they consider important. MacGregor (2009:3) studied the extent to which the professional identities of D&T teachers are informed by their work backgrounds and found that student teachers identified 'the professional experience as the most significant factor in shaping their professional identity'.

In many countries, D&T is perceived as a low-status subject, often also as a less-academic subject, and this is likely to have some influence on the student teacher's emerging professional identity. However, D&T is a subject that is dynamic, continually changing and popular in schools with pupils, and this subject culture is also likely to impact on the development of professional identity. The changing nature of D&T means that it is also important to consider the preconceived notions that student teachers bring to their pre-service course.

As the influences on teacher professional identity include preconceptions and the social and cultural context of learning to teach, this research investigates two different types of teacher preparation course, one university-based and school-based, to find out whether the type of course undertaken influenced the formation of the student teachers' professional identity and the types of classroom teacher they become. Although teacher, and student teacher, professional identity is increasingly being researched (Stenberg 2010) we found little research on D&T teachers and no research on pre-service teachers undertaking different types of teacher preparation courses.

TEACHER PREPARATION COURSES IN ENGLAND

Teacher education in the UK, as in many other countries, has developed from the 'apprenticeship' model, through teacher training colleges to become a university-based

degree course. However, since its election in May 2010, the UK government has introduced many changes to education provision in England, including changes to pre-service teacher preparation. One of the changes will result in teacher preparation once more being the responsibility of schools, rather than universities. The issue of who is the leading partner in teacher education is, we believe, an important one and the UK is not the only country where this is topical as other countries also face expansion of the available routes into teaching (Cochran-Smith et al 2008). Many teacher educators are concerned about the consequences this will have for the content and teaching in teacher preparation courses and the nature of the professional teacher emerging from such training.

Currently, there are several programmes available in the UK for those wanting to become secondary school teachers of D&T once they have completed their first degree; the two most popular are the university-based Post Graduate Certificate of Education (PGCE) and the school-based Graduate Teacher Programme (GTP). In 2009-10 (the latest year for which figures are available) 75% of new teachers qualified through a PGCE programme and just less than 25% through a GTP programme.

The PGCE and GTP courses are similar in some ways, in that they are both aimed at those who have a first degree in a relevant subject and both take one academic year to complete. In other ways, the two courses are very different.

The PGCE course is a university course which includes academic study of aspects of teaching and teaching experience, the practicum, in two different schools. The schools are in partnership with the university, in that there is a contractual relationship and roles and responsibilities of university teaching staff and school staff are formally agreed. Students spend a total of 12 weeks in the university, which is spread over the academic year, and 24 weeks in total in the two schools. University staff have responsibility for auditing and developing student teachers' subject knowledge and teaching them the knowledge required for classroom practice. They also visit the student in school to observe and monitor their classroom practice. The university conducts academic assessment, which is through a mixture of written assignments and school-based activities. The university awards the academic qualification and recommends the student (to the government department responsible for registering teachers) for professional accreditation. School staff have responsibility for supervising the student during the practicum, undertaking regular observations and providing feedback. One member of staff will be named as the student's mentor and will have the major responsibility for the practicum and meet regularly with the student. The mentor usually provides the university with assessment of the student against the Standards for the professional accreditation.

In contrast, the GTP course is located in school and the GTP teacher is employed by the school as an unqualified teacher during the period of training. As this course may be the responsibility of a local authority, consultant organisation, university or school there is little consistency on content and structure. Many GTP programmes have links with a university and the GTP teacher may attend the university for an agreed number of days during the academic year, but required attendance can vary between 35-60 days and for some attendance is during the evening, at the end of the school day. Some GTP courses provide training 'in-house' with consultants or school staff running training sessions. There will be a designated mentor who will have major responsibility for the GTP teacher and who will meet regularly to discuss progress. The GTP teacher will be

expected to teach timetabled lessons, if not immediately on starting then within 10 weeks, although this is usually limited to 50% of a standard timetable in order to allow time for learning activities. There is also a legal requirement for GTP teachers to undertake a placement in a different school, the length of this placement varies between 15-30 days. Teachers taking this course gain only the professional accreditation of Qualified Teacher Status.

Whilst there are many similarities between the two programmes, the differences are marked. On the PGCE programme, the student teacher's main identity is as a student of a higher education institution working towards an academic qualification and professional accreditation. By contrast, on the GTP programme the student's main identity is as an unqualified teacher working towards professional accreditation. It is this difference that we want to investigate, does it lead to a difference in the professional identity of the teacher and/or the type of teacher they become.

METHODOLOGY

This on-going, small-scale study looks at the preparation of teachers for secondary school (11-18 years) design & technology on university-based PGCE programmes and on school-based GTP programmes. The longer term aim is to find out whether these two programmes produce teachers with different professional identities. We have undertaken analysis of official documents to look for the 'ought self' (Lauriala and Kukkonen 2005) portrayed in these, but limitations of space mean that this is not reported in this paper. Here we present the work in which we have looked at the content and structure of the two teacher preparation programmes to look for the 'ideal self' (Lauriala and Kukkonen 2005) they portray.

In this first stage of the research, a survey was issued to providers of teacher training for secondary school D&T, via an online closed conference group. The survey listed 52 aspects of teacher training, drawn from the researchers' own experiences and research reports on teacher effectiveness (Hay McBer 2000). Respondents were asked to indicate, for each aspect of training, the approximate number of allocated hours and where the training took place. Responses were uploaded into a spreadsheet and ranked in order of most to least hours allocated, as this was thought to be an indicator of importance given to that aspect. We also analysed where the allocated hours were located, university or school.

From a community of 91 members we received 17 returns, eight of these referred to PGCE programmes and four to GTP programmes. Two respondents combined their data from both programmes so were discounted, as were data from one institution in Scotland and one programme which was of a different kind. Although returns were low, we believe that the data are broadly representative of national provision for two reasons: one is that teacher education is closely monitored by government, through inspection and the requirement for student teachers to meet national Standards, the other is that the sample is random and represents all geographical areas of England.

This represents just the first stage of a longer study, in later stages we will interview and observe student teachers in order to gather more qualitative data on why one course is chosen in preference to the other and whether or not the type of course taken influences the professional identity of the teacher.

FINDINGS

The survey asked course leaders to indicate how much time they spent teaching each of the aspects of teacher education previously identified as relevant to design and technology secondary teacher education.

The main finding from this analysis is that there appears to be little difference in the course content of the two different programmes. However, the university-based providers (PGCE) were more able to provide specific teaching time allocations for each of the topics listed as the university teaching is timetabled for the students and it is easy to identify specific time allocations for each topic. This meant that a rank order could be easily identified.

On GTP programmes, although there are some formally timetabled sessions, much of the teaching of specific topics takes place less formally in the school setting so GTP course providers were less able to give specific timings for the teaching of each topic. As a result, many of the topics are clustered together and no rank order is clearly discernible.

Given the importance of subject knowledge to effective teaching, and the fact that both of these courses lasts just one academic year, it was not surprising that in both types of courses the auditing and development of subject knowledge was ranked highly. In the UK, D&T teachers are required to teach in two material areas yet many begin their training with knowledge and skills in just one area. This means that in their year of teacher preparation they not only have to learn all the knowledge and skills required to teach but also the subject and pedagogical knowledge of a second area.

The other topics which ranked high on the list for both programmes were those that attend to the fundamental aspects of teaching, although it was surprising to see *Lesson Evaluation* so low down the ranking given the importance attached to reflective writing in teacher development (Zeichner 1987, Pollard 2008, Beachamp and Thomas 2010). It was also surprising that *Health and Safety in D&T* was not ranked higher given the critical importance of this in D&T classrooms, the need for students to gain health and safety accreditation and the requirements placed on schools in this regard.

Surprisingly, some of the lower order topics were those which we would expect student teachers to be concerned about as they feature in the professional standards that they are required to obtain, for example *Statutory Duties of Teachers, D&T and Literacy and Numeracy* and *Progression in D&T Learning*. Cross curricular aspects were also low in the rankings: *PSHE in D&T, Citizenship in D&T* and *Thinking Skills in D&T*.

Those aspects at the bottom of the rank order include some of the more theoretical aspects of teacher learning, such as *Learning Theories, Motivation in Learning, The Nature and Purpose of D&T* and *Research in D&T*. This is surprising for the PGCE university-based courses given that the student teachers are working towards an academic qualification, in many cases at master's level. Although schools have been funded and encouraged by government to engage in research (Furlong and Sainsbury: 2005) this appears to have had little impact in the GTP training provision.

As the PGCE university programmes worked jointly with partner schools, where students undertook their practicum work, and as some GTP programmes require their students to

attend university for some training sessions, we asked who had the major responsibility for teaching each of the identified course elements.

In the PGCE courses, the university covered all the topics and most schools also covered similar topics. There were some topics not covered by some schools and these tended to be those of a more 'theoretical' nature, such as the Nature and Purpose of D&T and Research in D&T. However, we would argue that an agreed understanding of the subject, at least by its subject community, should be at the foundation of both teaching and learning and so should be fundamental to a teacher preparation programme. Furthermore, a shared understanding of the subject should contribute to the notion of the 'ideal self' suggested by Lauriala & Kukkonen (2005) as it promotes a vision of what a D&T teacher should be concerned with.

Aspects most covered by schools were those considered more relevant to the practical work of teaching, such as subject knowledge, planning and preparing lessons, assessing pupils and teachers' pastoral work. Although interestingly, all the universities taught students about *The National Curriculum* but only 33% of schools addressed this, yet it is imperative that teachers know the requirements of the National Curriculum.

The GTP programme showed a similar analysis, with the schools relying on the universities to provide the 'academic' input and the schools focusing on the 'practical' aspects of teaching.

DISCUSSION AND CONCLUSION

This study aims to investigate whether there are any differences in the professional identities of D&T teachers who take a university-based course and those who train 'on the job' in school. Using the Lauriala and Kukkonen (2005) typology of professional identity we looked at the content of each type of course to try and identify the 'ideal self' each promotes. It became clear that, although time spent on different aspects of teaching may vary, content on both courses is essentially the same.

Neither of the courses appeared to address the preconceptions that student teachers bring to the course and there is no consideration in the course content of what they think it means to be a teacher. The teacher self we identified through these two types of course is one who is a skilled technician, as the emphasis in both courses was on the knowledge and skills that teachers need in order to run their day-to-day classrooms. Wider concerns, such as the historical development of D&T and the nature and purpose of it on the school curriculum, were low down in the rank order of time allocation on both courses. These findings indicate that both courses may be leading to similar outcomes in terms of the emerging professional identity of the (student) teachers. However, we have so far only gained the 'official' version of these courses, the authentic experience of the students may provide different observations and gathering this data will form the next stage of the study.

Professional identity is also informed by the social and cultural context of learning so we will be interviewing student teachers to ask about their reasons for choosing a particular course, their learning experiences and to try and determine how the student teacher's professional identity is shaping. We will then observe them in the classroom to see whether there are any differences in how they act, are and understand (Sachs 2005).

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