

'Building Bridges or Bungie Jumping?'

An ITT Response

Abstract

This paper highlights some of the many key features in delivering an Initial Teacher Training course for trainees focussing upon Key Stage 2 (primary) and Key Stage 3 (secondary) design and technology teaching. Effective pedagogy and assessment methods are identified as essential principles in ensuring trainees can establish coherence across the primary/ secondary divide.

The term 'Building Bridges or Bungie Jumping' is used to describe the differing approaches adopted by schools in managing the phase transition of Key Stage 2 pupils (primary) to Key Stage 3 (secondary). A 'Building Bridges' approach is one where a planned link is created between two stable, well-planned phases of education (Key Stage 2 to Key Stage 3) and students are transferred along with effective and usable information across the divide. The 'Bungie Jumping' approach, however, is one where all parties jump from one phase to the next, assured that everything is going to be all right and hope for the best.

The 'Building Bridges' approach is clearly embedded within good practice and it is through adopting this philosophy that some 20 initial teacher training (ITT) providers (Ofsted, 2000: 1) are delivering specialist Key Stage 2/3 teacher training courses.

The rationale behind the existence of a specialist Key Stage 2/3 transition course in design and technology is based upon the Teacher Training Agency (TTA) circular 1/96, which advised that new courses could be developed to cover Key Stage 2/3 (7-14 years of age). The courses were to enable the greater use of specialist teaching at Key Stage 2 and to provide additional opportunities for increasing Key Stage 2 understanding within the secondary school.

Certain features were seen as essential in creating an ITT response at Liverpool John Moores University (LJMU) including:

- providing an opportunity for raising standards in primary design and technology (where only 4% of teachers have a qualification in design related activity)
 - increasing the understanding within secondary design and technology departments of pupils' prior experiences and therefore aiding transition
 - improving recruitment to teaching by increasing diversity of courses offered (design and technology remains a shortage subject)
 - developing teachers who could adopt an identifiable co-ordinating role to oversee transition with design and technology, irrespective of the phase
 - to provide specialist design and technology co-ordinators for the limited number of middle schools remaining.
- Whilst developing an ITT response there were many issues to be resolved which served to illustrate the significant differences that exist within both phases and the demands that were being placed upon trainees. These included:
- developing specialist subject knowledge. Secondary design and technology trainees are required to attain one higher tier and one lower tier of the DATA *Minimum Competences*. For the Key Stage 2/3 course it was felt that trainees needed to be able to offer at least three and possibly all four areas (resistant materials, food, textiles, control systems) at the lower tier. This would increase their marketability whilst ensuring they could deliver and co-ordinate all areas within the Key Stage 2/3 spectrum. In addition, trainees would also complete one major project in a chosen area which would not only be comparable with work at the higher tier of the DATA's *Minimum Competences*, but also of sufficient rigour to meet the subject requirements of degree level work.
 - meeting both primary and secondary requirements. Trainees have to be able to meet the requirements and standards for the award of Qualified Teacher Status (QTS) (Annex A) (Annex I) to be able to deliver the core subjects at Key Stage 2, ICT requirements at Key Stage 2/3 (Annex B), primary English (Annex C), primary mathematics (Annex D, primary science (Annex E) and the National Literacy and Numeracy strategies.
 - providing teaching experiences in both sectors. A cohesive teaching opportunity in both primary and secondary schools over the three years of the course was essential. In addition, a final teaching practice consisting of a placement in the primary sector followed immediately by a placement in the secondary sector (or secondary followed by primary) subsequently meant shorter blocks of teaching in both sectors (with the associated difficulties) had to be established.
 - an understanding of transition issues both at a general and at a design and technology subject specific level. This included an understanding of differing teaching styles and learning styles, assessment methods,

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school organisations and management structures and transfer of pupils and information.

The task appears almost impossible, particularly when it is considered that all components of the course are to be delivered within a 3-year programme (to make it marketable alongside secondary ITT programmes). However, the reality is different. Within the design and technology components of the course, trainees spend approximately two days a week on subject specific applications. As time is limited it has to be used efficiently and effectively; trainees focus upon design and technology activities as part of a continuum rather than primary focus and secondary focus. Particularly relevant to this is the adoption of research (Kimbell *et al*) which focused upon 'Transition: Exploring the Year 6-7 Boundary'.

This work carried out as part of the 'Understanding Technological Approaches' (UTA) project examined the differences in approach between primary and secondary design and technology activities. Essentially, the research characterised the primary (Year 6) design and technology activities as being uncertain, capitalising upon tacit understanding, whilst contextualised with children operating autonomously. In addition, children acted independently, with the teacher facilitating progression.

'Primary teachers appear to be concerned to allow pupils to experience technology and to capitalise on their tacit understandings. Through experiential activities (and often using play) primary children develop tacit understanding about all kinds of technological matters... They increasingly make sense of the made world through these tacit understandings.' (Kimbell *et al*, 1996: 108)

Within the secondary design and technology activities, Year 7 activities were characterised by the teacher acting as an instructor, imparting explicit understanding, with carefully controlled steps and known outcomes. For Year 6 children this means between ending primary and starting in secondary (usually separated by a short space of six weeks) they have to dispose of their conceptual understanding of design and technology for the adoption of a differing model. A new model that often has little to do with the old, which is less contextualised, often less valid, yet which is often given greater credibility as it is often associated with specialist knowledge and formal examination systems.

'Secondary teachers by contrast, are constantly seeking to make these understandings explicit – so much so that they spend a lot of time instructing pupils about them: 'This is how X works; this is how Y moves; and this is the proper way to take Z apart'... One cannot help speculating that the middle ground between the two positions is the most fertile for children's learning.' (*Ibid*)

This research would appear to support the very concerns that currently exist with regard to transition of pupils. It is not merely organisational factors such as a big school, new teachers and discrete lessons that impact upon pupils in the early secondary years; it is the very nature of the subject pedagogy. It is this philosophy that those involved with Key Stage 2/3 design and technology endeavour to engender with ITT undergraduates at LJMU to overcome the conceptual barriers that are created for children during transition in design and technology.

Ultimately, the lack of continuity for children means a lack of progress or even a dip in performance within the early years of secondary education. This is often characterised by the development of a poor attitude towards school, a lack of motivation and pupils being turned off school, with a slightly stronger trend for boys identified (Galton *et al*, 1999).

'I have become increasingly concerned at the discernible drop in both motivation and performance of youngsters in the early part of secondary education (Key Stage 3) and that, in particular, boys perform badly at this stage.

Too little is currently expected of pupils in the first year of secondary education ... There must be no gap, no falling back, but a real transition, which ensures that pupil progress continues smoothly from junior or middle school into secondary education.' (Blunkett, 2000)

However, the impact of teaching style and the use of contextual projects are just two facets of a complex myriad, which result in the two phases of education being treated separately. In preparing future teachers for both phases the similarities and best practice from both phases have to be drawn together to illustrate an appropriate and workable model of design and technology.

Within the course, modules are devoted to developing cross phase understanding in key areas including cross phase ICT and cross phase issues relating to assessment.

The area of assessment is considered as a priority as the assessment practices of teachers in both sectors appears to be open to scrutiny. A major factor, which impacts upon pupil transition, is that teachers within the secondary sector often appear sceptical of Key Stage 2 assessment results. Research by Schagen (2000) for NFER (National Federation for Educational Research) identified that transfer information was predominantly only seen by heads of year and not subject teachers. When information was seen the following comments were identified as being typical:

'You can assume that children will have done certain topics in primary school, but not necessarily that they will understand them.'

'Primaries often say that children have done things, but it does not seem like it.'

'It is useful to know what pupils have supposedly covered, but you cannot take this at face value.'

It is clear that confidence in each other's ability to assess and use information is an integral part of any coherent education system. However, as already identified, the differences in design and technology pedagogy could lead to the above assumptions being reinforced.

To some extent there may be value in secondary school teachers' perceptions of primary practice. Although primary practice often illustrates the best examples of delivery of design and technology activities there are often weaknesses in assessment methods. This is often due to limited understanding and training in design and technology (4% of primary teachers have some design experience). Research by Moreland and Jones has indicated that although primary teachers were able to engage pupils in designerly activities they found it difficult to assess activities accurately, as they were not always sure what they were assessing.

'Many of the teachers were unable to identify the procedural and conceptual technological learning outcomes of the tasks to any great detail. Therefore interactions were frequently praise-based and related to the task completion, rather than related to enhancing students' understanding with regard to conceptual and procedural aspects.' (Moreland *et al*, 2000: 299)

Teachers therefore did not assess with any degree of confidence and ultimately assessed activities which they felt more easily able to identify and discriminate. Although this may appear valid in the short term; long term students were not receiving formative feedback relating to their designerly task.

'One teacher made comments for 29 students with 24 of these comments reflecting social and managerial aspects; another recorded comments about students' ability to communicate ideas; another recorded comments about the students' ability to take turns when reporting to others and another commented on a students' group co-operative skills.' (*Ibid*, 2000: 300)

As the majority of graduates from the Key Stage 2/3 design and technology will progress to a co-ordinating role (trainees study a subject leadership module as some will take on a co-ordinating role within their first year) it is essential that they can define design and technology activities with clarity and have a clear understanding of assessment principles. As part of this, trainees carry out a research project looking at the differing approaches to assessment in both phases.

The need for a coherent approach to pupil transition is clearly high on the Government's agenda. However, the concept of a specialist Key Stage 2 or Key Stage 3 teacher is not always fully understood by existing teachers in both sectors. Ultimately the ideal scenario would be for every department in the secondary school to have at least one transition specialist who could co-ordinate in a highly specialised manner the transfer of pupils and information from the primary to secondary school. Ideally the transition subject specialist would link and liaise with their equivalents in the primary school to ensure pupils maintain progress across the divide.

What is apparent at present is that too many schools adopt a 'bungie jumping approach' resorting to one off visits and tasters (which can actually contribute to student dissatisfaction upon arrival in the secondary school) without considering key issues relating to assessment, pedagogy, etc. No educational system can afford to have children's attainment and progress stand still (or worse still regress) with the subsequent side effects of demotivation and underachievement. It is therefore heartening to see that the QCA national schemes of work now contain a transition element, which is one short step along the long road in establishing coherence in pupil transition.

The first cohort of trainees completing the Key Stage 2/3 design and technology course graduated in July 2000. They split approximately 50% going into primary and 50% going into secondary (with one going on to teach in a Sixth Form College). Their progress is being monitored to see how they impact on pupil transition in addition to using their experiences as a feedback mechanism for further development of the course.

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