

An Investigation of the Concept of 'Partnership' in Design and Technology Initial Teacher Education

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Abstract

The research investigated the concept of 'partnership' in English Initial Teacher Education (ITE) in the context of design and technology. The aim of the research was to explore partnership arrangements in primary and secondary schools, higher education institutions (HEIs), school centred initial teacher training courses (SCITT) and open and distance learning programmes.

Partnership between HEIs and schools in the field of ITE has grown in recent years as a result of government policy and the movement to improve standards in our schools. Specific issues in this research include recent developments in partnership between HEIs and schools, partnership arrangements, quality control procedures in the selection of schools, partnership arrangements, course content and student progress and the roles and responsibilities of the design and technology mentor.

The research findings include data from structured interviews and case studies on the factors that ensure a successful partnership, including the importance of the role of the design and technology mentor. It concludes by making some recommendations for future practice.

Introduction

The term partnership, derived from the world of business, can be defined as 'a contractual relationship between two or more persons carrying on a joint venture'. (Oxford Dictionary) However, in the educational field of Initial Teacher Education (ITE) the term partnership is interpreted as 'co-operating or collaborating within a working relationship'. (Nicholls, 1997) An activity that involves issues of responsibility and empowerment, efficiency of delivery, shared organisational structures and, most importantly, a common philosophy of ITE. (Dunnill *et al*, 1996)

Many teachers of design and technology in secondary schools and primary teachers have, like other teachers, been keen to have a student in their classroom. They have seen this as an opportunity for the student to 'bring along new ideas'. (Banks, 1996) This has been particularly true during the radical changes in design and technology teaching in recent years. The keen student has much to offer the schools in new thinking and areas of expertise and the experienced teacher, in the context of a subject mentor, has a wealth of pedagogic strategies to share. It is an arrangement that, if well managed, offers considerable potential for the student and teacher.

Until recently the role of the schools and teachers in ITE was limited to the supervision of students on teaching practice (Ofsted, 1996) and in many cases there was a lack of recognition and reward for well-motivated and successful teacher mentors. There were no prescribed tasks for the teachers, other than providing students with a suitable timetable and supporting them on classroom management and control. The higher education (HE) tutors, through visits to the schools, checked the planning and observed lessons, tutored, monitored and assessed the progress of their students.

It is intended in this paper to outline recent developments that have affected the training of teachers of design and technology and present and evaluate some research findings in the field of partnership arrangements in ITE.

Recent developments

Partnership between HEIs and schools in the field of ITE has grown in recent years as a result of government policy and the movement to improve standards in our schools. The education of teachers has been for many years the role of HEIs, though many institutions have developed strong links with their placement schools for teaching practice. The first document to herald major changes was on the accreditation of ITE courses (DES, 1989) and it required providers of ITE to form partnerships to ensure a more effective school-base for training of future teachers, including the involvement of experienced teachers from schools in:

- planning and evaluating courses
- the selection of students
- the supervision and assessment of students' practical work
- making contributions, as appropriate, to lectures, seminars and other activities on the course.

The requirements of *Circular 9/92* (England) and *35/92* (Wales) (CATE, 1992) have extended these requirements for fuller partnership arrangements and similarly changes have occurred in the primary sector through the introduction of *Circular 14/93*. (DFE, 1993)

An additional development has been the establishment in September 1994 of The Teacher Training Agency (TTA) under the Education Act 1994. It is intended that the TTA will improve the quality of teaching as a profession and so improve the standard of pupils' achievement and the quality of their learning. The influence of the TTA on ITE is important as it controls the allocation of

student numbers and funding to HEIs and SCITT schemes.

Recent publications of the TTA (June 1997 a), have strengthened and clarified the requirements for partnership between HEIs and schools in relation to ITE. A further TTA document relates to new standards for the award of Qualified Teacher Status (QTS). (TTA, June, 1997) They apply to all trainees to be assessed for QTS from May 1998 and they replace the standards for QTS set out in Section 2 of the course criteria (*Circulars 9/92, 14/93 and ITCL 1/96*). To successfully complete a course of ITE and be eligible for QTS, a trainee must be assessed against and achieve all the standards.

The reasons for HEIs and schools establishing recent partnership schemes can be traced directly to the requirements outlined above. The key objective is to give schools a central role in ITE. Students are now required to spend more time in school: a minimum of 32 weeks for four year undergraduate and 24 weeks for three year undergraduate courses, full-time two year secondary and Key Stage 2/3 undergraduate, full-time PGCE secondary and Key Stage 2/3 courses and 18 weeks on all full-time primary PGCE, two year primary undergraduate courses and part-time PGCE courses (TTA, 1997a).

There have been positive benefits. Ofsted (1996) reports that HEIs and schools have responded positively and constructively to the challenge. They have included ITE in their development plans and teachers consider they have benefited professionally by reading more widely and have been more reflective about their own practice in response to fulfilling the mentoring role and meeting the needs of the students.

The creation of partnership schemes recognises and enables the people involved in ITE to understand that the daily work in schools provides the context for specific learning about teaching (McCann, Radford, 1993). All forms of partnership have enabled students to see the links between their work in HEIs and teaching in schools, through supportive mentoring, school based tasks and opportunities to reflect on their practice with other students.

The situation regarding the education and training of teachers of design and technology has been of particular concern to teachers, teacher educators and politicians in many countries (Banks, 1996). A colleague of his from the USA suggested the teacher shortfall in this area might be because of:

- cutbacks in higher education

- people do not want to go into the teaching profession
- salaries have not kept pace with jobs in industry
- the general public does not consider teaching to be high status.

Banks suggests that in this country there are also concerns of a professional nature related to the recent major developments in design and technology. He suggests a lack of a clear rationale for teaching the subject resulting in confusion among the range of teachers working in this area. They are unsure of the relationship of design and technology to the traditional manual or practical subjects of the past, to science, mathematics and other subjects of the current curriculum.

Such confusion does not help students when they go into schools. A range of mixed messages from tutors in HEIs and teachers in schools will not instil confidence or a commitment for students to complete their courses. To ensure we are to have sufficient good quality design and technology teachers it is essential that HEIs and schools work together to overcome these problems. If partnership is going to work effectively, the role of the classroom design and technology teacher as subject mentor is crucial.

Research

The initial research findings were presented in the Design and Technology Association (DATA) publication (1997). It looks at the key principles related to partnership and illustrates them in primary and secondary schools, higher education institutions (HEIs) and school centred initial teacher training courses (SCITT) in the context of design and technology. A main aim is to identify ways of supporting teachers mentoring ITE students in their schools on traditional courses based in HEIs, SCITT schemes and open and distant learning situations.

Data was collected using structured questions at interviews and case studies of a number of partnership arrangements and materials produced in HEIs, partnership schools, SCITT schemes and the Open University (OU). These include one year primary and secondary PGCE, two and four year BA Ed, BEd, BA/BSc secondary courses with qualified teachers Status (QTS), a PGCE SCITT and a four year primary BA QTS course. Materials accessed included Mentoring in Secondary School: a professional development programme from the Open University Postgraduate Certificate in Education course.

Research findings

The collected data has been grouped under headings based on the questions used in the interviews.

Quality control procedures

The final responsibility and accountability for the partnership arrangement lies with the HEI or, in the case of school-based schemes, the SCITT organisation, as the Office for Standards in Education (Ofsted) inspects all ITE schemes against a common framework (Ofsted, 1996b). The key factor or indicator of the effectiveness of ITE is judged by how well students perform as teachers at the end of their course and as newly qualified teachers (NQT) in their first and subsequent posts. Evaluation of partnership arrangements is vital if deficiencies are to be detected and eradicated. The research identifies a range of internal quality control procedures in the partnership schemes including:

- visits by a HEI design and technology tutor in secondary schools and a joint lesson observation and feedback with the design and technology mentor
- HEI secondary and SCITT design and technology mentors attending subject-based mentor training sessions to discuss interpretation of evidence and grading according to profile statements
- HEI design and technology moderator visiting partner schools in SCITT schemes to observe a student teaching followed by a joint debrief and discussion with the design and technology mentor
- design and technology mentors visiting colleagues in other partner schools in HEI schemes or consortium schools in SCITTs to ensure common standards between HEI and partner schools or lead school and consortium schools
- design and technology school-based tasks set by the HEI design and technology tutors in primary and secondary schools discussed and monitored in tutorials with design and technology mentors. They form part of the formal assessment of the students.
- design and technology subject audit completed at HEI by student, discussed in mentor tutorials and used as a basis for an action plan in school to improve subject knowledge.

Selection of schools

This is carried out against set criteria including the general support programme students receive through the professional tutor and the support of the design and technology

mentor. Schools with a long association with the HEI are frequently asked to join the schemes, which have different types of partnership arrangements with a wide range of payment for each student. Generally schools will agree in their contract to:

- induct students
- record and report on student progress
- observe students teaching, providing support, advice, feedback and encouragement for students to analyse and reflect on their classroom experience
- participate in the assessment of students' professional competences at the end of each phase tutor the student in subject application, but not necessarily subject knowledge.

Course content

A range of strategies are used to monitor course content including:

- HEI courses have to be validated by their institution
- students write course evaluations during and at the end of the course
- HEI tutors, school and student representatives attend course meetings
- HEI and design and technology teachers from partner school attend a panel meeting to evaluate and modify the course
- design and technology teachers from the partner schools in SCITT and some HEI partnership schemes teach on the course
- HEI moderators support and advise consortium managers on SCITT course development
- quality assurance moderation exercises are done across a HEI consortium
- external examiners moderate course structure and student quality.

Student progress

This is monitored through a range of techniques including:

- design and technology teachers assisting in the selection of students by being asked for feedback following a visit of a prospective applicant to their school or taking part in the interview
- a student profile of professional competences, completed by schools in conjunction with the HEI and the student. These are formative at the end of each block practice and summative at the end of the course.

- a complete career entry profile (TTA, 1997) for students at the end of the course, include design and technology competences
- regular tutorials with HEI tutor, professional tutor and design and technology mentor
- an audit of design and technology capability started at the beginning of the course and updated throughout the course
- design and technology mentors observing lessons and providing regular verbal and written feedback
- professional tutors observing lessons, meeting with the student and providing an over view for the completion of the profile
- student evaluations of each lesson to aid future planning
- forms of peer evaluation
- in SCITT scheme the consortium manager observing at least one lesson for each student
- HEI tutors making at least one visit each practice to schools to meet with design and technology mentor, check the teaching file and observe the student teaching

Roles and responsibilities of the design and technology mentor/tutor

The development of partnerships between HEI and schools has required the formalisation of the main roles and responsibilities. A key role, and an essential element for the success of the partnership, is that of the subject mentor.

The reflective practitioner

The design and technology mentor will be expected by HEIs to fulfil a wider role than under the traditional 'apprenticeship' model or, as it has been called, 'sitting with Nellie'. (OU, 1996) It is noted in the research that a style of teaching which suits one school may not be appropriate in another. This is reinforced by Bull (1996) who suggests that the idea of students modelling or copying the particular teaching style of their mentor is not to be recommended because of the personality differences involved.

Mentors will need to ensure students fulfil the 'standards' model as required by recent government regulations, but students should also be expected to develop the 'reflective' model as a teacher. This requires the mentor not merely to show the student how to teach, but to help him/her become self-critical professionals that can analyse situations and understand the reasons for their professional

actions. The notion of 'reflective practice' stems from the work of Dewey (1933), who considered that reflective action involved a willingness to engage in continual self-appraisal and development, requiring flexibility, rigorous analysis and social awareness. This is a more critical, analytical element in the training process encouraging the student to re-focus from managing and controlling the classroom and the children to judge their own teaching performance based on whether the children's learning has been effective.

The expert teacher

The idea of a 'reflective practitioner' can be taken further to the concept of the subject mentor as an 'expert teacher', trained by the HEI to take on some of the subject-based teacher education within the school context (Banks, 1996). This is a concept that could cause problems in design and technology if teachers looked only to the student to bring new ideas and concentrate on developing classroom management and control. Yet, the notion of a design and technology mentor working alongside the student in the classroom, being able to audit, identify and rectify gaps in subject knowledge and skills is the best way of ensuring students reach the minimum level of design and technology subject competences as outlined by DATA (19%). This could be particularly helpful in design and technology as a teacher shortage subject area where the difficulties of achieving a basic level of subject competences, particularly for many one year PGCE, has been noted at primary and secondary level. (Garvey, 1996, Lewis, 1996, Rutland, 1996)

The research identifies that the quality of design and technology mentor support in schools is a crucial factor both at primary and secondary level.

- In secondary schools students have a wide background of qualifications and experience and need to update and gain new knowledge, understanding and skills in a skilled, supportive environment. It is noted in the case studies that it is not unusual for a HEI to 'de-select' design and technology departments they feel are unsuitable due to a lack of, or unwillingness to provide, good design and technology subject mentor support.
- In primary schools design and technology mentoring appears to be rare and it is not unusual to find teachers with very little or no formal training in design and technology. It is more common for them to look to the student for input in this area, resulting in the student relying on

the subject sessions at the HEI. Subject enhancement training for mentors is provided by some HEI in the National Curriculum core subjects of English, Mathematics and Science, but this is unusual in design and technology.

- SCITT and the Open University (OU) schemes depend considerably on the design and technology mentor. The OU has detailed documentation, AVA materials and mentoring courses for teacher mentors. SCITT schemes have mentor training sessions, design and technology and general professional studies courses taught by local teachers, visiting tutors and local advisory groups. They form links with local sixth form and further education colleges, for example for design and technology health and safety training and post sixteen teaching and have placements in industry, for example Case Study 4 'Industrial Placements'. (DATA, 1997)

Who should be a design and technology mentor?

It is expected that the design and technology mentors should have both the relevant subject and people skills, though they may not necessarily be the head of department. It is thought that conflict could arise if the supportive mentor is also the assessor, which is supported by Bull. (Bull, 1996) He suggests the use of a voluntary mentor, identified by the subject mentor, who has the time and willingness to help the student develop design and technology subject knowledge and skills. If this support is offered outside the judgmental framework of assessment the student is more likely to admit his/her shortcomings and work in partnership with the teacher.

General responsibilities of the design and technology mentor

Many, but not all, of these responsibilities are the same for all subject mentors/tutors. These include:

- negotiate, in collaboration with the co-ordinating professional tutor, suitable timetables
- facilitate the production of schemes of work and lesson plans
- discuss the student's planning, preparation, teaching and evaluation
- check the teaching file
- ensure student's teaching is observed approximately once a week
- offer regular verbal and written feedback designed to help the student identify

strengths and weaknesses and help set targets

- assess and provide a written report on professional teaching competences and qualities
- monitor and help in the assessment of the student's ability to work within health and safety regulations in the workshop. See 'Case Study 1 Health and Safety Training Resistant Materials'. (DATA, 1997)

Strategies used by the design and technology mentor

This depends to a great extent on the identified needs of the students and length and breadth of the course they are following. The role of the school design and technology mentor, as outlined in 'Case Study 5 Design and Technology Subject Enhancement' (DATA, 1997), might include:

Support

- taking an audit of the design and technology capability of the student at the beginning of the course followed by design and technology subject enhancement sessions
- supporting the student in developing the gaps in their design and technology capability through working on small focused design and technology tasks
- ensuring students work through the design and technology projects for each year group taught.

Monitoring

- monitoring the development and signing a log for machine activities for certification for health and safety in the workshop
- asking the student to keep a record of their developing design and technology capability.

Additional support

- encouraging other staff in the department with particular expertise to tutor the student
- if post 16 work is not possible in the placement school expecting the student/HEI, investigate other possible alternatives.

Additional activities

- teacher and student working in partnership to develop, plan, teach and assess a design and technology unit of work for a particular year group/class, including the teaching resources. For example, 'Case Study 6 Primary Design and Technology'. (DATA, 1997)

- asking the student to develop teaching materials for use in their teaching and to add to the department resource bank
- asking the student to develop IT based resources to use in design and technology lessons
- asking the student to develop a range of teaching materials to help deal with differentiation in the design and technology classroom
- expecting the student to plan individual sessions for post sixteen design and technology examination work including A' Level and GNVQ.

Training the design and technology mentor

Training of subject mentors, including design and technology, is generally through day and evening courses and conferences. It is observed in the case studies that training of the subject mentors is more difficult than training the professional tutors because:

- it is not so easy to arrange meetings
- mentors have other teaching and administrative priorities
- there is rarely any teaching time allocation for the mentor role
- though mentors may not expect to be paid direct, they would like to see some partnership money directed into their departments
- some teachers are not used to an open classroom, fear observation and are resistant to change.

Case Study 2 Design and Technology Subject Mentor Training and Case Study 3 Mentor Training Extended Partnership (DATA, 1997) provide examples of design and technology mentor training from the research.

Specific design and technology partnership arrangements between HEI and schools. These vary and include:

- HEI and schools sharing accommodation, resources and staff in course delivery, for example Case Study 7 Design and Technology Resources and Case Study 8 Current Partnership Developments in ITE. (DATA, 1997)
- taking paired student placement with complementary expertise so they can share knowledge and skills and support each other. They team teach, lead or support in the lesson, teach groups of pupils in a class or outside the room in another activity or teach parallel classes

and share the planning, for example Case Study 9 Paired Student Placements. (DATA, 1997)

- a small group of local schools link, sharing sessions, INSET and their teacher expertise for enhancing the students design and technology subject capability, for example computer aided design (CAD) or computer aided manufacturing (CAM).

Conclusions from the research

Reflections from HEIs

HEIs have made considerable progress in their partnership arrangements and where they work well, it has been found to be a better overall experience for students. In principle HEIs consider the concept of partnership to be valuable, but in practice there are still some concerns including:

- the reduction in time spent by students in the HEI and its effect on developing subject knowledge
- insecurity and some uncertainty about the future role for HEI staff in the partnership arrangement
- some people by nature fear change and have found it difficult to accept the evolving roles
- limited resources and a movement of these resources to schools have increased the pressures on HEI
- HEI tutors have a responsibility for research activity and this can cause conflicting demands on their time
- design and technology HEI tutors are required to work with teachers in schools, particularly at the classroom level, who may see no direct benefits to themselves or their departments in fulfilling their ITE role over and above their normal teaching commitment. It is the school at senior management level who signs the contract with the HEI and decides how the money received from the HEI is used.

Reflections of schools

The comments included in this section are collated from the views of the tutors at HEIs and the teachers in SCITT schemes. It was felt that the prime function of schools is to serve its pupils and it is essential that they are not disadvantaged by either a school or a teacher's involvement in a partnership scheme. This means that the effect of partnership arrangements on pupils has to be carefully monitored by the school. Not all schools may wish, or be in a position, to develop SCITT schemes and may favour the more traditional partnership style of close links with HEIs.

However, the benefits to schools and teachers include:

- keeping abreast with current development in design and technology
- raised expectation of design and technology staff
- wider and interesting opportunities for career development
- increased teacher professional motivation
- the generation of a culture of continuous professional development
- the recruitment of design and technology teaching staff with HEI experience
- the appointment of the student as an NQT
- students from a range of partnership schemes providing variety for the school
- increased resources
- a closer and sounder relationship with local schools
- improved status in the local community.

A successful partnership between HEI and schools depends on:

- a commitment to fulfil the contract by senior management in schools and HEI
- clear roles and responsibilities
- clearly defined management structures
- clear and rigorous quality assurance procedures
- an ability to work in a team
- good communications with good will, good relationships and mutual respect
- a balance between theory and practice, design and technology subject knowledge and subject application
- a balance between extended classroom experience and the ability of students to critically evaluate and reflect on their experiences
- ownership by the participants and recognition for their work.

Conclusions

At its best partnership encourages teachers in schools and HEI tutors to reflect on their practice, with a frank and free exchange of ideas of practical teaching in the classroom. design and technology teachers can gain a better understanding of changes taking place in their curriculum area at the same time as being directly involved with the development of a new generation of design and technology teachers.

The research identified concerns that should be clarified through the implementation of the new requirements for ITE courses. (TTA, 1997 a) However, the importance of the role of the design and technology mentor has, in some cases, only been recognised slowly. Yet the research emphasises that their commitment and participation is essential if an ITE partnership arrangement is to succeed. A lack of able design and technology teachers willing to take on this role is of particular concern for HEIs training teachers in this shortage curriculum area.

It could be argued that there are fundamental conflicts in a partnership arrangement where only one partner, the HEI, is ultimately accountable. If design and technology mentors and schools are both to be accountable there are some issues that still need to be addressed. At present the initial interaction between school and HEI is often at senior management level with the extent of the work between design and technology mentor and the student only becoming apparent at a much later stage in the process. This often results in an over stretched mentor who receives little if any remuneration in terms of either money for themselves or their departments, or time for both administration, including writing lesson observations, completing profiles and writing references, and the mentoring. A situation that can develop into resentment, annoyance and a break down in the relationship with the student.

Schools are paid a sum of money for each student placement, though the amount does vary considerably across the schemes. Money is also available for mentors to attend training or teacher panel meetings at the HEI or the lead school. It is the responsibility of the school to decide how the money allocated to them is used. In some cases it is given as a lump sum to the department to be used to buy free time for mentors, or purchase additional departmental resources. Some mentors negotiate with senior management a 'protected' non-contact lesson a week to ensure they can give regular tutorials.

Strategies need to be found both in HEIs and schools to deal with the issues of responsibility and accountability. ITE courses, whatever the details of the partnership, can only produce design and technology teachers that meet the present and future needs of schools when both partners have a common agreement on how this can be achieved, a common philosophy regarding the processes and procedures and are equally responsible and accountable. The partnership will only operate effectively if the primary aims and objectives of both partners are taken into account.

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Case studies of programmes, partnership arrangements and resources accessed

- East Midlands Consortium School Centred Initial Teacher Training (EMITI) Lead School – Brooke Weston CTC, Corby
- Goldsmiths College, Department of Design Studies, University of London
- Liverpool John Moores University, School of Education and Community Studies
- North London Consortium School Centred Initial Teacher Training, Lead School – Mill Hill County High School, London
- Open University, School of Education
- Roehampton Institute London, School of Education
- South West Consortium School Centred Initial Teacher Training, Lead School – St Thomas High School, Exeter