Routledge Taylor & Francis Group

Curriculum change: a study of the implementation of General National Vocational Qualifications

JEREMY HIGHAM School of Education, University of Leeds

ABSTRACT

This article focuses on curriculum change, in particular on course team responses to the introduction of a new curriculum and on the implications of empirical findings for our understanding of curriculum implementation and change. The case discussed is that of the second version of GNVQ. The discussion is based on an analysis of data collected across twenty-two course teams in ten schools and colleges over a two-year period as part of an ESRC-funded project.

The model of comprehensive assessment of the second version of the GNVQ is one in which the curriculum reinforcement role of assessment related to the coverage and standards of the qualification but not to the design of courses. Theoretically, significant scope was accorded to course teams to develop and provide courses that responded to local contexts. The article explores how patterns of difference and similarity in course team responses to the introduction of this curriculum might be explained and indicates three broad approaches: implementation, adaptation and assimilation, relating these responses to the existing experience and expertise of members of the various course teams. The article draws on concepts from the field of linguistics to put forward the notions of 'curricular fields' and 'sub-curricular fields' and suggests that curriculum implementation needs to take greater account of the subcurricular fields of course teams.

KEY WORDS

curriculum; curriculum change; innovation; course team; course; GNVQ.

The Curriculum Journal ISSN 0958-5176 print/ISSN 1469-3704 online © 2003 British Curriculum Foundation http://www.tandf.co.uk/journals DOI: 10.1080/0958517032000137649

INTRODUCTION

The development of General National Vocational Qualifications (GNVQ) offered a productive site for the study of curriculum change, not least because of the mix of national qualification implementation reinforcement features and the flexibility in course design accorded by the GNVQ model to schools and colleges. Vocational areas such as Business and Health & Social Care specified in detail the assessment objectives and criteria across all the requirements of the qualification, but left the design of the course and the associated assignments as well as their assessment to the course provider. Given the onus on institutions in respect of course design and assessment, it is instructive to investigate how different course teams with various histories and traditions in a variety of institutional and geographical contexts responded to this model of a qualification in their course provision, and to relate the curricular patterns identified to these course contexts and curricular antecedents. These areas of investigation, and their implications for our understanding of curriculum implementation and change, are the focus of this article, which centres round an analysis of data collected for a research project on the GNVQ curriculum funded by the Economic and Social Research Council (ESRC).¹ The data collected were subjected to further systematic analysis from a curriculum change perspective as one element of a further project conducted by the same research team and entitled 'Changing the 14-19 school curriculum in England: lessons from successive reforms'.²

GNVQ's general approach was not to define the content to be covered and the processes to be included in the form of a traditional syllabus with assessment sampling, but rather to specify the assessment requirements in such a way that they assessed the whole of the content, knowledge and understanding covered by the qualification. While the vocational area specifications of the original version of GNVO (which we shall term GNVO Mark I) were set out in detail and organized by unit (effectively a module), element (a subset of a module) and individual performance criteria, with accompanying statements to specify the range to be covered, the course structure and contexts were left entirely to the providing institutions to devise. One of the main critics of this approach to assessment was Smithers, who maintained that GNVQs thus had no syllabus and that this was a significant and structural weakness in the model (Smithers, 1997). Jessup, Director of Research and Development at the National Council for Vocational Qualifications (NCVQ) and later Deputy Chief Executive, would have agreed with Smithers that GNVQs had no syllabus of the traditional type, yet would have claimed that the approach of 'outcomes not syllabuses' (Jessup, 1995: 9) meant that in a curriculum such as that of GNVQ, which was specified in outcomes, there was no distinction and therefore no disparity between the learning objectives and the assessment criteria. Thus, the argument went, whereas GNVQs did specify all the learning objectives, in 'most courses and qualifications there is a mis-match between the curriculum objectives set for learning and the assessment regime that measures achievement' (Jessup, 1995: 8). Jessup argued that the assessment sampling of the syllabus would lead to a narrowed focus on those elements known to be assessed and that the only rational way to approach the design of a curriculum was to ensure coverage, through full assessment of all areas, with tasks and assessment criteria known in advance.

This approach to assessment, which might be considered to be one of the distinctive features of GNVQ, was termed 'comprehensive assessment' by Jessup. In this, the student not only had to achieve all of the pre-specified outcomes of whatever sort without sampling of the content for assessment (Jessup, 1995: 10), but was not permitted compensation of inadequate achievement in one area by higher achievement in another, thus ensuring full curriculum coverage and a minimum standard in all areas. In some respects this was a parallel to the so-called 'mastery learning' approach. This concept, in competence terms, is meant to indicate that all aspects of the pre-defined outcomes must be achieved in order for the qualification to be awarded and that the assessment of outcome is assessed on a 'pass'/'not vet competent' basis. However, as Oates (1997) suggests, the importation of this general concept from National Vocational Qualifications (NVQs) to General National Vocational Qualifications was not a straightforward transfer, in that the mastery model of assessment did not survive in a pure form and suffered some diminution in terms of the existence of grading levels (with a judgement made on only one-third of the evidence in the student's portfolio), unit tests (with only 70 per cent required to pass) and the general nature of the outcomes required by the GNVQ specifications. One could go further and make the point that the unit tests did not always cover all mandatory units and were not applicable to the optional and core skills units that formed a substantial part of the qualification. Furthermore, the original GNVO model had been modified in that the evidence indicators (clusterings of individual performance criteria) did not always require coverage of the entire range of the performance criteria. It is clear that the model of GNVO assessment was not a pure mastery model in NVQ terms, and arguably never had been. Nevertheless this general concept of 'comprehensive assessment' had some applicability with regard to GNVQ for, in order to pass the GNVQ qualification, students were assessed upon and had to complete successfully all aspects of all units.

As indicated above, this approach to assessment may be contrasted with that of a traditional academic qualification. Scriven (1967) categorized the levels at which objectives may be set into conceptual (abstract description of the area to be covered); manifestational (sorts of performance to be sampled); and operational (specification of the precise assessment task). Tomlinson (1981), commenting on this, noted that although the syllabus for a qualification, such as the General Certificate of Education Advanced Level (GCE A level), may be presented using a combination of both conceptual and manifestational level objectives, students and teachers might well be keen to gain access to examples of assessment such as past examination papers in an attempt to discern the hidden operational objectives. In contrast, the evidence indicators in the revised version of GNVQ, Mark II, might be said to be situated at the level of 'operational objectives'. This leaves course teams to devise curricular programmes responsive to students' perceived needs and interests and to local circumstance, so as to prepare their students to be assessed on these prespecified tasks.

In respect of this devising of curricula for GNVQ, Jessup claimed that:

Teachers are thus encouraged to design courses (and given the freedom to do so) which make best use of the resources available to them, taking into account the needs and interests of the students they recruit. (Jessup, 1995: 9)

In fact teachers were not only encouraged to assume the responsibility of devising their own course but were obliged to do so. Hence, in theory, considerable scope was available to institutions to develop courses that matched their local contexts, with curriculum guidance restricted to suggestions of the forms of evidence that students might submit for assessment. For Burke (1995) this approach valued the professionalism of the teacher and responded to Stenhouse's perspective on curriculum development and teacher development (Stenhouse, 1975). However, this potential flexibility in course design was a source of negative criticism in respect of the variability of approaches and degree of confusion in resourcing levels at institutional level (Spours, 1995).

A reading of the literature on curriculum implementation indicates the importance of situating curriculum study at the meso-level of the school or college (Ball, 1990; Goodson, 1988), in particular at the level of teachers (Huberman, 1988; A. Hargreaves, 1994; Bloomer, 1997; Yeomans, 1997) and, of course, teams (Fullan, 1991; Hall, 1995), as well as underlining the fact that such work has rarely been undertaken either in respect of GNVQ or more generally (Bates, 1998). Furthermore a number of researchers have called for the analysis of patterns of response to curriculum change (Bates, 1998; Goodson, 1988; Cornbleth, 1990). While stressing the complexity of the resultant situation and the individuality of specific contexts, much curriculum research does seem to ignore such pleas for systematic analysis of responses across a range of contexts and of the underlying reasons for any emergent patterns. It also ignores pleas from Goodson for a more integrated approach to theory development, which takes account of both the practical approaches in curriculum organization and implementation and the perspectives of individual teachers and course teams.

We now turn to a consideration of the findings of the ESRC-funded GNVQ curriculum research project in respect of different course team responses in implementing the GNVQ curriculum from the perspective of the overall course organization. The research questions underpinning the present study were:

- How is the post-16 GNVQ curriculum at Intermediate and Advanced levels implemented by course teams in a range of institutions?
- How might any patterns of difference and similarity be accounted for?
- What are the implications for the understanding of curriculum construction?

The collection of the data for this project was undertaken over a period of two years during which time the second version of GNVQ was in force. The GNVQ courses were investigated against a background of the high-profile national introduction of GNVQs followed by publicly expressed criticism about their outcomes-based nature and associated assessment model and procedures; the bureaucracy of the qualification; and the development and assessment of core skills.

The course teams were, however, working with a revised GNVQ and sought to respond to the problems identified, not least through the introduction of more 'user-friendly' specifications with a greater emphasis on the evidence indicators. None the less, contemporary with the data collection, further concerns regarding the GNVQ model continued to emerge nationally, together with worries about completion rates. This led to proposals for yet more revisions to GNVQ (QCA, 1997). These proposals grew out of a review of GNVQ assessment commissioned by NCVQ and led by Dr John Capey of Exeter College (NCVQ, 1995). This review resulted in the piloting of a third version of GNVQ in four vocational areas with a tightening of the specifications and a significant reduction in the scope for curriculum design by the course teams. This ultimately served as a basis for the revision of Advanced GNVQ into the (AVCE) under the Curriculum 2000 reforms, though the Intermediate GNVQ has been retained (see D. Hargreaves, 2001 and, for example, AQA, 2003a and 2003b).

For the GNVQ curriculum project a case-study approach was adopted, with intensive research into the five original GNVQ areas (Art & Design; Business; Health & Social Care; Leisure & Tourism; Manufacturing), at Intermediate and Advanced levels, which were being undertaken across ten GNVQ centres in northern England and North Wales. The selection of centres covered schools, sixth-form colleges and further education colleges in a range of geographical locations broadly representative of the national provision. All three GNVQ awarding bodies were represented. An overview of the courses within these institutions (which have been anonymized), and of the curricular responses, which we shall discuss shortly, is given in Table 1.

		*				
GNVQ centre	Туре	Location	Course area	Level	Awarding body	Approach
City School	11–18 school	Industrial area	Business	Intermediate	C&G	Adaptation
			Manufacturing	Advanced	C&G	Assimilation
Peterson School	11–18 school	Rural but near industrial towns	Health & Social Care	Intermediate	BTEC	Implementation
			Leisure & Tourism	Advanced	BTEC	Implementation
Appletree School	11–18 school	Market town	Art & Design	Intermediate	BTEC	Assimilation
			Business	Advanced	BTEC	Adaptation
Oakland School	14-18 school	Town in a rural area	Manufacturing	Intermediate	C&G	Assimilation
			Art & Design	Advanced	C&G	Adaptation
Meadow College	Sixth-form college	Large industrial town	Leisure & Tourism	Intermediate	BTEC	Implementation
			Health & Social Care	Advanced	BTEC	Adaptation
			Manufacturing	Advanced	BTEC	Implementation
United College	Sixth form/tertiary college	Medium-sized town	Health & Social Care	Intermediate	C&G	Implementation
			Business	Advanced	C&G	Implementation
Highgate College	FE college	Large industrial town	Leisure & Tourism	Intermediate	BTEC	Implementation
			Health & Social Care	Advanced	BTEC	Implementation
Morton College	FE college	Urban	Art & Design	Intermediate	BTEC	Adaptation
			Manufacturing	Advanced	BTEC	Assimilation
Stanton College	FE college	Urban	Business	Intermediate	RSA	Implementation
			Art & Design	Advanced	RSA	Assimilation
Portland College	FE college	Semi-rural near industrial area	Business	Intermediate	BTEC	Implementation
			Leisure & Tourism	Advanced	*BTEC & RSA	Assimilation

Table 1 Categorization of course teams' responses to the GNVQ curriculum

* The Advanced Leisure & Tourism course at Portland College used the optional units to offer two pathways, one specializing in Sport and the other in Travel. For each pathway a different awarding body was used.

Typically, ten days were spent in each institution investigating two post-16 courses in different areas, one at Intermediate and the other at Advanced level. The main methods employed by the project team were semi-structured interviews with managers, GNVQ co-ordinators, course leaders, tutors and students. Teaching and learning activities were also systematically observed, as were relevant meetings, external and internal verification, and other assessment activities. Beyond this, portfolios were inspected and centre and course documentation was collected along with national GNVO material such as specifications and guidance. Interviews were also held with relevant national policy-makers. The project was guided by a consultative group, and consultation and dissemination conferences were held, partly to seek participant validation of emergent findings and partly for research management and dissemination purposes. One of the advantages of this database is its simultaneous depth and width, the case-study approach being sufficiently detailed to permit in-depth consideration of individual cases, while the range of courses allowed an analysis of general patterns.

Given the focus of this article on curriculum construction in the context of GNVQ courses, and the fact that the GNVQ students were enrolled on a course as a whole (rather than on a series of subjects, as with GCSE or GCE A level), it was appropriate and important to consider the responses of the group of tutors responsible for the design, provision and assessment of the *course*. This group of tutors is referred to here by the term 'course team'. The course team level of investigation is seen as a fruitful one in terms of gaining leverage on the understanding of the processes of curriculum realization through the analysis of patterns of difference and similarity. The term 'course team' should not, however, be taken here to imply that the group was an established, static or homogeneous entity, or that it necessarily operated as an effective team of people collaborating in a shared enterprise. Indeed, to take the term 'course team' as having a wider meaning other than a simple convenient label would be to invest it with a deeper significance that is not intended.

CATEGORIZATION OF COURSE TEAM RESPONSES

In terms of devising categories for the analysis and presentation of the findings of the GNVQ curriculum research project, the intention was twofold. First, to provide a tool for the systematic analysis of the different curricular responses to GNVQ in different contexts, and for the possible contemporary and historical explanations for any patterns of response. Second, to create categories that would focus on the key role of the course team and course tutors in curriculum implementation within the wider institutional and policy context. To achieve these objectives a number of potential categories was available. Of these, some have been put forward at the level of the individual teacher in respect of a curriculum innovation in an institution. For example: Adopted early; Adopted late; Partial Adoption; Not adopted, used to analyse the Nuffield A level Biological Science project (P. Kelly, 1980). However, these types of categorization were thought to be inappropriate for the present purposes; they not only focus on the role of individual teachers, but encapsulate a time dimension (P. Kelly, 1980) and/or a voluntaristic dimension (P. Kelly, 1980; Rudduck, 1986), both of which were irrelevant in terms of the GNVQ course teams. This is because once a decision had been made to proceed with a course, there was no possibility of late adoption or non-adoption in view of the students being enrolled on the course.

Other existing categories were situated at the level of the institution. Modifying categories put forward by Saunders (1986) and Barnes *et al.* (1987) analysed institutional responses to the introduction of TVEI according to the following categories:

1 Adaptive extension

The school utilizes TVEI as an opportunity to review and reshape the whole 14–18 curriculum.

2 Accommodation

The school organizes a TVEI scheme with innovative elements but effects a compromise between TVEI goals and the claims of existing curricular arrangements.

3 Containment

The effects of TVEI funding are almost entirely confined and absorbed by the school's existing practices, which resist change.

This categorization, while having much to recommend it at an institutional level, was specific to institution-wide curriculum innovations such as the TVEI programme and did not match the scenarios at the course team level. It did, however, form a basis for the categories chosen here in that it related to the broad types of response that were found in the GNVQ courses.

For the categorization of departmental or course team responses, few models have been put forward. One of the more significant ones is that of Bowe, Ball and Gold (1992) who analysed departmental stances to the introduction of the National Curriculum in mathematics, science and English in four secondary schools. Their categories of response were 'professional' or 'technical', the former entailing a greater degree of interpretation of curriculum specifications and the latter a greater reliance on official texts and guidance. These were useful concepts, though not providing sufficient differentiation to take account of the pattern of types of response that emerged from the analysis of the GNVQ data.

It should be noted, however, that the categories developed (and described

below) were grounded in the data, that is to say, they were not predetermined categories, but described the range and pattern of curricular responses which emerged from the analysis. The development of the categories, as well as the allocation of course teams to them (see Table 1), was undertaken following careful consideration of all the evidence available and giving due weight to the various sources: student, tutor and course leader interviews; notes on course material and student work; observation notes of classes, workshops and assessment; notes of attendance at open days; other field notes. Using these sources, consideration was given to each course team's approach to a number of areas: curriculum organization; course provision; assessment; vocational aspects. These approaches were considered in the context of: institutional polices; the course's facilities and resources; the composition of the course team; staff views on the GNVQ model; the course history. They were then analysed by: institutional type; institutional context and location; vocational area; qualification level; and awarding body. The range of course team responses was clearly a continuum and a judgement had to be made with regard to the positioning of the category boundaries. This judgement resulted in three categories of course team approach: implementation; adaptation; and assimilation.

Implementation

The implementation approach is where the course team exhibits a close adherence to the implied curriculum framework, here expressed in the GNVQ specifications, and does not bring a strong or systematic independent approach to curricular organization and provision. Course teams in this category typically seek to understand what is required and expected of them by the qualification specifications or syllabus and then attempt to implement this faithfully. There are a variety of reasons for this approach, as seen below. This implementation category of course team response has much in common with the 'technical' response category of Bowe *et al.* (1992). (The subsequent two categories of adaptation and assimilation may also be said to equate to their broad category of a 'professional' response, although a distinction is made here between different orientations of course teams *visà-vis* change.)

The ten course teams in this implementation category all adhered closely to the GNVQ specifications for their vocational area, though within some course teams individual tutors took a different approach. It should also be noted that while some course teams implemented the GNVQ curriculum in a constrained way, others worked within the spirit of the GNVQ specifications, albeit with close adherence, to develop a range of practical and motivating work-related tasks.

Spread across six of the ten GNVQ centres, the course teams with an

336 THE CURRICULUM JOURNAL

implementation approach all organized the course around the GNVQ units and most had adopted the evidence indicator as the focus of course activity within these units, as implied but not required by the specifications. Typically, there was an attempt by the course team to understand what was required and expected of them in the specifications and then to implement this. This is not to suggest that they were merely 'curriculum technicians', as in the 'technical' response categorization by Bowe *et al.* (1992), as GNVQ did not provide a laid-down curriculum and hence some degree of interpretation and curricular design were required.

The apparent explanations for the general close adherence to the specifications were, however, varied and multiple. In the case of the Advanced Business course at United College, the Advanced Health & Social Care course at Highgate College, the Intermediate Health & Social Care course at Peterson School and the Intermediate Business Course at Portland College, a major contributory factor was the absence of overall course curriculum planning other than at a procedural level; for example, the allocation of units to tutors. In each of these cases, once it had been decided which tutors were teaching which units, the tutors, often from disparate teaching areas, were then given significant autonomy within their units. This ranged from full autonomy (with consequent varied curriculum design approaches) on this Advanced Health & Social Care course, to the expected use of the evidence indicator to structure the units on the other three courses. The course teams' general, but unspoken, approach was that the specifications had done most of the course planning for them in dividing up the curriculum content of knowledge, skills and understanding into suitable, or at least acceptable, units for 'delivery'. In all four cases, curriculum co-ordination was effectively left to the centrally planned GNVQ specifications and in two cases, at Portland College and at United College, this had led to staffing changes to bring about greater coherence.

The reasons for this overall approach of reliance on the specifications to dictate the structure and approach of the courses often seemed to derive from a lack of a shared understanding of the purpose and nature of the course and of a shared set of guiding principles derived from the vocational area or a related vocational or curriculum area. As one Manufacturing Advanced course tutor commented:

I mean one of the things, I mean I'll admit I'm an amateur, you know. I was a Physics teacher and then this came along, so at a certain level where I receive my knowledge of what is Manufacturing is from the specs. You know, I don't have any great experience to draw on to contrast with that. The present specs I think are more comprehensible than the previous ones.... We've learnt as we're doing it, and we have been consulted about the new rewrites.

In some cases, the administrative structures and the practical and material circumstances of the course were also highly significant in contributing to an implementation approach.

An important factor on five of the six Intermediate courses in the implementation category, including the two Intermediate courses discussed above, was the nature of the students on the course. A major justification expressed by course leaders for the close adherence to the specifications was that it was felt that the students would not be able to cope with moving too far from the specified evidence indicators or with integrated assignments. The tight structure clearly indicated in the specifications was said to lend a sense of purpose and progression as the students worked through these shorter-term tasks and gained feedback from the assessment. This was not to suggest that all the resultant courses were necessarily restricted in their scope. The Health & Social Care course at United College was carefully planned and built round a range of interesting vocationally oriented practical activities, visits and case-studies. This was also true of the Leisure & Tourism courses at Highgate College and Meadow Sixth Form College, despite the fact that none of the leaders of these courses had experience or a teaching background in the vocational area. Consequently, they did tend to rely closely on the element indicators to dictate the structure of the course and the nature of the tasks required, but then sought to give these interesting and practical content and context. In the case of the Meadow Sixth Form College course, though, there was a greater reliance on written work and on students working independently.

There were several cases where a general lack of an independent approach to the GNVQ curriculum, and the close adherence to specifications, was to a greater or lesser extent related to limited vocational experience or teaching background in the course area. Further factors that led to an implementation approach and to a restricted course with a reliance on the specifications were: the relatively low status accorded to some Intermediate courses by the institution in terms of access to specialist facilities, resources and staffing; and the policy or expectation in some institutions that GNVQ courses would be based on the evidence indicator. On some courses this policy was reinforced by pre-verification of assignments by internal verifiers to check that the assignments covered the evidence indicator.

The implementation approach was thus the result of the influence of a combination of factors. For reasons, such as a lack of external reference point or local circumstances, the course teams in this category tended to seek to understand what was required by relevant GNVQ specifications and to devise and implement a course to meet them as closely as they could. In some cases they were simply constrained to follow the specifications closely because of course structures and policies.

Adaptation

Like the implementation approach, adaptation involves the course team in attempting to meet the expectations and requirements of the qualification's specifications. This was done in a broader and less reliant way, however, with the curriculum being influenced significantly by the course team's prior teaching or vocational experience and orientation. The particular adaptation of the curriculum by the course team may or may not be conscious.

The course teams in this category had each adapted the GNVQ specifications to their own tradition of working. In the case of the Advanced Health & Social Care course at Meadow Sixth Form College, this had been the only way in which the two A level lecturers felt able to cope when faced with a new course, late access to the specifications and a lack of useful guidance. As with the college's decision to introduce the Intermediate Leisure & Tourism and the Advanced Manufacturing courses, using a course team with little or no work or teaching experience in the area, the Health & Social Care tutors had been thrown back on their own resources. However, unlike the Manufacturing course for the science and engineering tutors and the Leisure & Tourism course for the business and geography tutors, the Health & Social care course had seemed to be sufficiently close to the home economics and biology tutors' previous teaching experience for them to adapt the course, albeit using evidence indicators, to their way of working, rather than to take the implementation approach of these other course teams. In a discussion of which optional units they offered, for example, one tutor commented:

There's Technical Science for Health Care; there's Physical Science for Health Care, that's for the Chemistry unit and Physics unit. Then the Physiology's more of a Biology unit again; and then there's another Psychology-type unit

and later:

I'd say it was more academic definitely. Three-quarters academic, and even the vocational bit, you only have to sort of put it into a vocational setting.

In a similar way, the A level business studies team at Appletree School and the A level art team at Oakland School had had the confidence to adapt the Advanced GNVQ specifications in the related area to their co-existing way of working at GCE A level, near as it was to their existing specialism.

The two Intermediate courses in this category had taken an adaptation approach for very conscious but different reasons. The Intermediate Art & Design course at Morton College had been introduced following a college decision to replace a design, print and photography course. The course team, which had replaced a previous course team whose complex project organization had been too ambitious, had been keen to adapt the course to reflect their own expertise, experience and the specialist facilities of the college. This was not only because they felt they therefore offered a better course, but because they needed to distinguish the course from a parallel one at a local art college, for recruitment purposes. Being element-based the course had features of the implementation category, but it had a distinctive approach and even came close to the assimilation category discussed below.

The business background and practical orientation of the single tutor on the Intermediate Business course at City School had given her clear views on the GNVQ specifications. The tutor had not, however, sought to assimilate the course into a previous teaching tradition but rather to develop the course in line with her own concept of what was required in a business course at this level. This involved a strong element of vocationally related and practical assignments, together with a close adherence to the specifications for assessment purposes. The response was thus on the borderline of implementation and adaptation, but was judged to fall just within the latter category because of the development of a distinctive approach.

The five course teams in this adaptation category typically had a greater degree of confidence, rooted in a pre-existing tradition, than those in the implementation category. Although they too sought to understand what was required by the GNVQ specifications and to bring this about, they had a view of the wider purposes of their own course and a clearer set of curricular or vocational area principles to call upon in making judgements about the format and nature of this course. Despite the focus on the evidence indicator in most of the courses in this category, they were considerably influenced by the tutors' prior teaching or vocational experience.

Assimilation

The assimilation approach is a more pronounced and self-conscious version of adaptation. The distinction lies both in the extent of the impact of course teams' prior teaching or vocational experience and orientation, and also in the general intentions of the course team seeking to assimilate the new course into its existing curricular tradition, while meeting the minimum requirements of the qualification. This category of course team response is not dissimilar to McLaughlin's 'co-optation' category (McLaughlin, 1976) or the 'accommodation' or 'containment' categories used in the analysis of TVEI institutional responses (Barnes *et al.*, 1987).

The course teams in this category all had either a strong curriculum or vocational tradition into which the GNVQ course had been consciously assimilated. Essentially, the GNVQ course served as a vehicle for other purposes. In the case of three of the six courses in this category, the course team sought to continue with a previous course tradition. The two Tourism

340 THE CURRICULUM JOURNAL

and Sports pathways in the Advanced Leisure & Tourism course at Portland College were a clear example of tutors trying to manipulate the GNVQ course structure to continue with previously discontinued courses. Some of the tutors had never been happy with the college decision to replace their specialist course with the broader GNVQ and, when the opportunity presented itself, had seized the chance to revert to more specialized courses by developing two pathways using the optional units. In the Art & Design courses at Appletree School and Stanton College, the course teams were simply modelling their course on previous Business and Technology Education Council (BTEC) General Art and Design (GAD) courses. In the former case, the intention had been to find a successor to a BTEC First Diploma in GAD course, one that both responded to a group of disaffected pupils who needed a practical course and met tutors' existing interests and strengths. In the latter case, the GNVQ specifications had not been available until after the course started and the course team, reluctantly persuaded to change to GNVQ, were quite open about simply continuing along the lines of the BTEC GAD course:

there were no books or anything about it then. We didn't really get much information until the Christmas after we'd started in the September, so we just continued on GAD lines. And so we carried on running from those lines and there weren't units and there weren't areas, it was a grounding in Art and Design.

In a parallel way the Intermediate Manufacturing course tutors at Oakland School had been looking around for a practical course that would retain disenchanted pupils post-16. The Manufacturing course had seemed to serve the purpose and, despite the course team's focus on the evidence indicator, was assimilated into a tradition of post-16 pre-vocational and practical courses by the craft design and technology (CDT) oriented team. The other two courses in this category were also Manufacturing courses; Advanced courses at City School and Morton College respectively. On each course the content was integrated across units through projects, which were used to maintain the course teams' strong, though different traditions. In the former case it was a CDT tradition and in the latter an engineering orientation.

The course teams in the assimilation category thus consciously attempted to reinterpret the GNVQ specifications in terms of their existing course traditions which they essentially sought to preserve, through the design of a course that had strong links with their prior teaching experience. While the teams in this category were meeting the assessment requirements of GNVQ, they had exploited the flexibility in the course design to assimilate GNVQ into their existing way of working.

It might have been anticipated that some course teams would adopt a further approach of 'innovation' and some of the course teams in each of

these three categories could perhaps have been said to take an innovative approach, or at least to have innovative features in their course design. However, there were none that could lay a strong claim here to progressive curriculum development, as any curriculum design creativity seemed oriented towards the maintenance of the course teams' existing tradition.

FACTORS AFFECTING THE COURSE TEAM RESPONSES

As has been seen, the different responses of the course teams were not monocausal but rather stemmed from a combination of factors relating to the experience, context and orientations of course teams. Those in the implementation and adaptation categories tended to adopt the course structure implied by the GNVQ specifications of unit-based organization with the course activity being centred around the evidence indicators rather than developing more integrated provision and assessment. The implementation group of course teams either sought to understand and implement the specifications faithfully or lacked a coherent approach, relying on the specifications to provide the curriculum structure and organization. The adaptation group, having made an attempt to interpret what was required by the specifications, typically exhibited the confidence derived from a pre-existing tradition to adapt them to their preferred way of working. They did not, however, go as far as the course teams in the assimilation category. These teams made a conscious and systematic attempt to assimilate the GNVQ course into their existing way of working in order to maintain a course tradition, often using the flexibility inherent in the GNVQ model to design a course to meet their requirements. Thus the three types of course response interrelate and overlap and yet have clearly distinctive features. Equally, a course team was rarely a static or monolithic entity and might display within it a range of different curricular responses. This was seen in the Advanced Health & Social Care course at Highgate College where, although the overall approach was judged to be implementation, some tutors were adopting approaches resembling, at an individual tutor level, adaptation or assimilation.

In some cases the key factor in influencing the curricular response was an established course team's perception of the proximity of the GNVQ area to their traditional course area. Where the new vocational area seemed sufficiently close to their prior, or sometimes concomitant, course area, the team's response was often one of exploiting the flexibility inherent in GNVQ to adapt it to their established way of working. They even sought to assimilate GNVQ into the existing course tradition, while meeting the minimum requirements of the specifications. Where the course team lacked relevant vocational experience and expertise, or was formed of a group of tutors from disparate curriculum areas, or simply judged the GNVQ area too distant

from its own area of specialism, an implementation response was likely to result. In each case the approach was influenced by contextual factors.

Contrary to what might be anticipated, no systematic differences were found between the ways in which courses were implemented in schools and sixth form colleges as compared to FE colleges. On the other hand, significant factors included the institutional location and context. These had a direct impact on the access to vocational resources in the surrounding community and area, and the availability or otherwise of specialist course facilities. Institutional policies such as pre-verification, or the approach to core skills and institutional arrangements (such as the pattern and level of staffing and resourcing), were also significant. Generally, however, institutions did not seek to intervene directly in curricular provision, which was left to the course team to plan and deliver, once a decision had been made to introduce the course. Tutors' perceptions of their students' motivation, interests and needs also featured highly in the planning of some courses, particularly Intermediate courses, although only rarely were students accorded a direct say in the content of a course, or choice of optional units. It should also be noted that the work of the tutors was taking place during a period of rapid development and political uncertainty about the future shape of GNVQ, as indicated above. Of all the factors influencing the realization of the GNVQ curriculum in the centres in the GNVQ curriculum research project, the most significant were: the course team's prior and concomitant teaching experience and culture; the tutors' expertise in and experience of the vocational area; and the degree and type of access to specialized resources within the institution and the surrounding community.

GNVQ CURRICULUM REALIZATION

Although there were clear links between the different features of GNVQ and the course realization (in terms of curriculum design and provision), none of the features of GNVQ appeared in itself so prescriptive as to determine a particular course format, much less the overall approach of the course team, whether implementation, adaptation or assimilation. The impact of each of the central assessment features of unit tests, internal verification and external verification was relatively limited in terms of curriculum planning. Tutors typically saw these activities as separate processes that needed to be undertaken to meet the procedural requirements of the specifications. The main assessment features of GNVQ did serve to reinforce curriculum implementation, in terms of the coverage of the required qualification content at the specified standard rather than at the level of the particular format of course design.

As we have seen, the greater the confidence of tutors derived from a shared

culture and set of curricular principles, the more likely it was that they would impose their tradition on the GNVQ course. These findings support those of Quicke and Winter (1996), whose study of the responses of a small number of teachers to the National Curriculum indicated the strength of teachers' subject backgrounds. Roberts, whose research into the responses of geography teachers in three departments to the introduction of the National Curriculum, also indicated the important influence of 'continuities of professional action' (1997: 111). It also links to the findings of Goodson (1988) and Goodson and Marsh (1996) on the strong influence of the subject codification of knowledge, as underlined earlier by Bernstein (1971). More significantly, the findings from the GNVQ curriculum project point not just to the importance of the individual teacher's discipline background, but to the wider impact on a new course of the course team's overall prior teaching experience, whether subject-based, located in a vocational area or rooted in a broad teaching tradition. This links to the early responses of teachers to the pilot phase of GNVQ, as indicated by Harrop (1995), and to the early stages of the introduction of GNVQ as investigated by Helsby et al. (1998). In both cases tutors faced with limited guidance and staff development were found to be falling back on their experience of previous courses in the planning of GNVQ. In the pilot phase the result was seen to be a general disregard of the specifications and, in the early stages of introduction, an over-detailed reliance on the specifications leading to an 'atomization' of the curriculum. The data from the GNVQ curriculum project suggests that the two experiences are not different stages in the implementation of a new curriculum, but are differing course team responses. Equally, the findings indicate that the expectations expressed by Helsby et al. (1998), that the impact of this prior experience might dissipate as time passed, courses became established and more guidance became available, were perhaps a little optimistic. Indeed, in our study, once a course team had established a curricular structure and approach for a course this tended to persist and, in one notable case (the Leisure & Tourism course at Portland), the course team had retreated back into a former model of teaching.

In the light of such findings, the importance of staff development programmes in the implementation of new curricula is high, as Bates (1998) has indicated. However, among the course teams in the GNVQ curriculum research project there was little evidence of any systematic form of staff development, other than the completion of the units required by tutors to permit them to act as internal verifiers. These units were focused on assessment principles and procedures rather than on curriculum development, and were generally seen by staff as being a procedural requirement. Apart from some in-course induction of new tutors, there were only isolated pockets of in-house and external training and attendance at Further Education Development Agency (FEDA – now Learning and Skills Development Agency) network sessions; some individual instances of work placements of a week or so being undertaken by tutors; and substantial documentation available from the awarding bodies and NCVQ. The provision of staff development (except in the area of internal verification) did not form part of the GNVQ implementation model in the early stages. The role of FEDA was developed later; however, the lack of systematic professional development or in-service training experienced by tutors in the centres in the GNVQ curriculum project mirrors the findings of Helsby *et al.* (1998). This general disregard of curricular processes was in line with the GNVQ approach of focusing on the assessment of the qualification, and of using this to ensure the specifications were met, rather than paying any particular attention to the form that the GNVQ courses took or to how the curriculum was enacted.

As indicated above, some flexibility in course organization, as well as in local context and assignment design, was accorded to GNVQ centres. However, the centrally controlled assessment features of the qualification dictated the parameters of the curriculum through their comprehensive assessment approach to content coverage. This central control did not rely on legislation but on external evaluation by awarding bodies; inspection by the Office for Standards in Education (OFSTED) and the Further Education Funding Council (FEFC); financial control; as well as on advice, guidance and more formal requirements from awarding bodies and NCVQ/QCA. Additionally, various practical guides, which tended to be non-critical and to support the faithful introduction of GNVQ, were published by the awarding bodies (NCVQ and FEDA) as part of the GNVQ support programme, as well as by other interested national organizations (e.g. Understanding British Industry: Stagg, 1994) and by commercial publishers (e.g. Searle, 1996; Cotton and Robbins, 1996).

AN ANALYTICAL MODEL

Whether it is a matter of an adaptation or a fidelity approach to curriculum implementation, one important factor appears to be the perception of tutors in terms of how they understand and construe what they are being asked to provide. The findings of the GNVQ curriculum project would indicate that an established course team in a given subject or vocational area will interpret a new curriculum in terms of their conception of their existing curricular area and subsequently modify the new curriculum in the light of this. This modification, which may take the form of adaptation or assimilation for a range of reasons, might be subconscious or conscious. In other words, a course team in an area with a designation and curriculum coverage similar to the GNVQ area, such as with Art & Design or Business, or in a closely related teaching area, may simply bring their own unconscious practice to the new course. Equally, a course team faced with the need to introduce a new course in an overlapping or adjacent area may consciously consider whether it is sufficiently close to permit modification of the new course to their existing conception or too remote from their experience and expertise and thus adopt an implementation approach.

A conceptual model for analysis can be developed by drawing parallels from the field of linguistics where the concepts of 'semantic field' and 'substratum' may be helpful in the understanding and development of the analysis outlined above. In terms of curriculum, a semantic field may be said to equate to the area of content of skills, knowledge and understanding included within a tutor's or course team's concept of a subject or other curricular area. For example, the 'curricular field', as we shall term this concept, of 'Art' will differ from individual to individual and, collectively, from course team to course team, as well as over time. What some see as the subject of 'Art' will include design elements that others might exclude, but include in their conception of the curricular field of 'Design & Technology'. Curricular fields are thus bounded by the individual's views of adjacent subjects or vocational areas. These are conceptions which will be influenced by a range of contemporary and historical factors, both internal and external to the institution in which they work, including perceptions of wider, societal structures as Blenkin, Edwards and Kelly (1992) have suggested. In curricular terms this analytical model has links to Goodson's work on the development of subject identity (1988) and also to Bernstein's classification of knowledge (1971), although here the primary interest is in the individual or course team's conception of the curricular field.

The significance of this analytical model becomes apparent when considering the process of curriculum change and linking this to the concept of substrata. Substrata and superstrata are concepts used to analyse and explain linguistic change over time, whether it be phonetic, semantic or orthographic change. The different 'substrata' languages spoken by the indigenous peoples of the Roman Empire, and their associated concepts, for example, affected how they spoke their conquerors' language of Latin and the semantic fields which they ascribed to Latin terms. The languages of subsequent invaders, or 'superstrata' languages, superimposed new linguistic forms which, in combination with the effects of the substrata languages, resulted in a wide range of related but distinct Romance languages such as Spanish, Romanian and Occitan. In this analysis, the 'sub-curricular field', as we shall term the curricular substrata, is parallel to the notion of curricular antecedents discussed in recent years by, for example, Goodson (1988), though here we are using the term to denote the individual or collective conception of the preceding curricular field. In GNVQ the concept of superstrata relates to the subsequent revisions to the qualification imposed on existing courses. But these are outside the scope of this article.

From our discussion above it can be seen that the sub-curricular field of an established course team had a strong impact on the conception of the curricular field of the new GNVQ course and consequently on how the course team designed and delivered it. Equally, where a course team perceived the GNVQ area to have insufficient overlap with its existing course area, the course team did not build strongly on this sub-curricular field, but tended to adopt an implementation approach. This was the case with the Manufacturing and Leisure & Tourism courses at Meadow Sixth Form College. In further cases, as with the Advanced Business course at Appletree School, the provision of a concomitant GCE A level business studies course by the same course team directly affected their curricular field of GNVQ Business, as they wished to establish a distinction. Thus it can be seen that curricular fields are influenced by both pre-existing and co-existing curricular fields as well as being governed by the assessment requirements and curricular model of any qualification to which the course leads.

Where flexibility in course design was accorded to an established course team, in respect of a GNVQ course in a new vocational area (coupled with the non-availability of a GNVQ vocational area matching the team's specialism), a range of curricular fields operationalized into diverse courses can result. This was the case with the various GNVQ Manufacturing courses in the GNVQ curriculum project. These observations point to the potential of the analytical concept of curricular fields, with associated substrata and superstrata, as a productive focus for research into curriculum change.

CONCLUSION

It has been seen in this article, and in other studies of GNVQ (Bloomer, 1997; Harrop, 1995; Helsby et al., 1998), that the influence of sub-curricular fields is a key one. In its model of curriculum implementation GNVQ permitted, even encouraged, such influences to come into play; this occurred because of the focus on the curriculum reinforcement role of assessment at the level of coverage and standards, but not in terms of course organization and provision. The broad adaptation model of GNVQ has, with AVCE, now moved significantly towards one with considerable course prescription. This begs the question as to which is the more effective model in terms of achieving the aims of a national qualification. While this is a matter for empirical research, one can speculate that to move too far towards a prescriptive model is, as Rudduck (1986) has suggested, to deny the professional experience and expertise of tutors and risk a lack of commitment to a curriculum innovation. Kelly has gone further in proposing an empirical-rational strategy, stating that curriculum change needs to involve teachers not only in the development of the new curriculum but must also engage them with the rationale for

change (A. V. Kelly, 1990). Taylor *et al.* (1997) also reject a dislocation between policy and implementation, arguing that this can lead to a badly implemented curriculum programme borne out of a lack of understanding by teachers of what is required. Beyond this Bates and Dutson indicate, with respect to NVQs, that any attempt to design externally a curriculum policy and model, without the full involvement of those concerned in its provision, does make the qualification 'all the more open to creative invention as it passes through the terrains which they control' (Bates and Dutson, 1995: 57). The general thrust of these arguments is summarized cogently by Bloomer:

curriculum development can no longer proceed on the assumption that prescriptions count for all and that teachers and students are little more than technicians and consumers in the process; rather, curricula must be planned in full recognition of the essential contributions which teachers and students make to their final constructions. They must be planned *around* those contributions. (*Original emphasis*) (1997: 188)

With respect to the current reform process for Curriculum 2000, Savory, Hodgson and Spours have raised concerns about the role of teachers and curriculum development. Reporting on a survey of subject teachers' views, they state:

Having taken the best part of a decade to get used to Advanced GNVQ, many post-16 teachers had begun to appreciate its active approaches to teaching and learning and the new skills it developed in both students and staff. The new AVCE model with its increased emphasis on external testing could be seen as compromising this emerging culture. (Savory, Hodgson and Spours, 2001: 36)

Initial findings such as these not only emphasize the central role of teachers and course teams but also the importance of staff development and the time needed for an innovation to bed down. Additionally, the GNVQ research reported above suggests that careful account at the institutional level also needs to be taken in the composition of course teams, in particular with regard to existing professional knowledge, experience and expertise in relation to the proposed curriculum innovation and its model of implementation. Further research is needed into the response of subject tutors and course teams to AVCE, focusing on curricular implementation and change at the subject level, and the concept of sub-curricular fields. More generally, these important dimensions in curriculum innovation are currently underresearched, not least with reference to the responses of teachers and course teams to external curriculum initiatives. The development of the latest 14–19 curriculum proposals provides an ideal opportunity for such work (DfES, 2003).

NOTES

- 1 This project, entitled 'Constructing a new curriculum: the rise of General National Vocational Qualifications' (award number R00023 5911), was conducted by Dr Paul Sharp, Dr David Yeomans and myself, all of the Post-14 Research Group at the University of Leeds.
- 2 This project was also funded by the ESRC (award number R00022 3412) and was undertaken between 1 November 2000 and 31 October 2001.

REFERENCES

- Assessment and Qualifications Alliance (2003a) GNVQ Leisure and Tourism: Six Unit Intermediate. Old Woking: AQA.
- Assessment and Qualifications Alliance (2003b) Advanced Vocational Certificate of Education: Leisure and Recreation Advanced. Old Woking: AQA.
- Ball, S. J. (1990) The Micro-Politics of the School: Towards a Theory of School Organization. London: Routledge.
- Barnes, D., Johnson, G., Jordan, S., Layton, D., Medway, P. and Yeomans, D. (1987) The TVEI Curriculum 14–16: An Interim Report Based on Case Studies in Twelve Schools. Sheffield: Employment Department.
- Bates, I. (1998) The Competence and Outcomes Movement: The Landscape of Research. Leeds: 14–19 Research Group, School of Education, University of Leeds.
- Bates, I. and Dutson, J. (1995) 'A Bermuda Triangle? A case study of the disappearance of competence-based vocational training policy in the context of practice'. *Journal of Education and Work* 8(2): 41–59.
- Bernstein, B. (1971) 'On the classification and framing of educational knowledge'. In Young, M. F. D. (ed.), *Knowledge and Control: New Directions for the Sociology* of Education. London: Collier-Macmillan; 47–69.
- Blenkin, G. M., Edwards, G. and Kelly, A. V. (1992) *Change and the Curriculum*. London: Paul Chapman.
- Bloomer, M. (1997) Curriculum Making in Post-16 Education: The Social Conditions of Studentship. London: Routledge.
- Bowe, R., Ball, S. and Gold, A. (1992) *Reforming Education and Changing Schools*. London: Routledge.
- Burke, J. (1995) 'Theoretical issues in relation to Jessup's outcomes model'. In Burke, J. (ed.), Outcomes, Learning and the Curriculum: Implications for NVQs, GNVQs and Other Qualifications. London: Falmer Press; 55–82.
- Cornbleth, C. (1990) Curriculum in Context. London: Falmer.
- Cotton, J. and Robbins, D. (1996) *The Theory of GNVQ Planning and Assessment*. London: Kogan Page.
- Department for Education and Science (2003) 14–19: Opportunity and Excellence. London: DfES.
- Fullan, M. (1991) The New Meaning of Educational Change. London: Cassell/ Teachers College Press.

- Goodson, I. (1988) The Making of Curriculum: Collected Essays. Lewes: Falmer Press.
- Goodson, I. and Marsh, C. (1996) *Studying School Subjects: A Guide*. London: Falmer Press.
- Hall, G. E. (1995) 'The local educational change process and policy implementation'. In Carter, D. and O'Neill, M. (eds), *International Perspectives on Educational Reform and Policy Implementation*. London: Falmer Press; 101–21.
- Hargreaves, A. (1994) Changing Teachers, Changing Times. London: Cassell.
- Hargreaves, D. (2001) *Review of Curriculum 2000: QCA's Report on Phase One.* London: Qualification and Curriculum Authority.
- Harrop, J. (1995) 'The introduction of General National Vocational Qualifications: the first year – September 1992 to June 1993'. In Burke, J. (ed.), Outcomes, Learning and the Curriculum: Implications for NVQs, GNVQs and Other Qualifications. London: Falmer Press; 117–29.
- Helsby, G., Knight, P. and Saunders, M. (1998) 'Preparing students for the new work order: the case of Advanced General National Vocational Qualifications'. *British Educational Research Journal* 24(1): 63–78.
- Huberman, M. (1988) 'Teacher careers and school improvement'. *Journal of Curriculum Studies* 20(2): 119–32.
- Jessup, G. (1995) 'Characteristics of the GNVQ model'. British Journal of Curriculum and Assessment 5(3): 8-11 and 16.
- Kelly, A. V. (1990) The National Curriculum: A Critical Review. London: Paul Chapman.
- Kelly, P. (1980) 'From innovation to adaptability: the changing perspective of curriculum development'. In Galton, M. (ed.), *Curriculum Change: The Lessons of a Decade*, Leicester: Leicester University Press; 65–80.
- McLaughlin, M. W. (1976) 'Implementation as mutual adaptation: change in classroom organization'. In Flinders, D. J. and Thornton, S. J. (eds) (1997) *The Curriculum Studies Reader*. London: Routledge; 167–77.
- National Council for Vocational Qualifications (1995) *GNVQ Assessment Review* (the Capey Report). London: NCVQ.
- Oates, T. (1997) 'Assessment and achievement'. In Hodgson, A. and Spours, K. (eds), Dearing and Beyond: 14–19 Qualifications, Frameworks and Systems. London: Kogan Page; 135–47.
- Qualifications and Curriculum Authority (1997) GNVQ Pilot 1997–1999. London: QCA.
- Quicke, J. and Winter, C. (1996) 'Autonomy, relevance and the National Curriculum: a contextualized account of teachers' reactions to an intervention'. *Research Papers in Education* 11(2): 151–72.
- Roberts, M. (1997) 'Reconstructing the geography National Curriculum: professional constraints, challenges and choices'. In Helsby, G. and McCulloch, G. (eds), *Teachers and the National Curriculum*. Cassell: London; 96–111.
- Rudduck, J. (1986) Understanding Curriculum Change. Sheffield: University of Sheffield.
- Saunders, M. (1986) 'The innovation enclave: unintended effects of TVEI implementation'. In Fiddy, R. and Stronach, I. (eds), TVEI Working Papers No. 1. Norwich: CARE: 1–10.

- Savory, C., Hodgson, A. and Spours, K. (2001) *The Subject Teacher Perspective on the First Year of Curriculum 2000: The Triumph of Quality over Quantity.* London: Institute of Education/National Union of Teachers.
- Scriven, M. (1967) 'The methodology of evaluation'. In Tyler, R. W., Gagné, R. M. and Scriven, M. (eds), *Perspectives of Curriculum Evaluation*. Chicago: Rand McNally: 39–83.
- Searle, E. J. (1996) Developing Assignments for GNVQ: A Guide for Writers and Assessors. Winchcombe: Learning Partners.
- Smithers, A. (1997) 'A critique of NVQs and GNVQs'. In Tomlinson, S. (ed.), Education 14–19: Critical Perspectives. London: Athlone Press; 55–70.
- Spours, K. (1995) The Strengths and Weaknesses of GNVQs: Principles of Design. Learning for the Future, Working Paper 3. London: Institute of Education, University of London.
- Stagg, P. (1994) Introduction to GNVQ: A Practical Guide. Oxford: Understanding British Industry.
- Stenhouse, L. (1975) An Introduction to Curriculum Research and Development. London: Heinemann.
- Taylor, S., Rizvi, F., Lingard, B. and Henry, M. (1997) *Educational Policy and the Politics of Change*. London: Routledge.
- Tomlinson, P. D. (1981) *Educational Objectives and their Specification*. Leeds: School of Education, University of Leeds.
- Yeomans, D. (1997) A longitudinal study of the development, implementation and impact of the Technical and Vocational Education Initiative with particular reference to selected secondary schools and curriculum subjects (unpublished Ph.D. thesis, University of Leeds).