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**GCSE GRADES AND GNVQ OUTCOMES:
RESULTS OF A PILOT STUDY**

P. RUDD and H. STEEDMAN

ABSTRACT

This paper reports an investigation into the importance of basic skills in literacy and numeracy in the promotion of success on intermediate vocational courses at age 16+. Two measures of attainment in literacy and numeracy are examined; GCSE passes in English and Mathematics analysed by grade awarded and the Adult Literacy and Basic Skills Unit (ALBSU) tests in communication and numeracy. The study examines the relationship between prior attainment as attested by GCSE grades and ALBSU scores and course outcome. The extent to which a consistent relationship is found between GCSE grades and ALBSU scores is also examined.

The study uses a random sample of 142 students drawn from a population of all first year 16/17 year old students who enrolled at a London Further Education college in 1994. A sub-sample of students on GNVQ Intermediate and NVQ level 2 courses is examined in greater depth. Data on course outcomes was collected at three points in time, 1995, one year after enrolment and on two occasions in 1996. It was therefore possible to chart the progress of students in the sample who took more than one year to complete an Intermediate (G)NVQ.

Initial analysis found that at the GCSE middle grade range (Grades C, D, E, F) there was a wide range of literacy and numeracy outcomes as measured by the ALBSU literacy and numeracy tests. GCSE Maths and English passes at these grades do not appear to guarantee threshold attainment levels in basic numeracy and literacy. No significant relationship is found between prior attainment as measured by GCSE Maths and English grades and course outcomes. The ALBSU test scores proved to be more helpful in predicting student outcomes on the Intermediate GNVQ but were still fairly weak predictors.

The high proportion of leavers from the sample, probably influenced by 'pull' factors from the labour market, gives cause for concern. There is no evidence to indicate that weaker students leave Intermediate GNVQ courses early, if anything, the reverse is true. A significant proportion of Intermediate GNVQ students gained their awards after the prescribed one year study period. Commitment and motivation to succeed appear to be as — if not more — important than academic qualifications for success on Intermediate GNVQ. The study offers evidence that, for those motivated to persist with their studies, GNVQ can offer a valuable 'bridge' to further and higher education opportunities to students who have performed poorly on 'academic' GCSEs.

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INTRODUCTION

The principal aim of this report is to investigate the role of prior attainment in basic skills (literacy and numeracy) of 16-year-olds in England in promoting success on full-time vocational courses at age 16. GCSE grades in English and Mathematics obtained at age 16 are the principal guides available to colleges of standards attained in numeracy and literacy. They are normally used by colleges in their selection procedures for students applying for entrance to vocational courses in Further Education. It is, of course, relevant to ask whether GCSE Maths and English give a reliable indication that students have acquired the basic literacy and numeracy that would enable them to reach the standards required of post-16 vocational courses. This question is examined by comparing the scores achieved by our sample of students on the ALBSU (Adult Literacy and Basic Skills Unit) tests in numeracy and literacy with their GCSE Maths and English grades. The paper then explores how useful such grades might be for course selection purposes, that is whether or not these indicators can be used to reliably predict student achievements on intermediate NVQ and GNVQ courses.

In 1994, when this investigation was initiated, it was expected that it would be possible to use the Further Education Funding Council's (FEFC) database, compiled from the Individualised Student Record (ISR) returns of FE colleges, to investigate the relationship between GCSE grades and course outcomes. In 1994 the ISR did include a field for the collection of information on student qualifications (GCSE passes and grades) upon entry to college, but this information was not actually collected until 1996. Even then, 1996 was regarded as a 'test year' and the qualifications data were only collected for certain categories of students on FEFC-funded courses. Full collection of this

information is planned for the academic year 1997/98.¹ Thus in 1994 the FEFC database contained no information on entry qualifications and by 1996 still only contained limited information with restricted availability. With the development of the Individualised Student Record by the FEFC and the use, since March 1997, of College Performance Indicators, a larger-scale analysis may soon be possible.

The investigation presented here is therefore based upon a sample of student enrolments in Autumn 1994 at an FE college which in this paper is referred to as *Parkfield College*. The college is situated in an urban area on the fringe of the inner city and has a relatively high proportion of students requiring English for Speakers of Other Languages (ESOL) tuition. The study was carried out in three phases: (i) an initial phase, which involved setting up the sample with the help of staff at Parkfield College and collecting and analysing preliminary data on the students; (ii) an intermediate phase, which involved the collection of results for one-year courses; and (iii) a final phase in which further results were obtained, after two years, providing a complete picture of student outcomes for this sample.

This paper is structured as follows: Section 1 provides a review of some relevant literature on entry grades and progression on post-16 vocational courses and situates the study within the on-going body of research in this field. Section 2 outlines how the sample was set up in 1994 and describes this sample in terms of GCSE grades attained in English and mathematics, along with numeracy and literacy levels as measured using scores compiled from the ALBSU tests. This section also sets out our findings concerning the relationship between GCSE grades in Maths and English and ALBSU scores. Section 3 examines the course outcomes of the student sample after one year (Autumn 1995) and considers the relationships between GCSE entry grades and these outcomes. Section 4 reports on these relationships after two years (Autumn 1996) when further results were available for the one-

¹ Information supplied by FEFC Support Desk, March 1997.

year course sample and first results were available for the two-year courses. Section 5 looks in detail at the relationships between GCSE grades, ALBSU test scores and course outcomes, and Section 6 examines briefly course outcomes across the different types of group at the college (NVQ, GNVQ, GCSE and A level). Finally, Section 7 draws some conclusions from the study.

1 BACKGROUND: PARTICIPATION IN POST-16 VOCATIONAL COURSES

1.1 The Importance of Post-16 Participation

In 1993, a year before this research was begun, the Audit Commission together with the Office for Standards in Education (Ofsted) published a report which noted that participation rates are an indicator of young people's views of 'the worth of 16-19 education' and suggested that "Too few of the young people who enrol on 16-19 courses complete their courses successfully" (Ofsted/Audit Commission, 1993). The Commission also noted that costs are incurred when 16-19 students do not complete their courses:

When a student enrolls on a course, public expenditure is committed to helping the student towards successful completion of the course. If the student does not obtain the intended qualification, the expenditure has not demonstrably achieved the purpose for which it was committed (*ibid*).

These comments were applied to all types of 16-19 course, including GCSE and A level as well as vocational courses.

1.2 Prior Attainment and Progress on Vocational Courses

The Audit Commission attempted to produce a ‘value added’ component for vocational courses — such a component could be used to show how much progress students make given their qualifications upon entry to the post-16 sector — but the Commission found that:

For most vocational courses final attainment is modestly or weakly correlated with prior GCSE attainment. The correlation is in most cases large enough to suggest that prior GCSE attainment has some influence on achievement on vocational courses, but not strong enough for it to be used as the baseline for measuring progress in a value-added approach...(*ibid*).

The Commission suggested a way of allocating ‘points’ to different types of vocational qualification as a basis for measuring the ‘value added’ dimension of such courses, but stressed, however, that “Neither this nor any other approach to quantitative evaluation can operate comprehensively until deficiencies in student data records are made good” (*ibid*).

In an appendix to their report a number of possible explanations for the weakness of the relationship between prior and final attainment were proposed, including the following:

- C the attainments and attitudes reflected in GCSE results are not relevant to the objectives of the vocational course;
- C the vocational course for some reason has not built upon the differing abilities and attainments of the students;
- C procedures for assessing student attainment on vocational courses are not sufficiently uniform and reliable;
- C the range of attainment from which the course recruits is too narrow to have much bearing on the course outcomes (*ibid*).

1.3 Core Skills and Vocational Courses

The fieldwork for the Ofsted/Audit Commission report was carried out prior to the full-scale introduction nationally of General National Vocational Qualifications (GNVQ) in 1993.² The vocational courses examined by Ofsted/Audit Commission were principally of the type traditionally awarded by City & Guilds (C&G), the Royal Society of Arts (RSA) and the Business and Technician Education Council (BTEC). With the introduction of GNVQ in 1993/94, the nature of the vocational courses taken by students changed in two significant respects. First, the GNVQ specification was drawn up nationally instead of being decided by each college as was the case with, for example, BTEC awards. In theory this meant that course requirements could not be adjusted to accommodate student weaknesses as had been the case with some colleges offering BTEC qualifications. Second, the GNVQ units spelt out more clearly and exhaustively than had been the case with the more traditional vocational qualifications a set of core skills in which students had to demonstrate competence in order to obtain a GNVQ award. Chief among these requirements were core skills units in which the student has to demonstrate certain standards in the skills of communication and the application of number (see Dearing, 1996a). These requirements make it reasonable to hypothesise that students' performance on GNVQ courses might depend more strictly on prior attainments in literacy and numeracy than had been the case with the 'traditional' vocational courses examined in the Ofsted/Audit Commission research. As reported below, there were doubts as to whether GCSE Maths and English grades gave a very reliable indication of students' attainments in the sorts of literacy and numeracy skills required for success on GNVQ courses and this research looks for a relationship with an alternative measure, the Adult Literacy and Basic Skills Unit literacy and numeracy tests.

² The first five GNVQ programmes were implemented in the academic year 1993/4. These had been piloted in a small number of colleges in 1992/3.

1.4 Completion Rates and Reasons for Student Drop-Out

While this study was in progress, further research re-examined emerging evidence on progression and retention on GNVQ courses and the relationship between progress on GNVQs and prior attainment. A review of the literature on A level and GNVQ course completion rates carried out for the Dearing Report emphasised that the study of non-completion rates on post-16 vocational courses “is beset by problems of insufficient information and differences of interpretation” (Dearing, 1996c). Completion rates on GNVQ courses vary widely between courses and between institutions. There does, however, tend to be more information available for GNVQ than for A level courses for two reasons. Firstly, GNVQ students are registered with awarding bodies at the beginning of the programme, while A level registrations do not usually take place until late in the course. Second, GNVQs are relatively new, and have therefore been the subject of several recent national studies. The review mentioned above found that: (1) estimates of GNVQ non-completion tend to be around 20% for the one-year Intermediate course; (2) a high proportion of student withdrawals take place in the first few weeks of a course; (3) there are higher rates of non-completion in general FE colleges than in other types of institution, and; (4) prior attainment has a strong influence on withdrawal from A level and vocational courses (*ibid*).³

³ The finding relating to prior attainment is based on the research carried out by Ofsted and the Audit Commission (1993) mentioned above. In relation to vocational courses this involved the use of ‘value added’ calculations for a sample of 187 students on City & Guilds and BTEC First Diploma courses. The calculations were based on each student’s GCSE results for English, mathematics and their best five other GCSE grades, allocating 7 points for a grade A, 6 for a B and so on. Students with up to 10 points at GCSE had a non-completion rate of over 40% for vocational courses, compared with 25% among those with 11 to 20 points, and under 15% drop-out for students with more than 21 points at GCSE (Ofsted/Audit Commission, 1993; Dearing, 1996c).

The last point mentioned above, on the relationship between prior attainment and withdrawal from GNVQ courses, needs further consideration. A research study carried out for the Dearing Report (Dearing, 1996*b*) examined non-completion of GNVQ in schools and found that “There was no significant relationship between entry requirements and withdrawals for either Advanced or Intermediate level GNVQ”. The most common destination for students withdrawing from Intermediate GNVQ courses was employment: this accounted for 41% of withdrawals. The second largest category was ‘left school — destination not known’ at 20%. “This indicates that teachers were not always aware of the destinations of students leaving GNVQ courses” (*ibid*).

In the first few years of implementation of GNVQ courses in the FE sector drop-out has continued to be a major cause of concern and it has been noted that non-completion reached a rate of over 50% in some FE colleges (Dearing, 1996*c*). The reasons for withdrawal can be categorised into four main groups:

- C Employment-related (students leaving to take up employment: employer demands on students with full- or part-time jobs);
- C Organisational factors (range of courses offered, pre-course guidance and induction, tutorial provision, timetabling);
- C Course-related (course content and structure, match between level of difficulty and students’ abilities);
- C Personal difficulties (financial problems, accommodation, family demands and health) (*ibid*).

This is a useful categorisation but, as the present study will show, it is often difficult to discover the reasons for non-completion of vocational courses and more work is needed in this area.

2. INITIAL PHASE (1994)

The initial phase of the Parkfield study involved communications with a number of colleges preparing students for GNVQ Foundation, Intermediate and Advanced qualifications. It was during this phase that it became clear that although colleges were admitting students to their GNVQ courses based upon their GCSE results, they were subsequently administering diagnostic tests developed by ALBSU to identify students who were likely to require additional help in literacy and numeracy. It was considered that comparison of students' GCSE Maths and English grades and ALBSU numeracy and literacy scores could provide additional insight into how reliably the various GCSE grades certified a basic level of numeracy and literacy. Information was collected on ALBSU test scores as well as GCSE examination grades. Colleges administered the ALBSU tests because they had found that GCSE grades alone, particularly at the lower grade points, could not predict with any accuracy how well students were likely to cope with the demands of GNVQ. It was also noted that a proportion of students were admitted to GNVQ courses on criteria other than GCSE grades, such as interview performance, and that some students, for one reason or another, did not have GCSE grades.⁴

⁴ A national survey of GNVQ subject team leaders in 1993-4 revealed that the most common entry requirements for GNVQ Intermediate courses were: (1) 'lower grade GCSEs' (37%); (2) 'no formal requirements' (24%); and (3) interviews (13%). Around 6% of institutions required four C/D GCSE grades including Maths and English and a further 6% required four C/D grades in any subject. Only 5% of centres based admission upon 'evidence of literacy and numeracy' alone (Further Education Unit/Institute of Education/Nuffield Foundation, 1994). A later study also found that although most GNVQ centres have clear, formal entry criteria for students applying to GNVQ courses, they do not in practice maintain these criteria rigidly. 'Interviewing', 'profiling' and other procedures are used as well as the application of minimum GCSE grades (FEDA/Institute of Education/Nuffield Foundation, 1997). Similarly, a Review for the Dearing Report found that "Entry criteria for Intermediate GNVQs ranged widely from open entry policies to requirements similar to those for

A college was needed that could provide a large sample of students with the relevant information for each individual relating to GCSE Maths and English grades, ALBSU test scores and college course options. A number of colleges showed interest at this stage, but in the event only one college, Parkfield, was used for the study. There were a number of reasons for this. Firstly, researchers already had contact with staff at Parkfield arising from a previous project and, secondly, Parkfield staff were willing to co-operate in supplying detailed information about a reasonably-sized randomly selected sample of students on a range of different NVQ/GNVQ courses. At this stage there were considerable difficulties in collecting appropriate data from a suitably-sized sample: for example, the only way of obtaining GCSE results was by means of the college co-ordinator arranging for group tutors to ask students individually what results they had achieved. This meant that college staff had to spend a good deal of time and effort collecting and passing on information on our behalf.

2.1 Sampling

The sample was selected randomly by taking every fourth student on a register of students admitted to the college at the start of the 1994/95 academic year. This resulted in a sample of 142 students from the original population of 559. Students in our sample were enrolled on the whole range of one-year GCSE, GNVQ and NVQ courses offered at the college. Since one of the aims of the study was to assist the college in evaluating the usefulness of the ALBSU tests for all students, all courses were sampled, although the Intermediate GNVQ sample was the main interest of the study.

Of the 142 students in the sample, 89 were following one-year courses and 53 were on courses of two years duration. GCSE English results were available for 112 of the 142 students and GCSE Mathematics grades for 107. In addition complete ALBSU test score

advanced courses...” (Dearing, 1996c).

information was available for 134 individuals. Individuals were dropped from these calculations if we had no information on either their GCSE grades or their ALBSU scores: 2 cases had no such information, so in this respect there was a useable sample of 140. In other words, 140 students had either a GCSE Maths/English grade or an ALBSU test result or both. No attempt was made to fill in the missing grades because this would have made unjustifiable demands upon the college co-ordinator and the group tutors. In the following calculations we use only students for whom we have the relevant GCSE grade/ALBSU test information, consequently the numbers involved are usually less than 142.

Table 1 below shows that our random sample was an accurate reflection of the original college population of 559 students: that is, the sample contained a fair spread of students from different types of courses within the college.

TABLE 1

**Comparison of Parkfield College Population and
Random Sample Figures by Course Enrolments
(numbers and percentages)**

Type of course	Parkfield College Population (N=559)		Parkfield College Sample (N=142)	
	Number	Percentage	Number	Percentage
GNVQ-F	14	2.5	4	2.8
GNVQ-I	101	18.1	32	22.5
GNVQ-A	93	16.6	21	14.8
NVQ1	---	---	---	---
NVQ2	58	10.4	15	10.6
NVQ3	18	3.2	5	3.5
A LEVEL 1-YEAR	44	7.9	9	6.3
A LEVEL 2-YEARS	108	19.3	27	19.0

Parkfield had greater proportions of students taking GCSE or A level courses than the national average and lower proportions of students taking NVQs and GNVQs than the national average. The higher proportions of GCSE and A level candidates can be explained by the fact that the college recruits mainly from an area where all LEA maintained schools have only 11-16 provision. The college is competing with a number of post-16 institutions, many with strong ‘academic’ traditions.

Since the research of which this enquiry forms a part is concerned with retention and progression of low-attaining students on full-time vocational courses, the main analysis concentrates upon a sub-sample of GNVQ Intermediate and NVQ level 2 students. There were 46 students⁵ in this ‘Intermediate’ sub-sample which included individuals from the following college groups:

GNVQ	Business	Intermediate
GNVQ	Health and Social Care	Intermediate
GNVQ	Information Technology	Intermediate
GNVQ	Leisure and Tourism	Intermediate
GNVQ	Science	Intermediate
NVQ	Business	Level 2
NVQ	Hairdressing	Level 2

It should be noted that the GNVQ courses in Business, Leisure and Tourism and Health and Social Care were in their second full year

⁵ There were 47 students in the GNVQ Intermediate and NVQ 2 groups. However, there was one individual for whom we did not have an outcome even after two years: this individual was consequently dropped from our sub-sample.

of operation.⁶ GNVQ Science had been piloted nationally in 1993/94, so this was the first year of full implementation, and GNVQ Information Technology was being offered at Parkfield as one of a number of national pilot courses.⁷

2.2 Entry Data: GCSE Grades

Table 2 below compares the GCSE Mathematics and English grades of Parkfield students (main sample) with national average grades in these subjects.

⁶ These three GNVQs, along with Art and Design and Manufacturing had been piloted nationally in 1992/93. It is noticeable that these first five GNVQ courses did *not* have a strong requirement for numeracy skills: GNVQ courses in subjects such as Science and Engineering were yet to be introduced.

⁷ The GNVQ *National Survey Report*, published in June 1997, noted that although 15 GNVQ subjects were available, at this time GNVQ programmes remained dominated by 4 of the original 5 subjects introduced in 1993/4: Art & Design, Business, Health and Social Care, and Leisure and Tourism. These four subjects accounted for about 75% of GNVQ registrations in 1996/7 (FEDA/Institute of Education/The Nuffield Foundation, 1997). Of our 32 GNVQ Intermediate students, 19 were from the last three of these four areas (there were none from Art and Design): the remaining 13 were from the Science and Information Technology groups. The national study mentioned above also estimated that in 1995/6 around a quarter of Advanced and almost half of Intermediate students were in schools (*ibid*).

TABLE 2**Comparison of GCSE Mathematics and English Grades of Parkfield Students with the National Averages (Percentages)**

GRADE	GCSE MATHEMATICS GRADE % (N=107)		GCSE ENGLISH GRADE % (N=112)	
	Parkfield	National (a)	Parkfield	National (a)
A	5	10	7	11
B	6	12	13	19
C	13	24	38	27
D	24	15	23	20
E	28	16	13	13
F	16	12	5	7
G	8	6	0	3

Note: (a) National averages are based on 1992/93 figures.

From Table 2 it can be seen that the Parkfield students had performed less well in GCSE Maths and English compared to the overall national average. Grades D and E in mathematics are over-represented in the Parkfield sample, as are grades C and D in English. There may be a number of reasons for this: the existence of more 'academically-orientated' sixth form colleges in the locality perhaps explains why Parkfield did not attract larger proportions of high grade achievers. The difference between this sample's GCSE grades and the national average was very much greater for maths than for English.

Table 3 shows, by level and type of course, the mean GCSE Maths and English grades of the Parkfield students: note that the grades are

scaled from A=1 to G=7, so that a high points score means a low average GCSE grade.⁸

TABLE 3

**Mean Mathematics and English GCSE Grades
of First Year Parkfield Students, by Type of Course
(Grades are Scaled from A=1 To G=7)**

COURSE FOR WHICH ENROLLED	GCSE MATHEMATICS AVERAGE (N=107)	GCSE ENGLISH AVERAGE (N=112)
GNVQ Foundation	F-G (6.5)	F (6.0)
GNVQ Intermediate	E-F (5.3)	D (4.1)
GNVQ Advanced	D-E (4.4)	C-D (3.1)
NVQ2	F (6.1)	D-E (4.5)
NVQ3	D-E (4.4)	B-C (2.4)
GCSE	D-E (4.5)	C-D (3.4)
A-Level (2 Years)	D (3.7)	B-C (2.5)
A-Level (1 Year)	B (2.0)	B-C (2.6)

As might be expected, higher GCSE grades are associated with higher level courses (GNVQ Advanced and A levels). GNVQ Intermediate recruits from GCSE grades at the next level below GNVQ Advanced and only a little below the DfEE recommendation of D/E GCSE. But because the maths GCSE grades of the Parkfield sample were considerably below the national average even the A level students were below the normal admission criteria of a GCSE ‘C’ grade.

⁸ GCSE grades have been scored in this way throughout this paper, except where adjustments have been made so that GCSE outcomes can be compared with GNVQ/NVQ outcomes — see Table 6 and page 40.

2.3 Entry Data: ALBSU Test Scores

In September 1994 the college administered the ALBSU literacy and numeracy tests to all its first year students in order to identify those in need of additional support with their chosen course. It was agreed with the Parkfield staff that an initial analysis would be carried out of the relationships between scores on the ALBSU literacy and numeracy tests and GCSE grades in mathematics and English previously obtained by these students. In other words the 'entry data' of these students would be examined to see if there was a positive correlation between the two types of assessment.

The ALBSU tests were developed and standardised by the Adult Literacy and Basic Skills Unit, now the Basic Skills Agency, a non-statutory organisation with funding from the DfEE. The tests were specifically designed to allow colleges to identify students who would require additional help to reach the numeracy and communication requirements of the GNVQ and NVQ qualifications. One notable feature of the ALBSU tests is that, unlike the GCSE examinations, students are not permitted the use of a calculator. Each of the tests is in two parts and the student is allowed a total of 20 minutes to complete both parts of both tests. The marking and scoring of the tests are carried out by college staff according to a standard schedule. Because the tests aim to identify students likely to require additional help, they distinguish only three categories of students, and of these three, two distinguish students likely to require varying amounts of help to reach GNVQ Foundation or Intermediate level. The remaining category, category 3 in the ALBSU classification, contains all those students who are judged on the tests not to require help to obtain GNVQ Intermediate or above. The first part of each test is a simple test of passive understanding of vocabulary and syntax (variable READA in our classification) or a very basic test of arithmetic (NUMA). Students took this part of each test before passing on to the second, more substantial, part (READB and NUMB).

Using the mark scheme and guidelines supplied by ALBSU, students were allocated by the college to one of three categories constructed by ALBSU. These categories were:

- (1) **below level 1** — needing help to achieve NVQ level 1 Maths or Communication;
- (2) **at level 1** — needing help to achieve NVQ level 2;
- (3) **above level 1** — should normally be able to achieve NVQ level 2 without help.

Since all the students were tested on both parts, it was possible to assess the extent to which the two tests gave similar predictions of students' requirements for additional help. The degree of reliability of the NUMA test was very high in relation to NUMB. All of the 13 students who were identified as weak by the NUMA test were assigned to the weakest category by the NUMB test. The READA test also performed in a way consistent with the READB test, although the results were not quite as consistent as with NUMA and NUMB.

2.4 Relationships Between GCSE Grades and ALBSU Test Results

Tables 4 and 5 below show numbers of students at each ALBSU level by GCSE score previously obtained. ALBSU scores in the numeracy test (NUMB) are sorted by GCSE Mathematics grade (Table 4) and ALBSU scores in the reading test (READB) are sorted by GCSE English grade (Table 5).

TABLE 4**Scores of Parkfield Students on ALBSU NUMB Test
Sorted by GCSE Maths Grade Obtained**

GCSE GRADE	ALBSU TEST SCORE (a)			TOTAL (N=100)
	1	2	3	
A	0	0	2	2
B	0	1	5	6
C	0	6	8	14
D	3	12	10	25
E	3	16	8	27
F	8	4	5	17
G	8	1	0	9
TOTAL	22	40	38	100

Note: (a) 1 = Help needed for GNVQ Foundation; 2 = Help needed for GNVQ Intermediate; 3 = No help needed for GNVQ Intermediate.

[Pearson chi2 (12) = 49.0590, Pr = 0.000]

In the cross-tabulation of GCSE Mathematics grades and ALBSU numeracy test scores ('NUMB' variable) shown in Table 4 a positive relationship is evident. The high value of the Pearson chi2 (49.059, Pr = 0.000) indicates that a significant and positive association exists between these two indicators. It can also be seen from Table 4 that GCSE Maths grades at the extreme points of the range — A, B and G — gave a reliable prediction of the outcome on the ALBSU test: all with grade A and all but one with grade B scored a 3 (above level 1) and all but one of those with a G grade scored a 1 (below level 1). The analysis shows that at the lower GCSE Mathematics grades it is more likely that there will be more individuals in the lower ALBSU categories than in the higher categories. What is clear however, is that

GCSE results do not attest to any sort of ‘threshold attainment level’ in simple arithmetic manipulation without a calculator. Nearly half of those with grade C were judged to have deficiencies in simple arithmetic without a calculator but a third of those who had gained only a grade E or F were judged as competent.

TABLE 5

**Scores of Parkfield Students on ALBSU READB Test
Sorted by GCSE English Grade Obtained**

GCSE GRADE	ALBSU TEST SCORE (a)			TOTAL (N=106)
	1	2	3	
A	0	0	7	7
B	1	1	10	12
C	6	5	29	40
D	3	4	19	26
E	3	4	8	15
F	3	1	2	6
G	0	0	0	0
TOTAL	16	15	75	106

Note: (a) 1 = Help needed for GNVQ Foundation; 2 = Help needed for GNVQ Intermediate; 3 = No help needed for GNVQ Intermediate
[Pearson chi² (10) = 12.7727, Pr = 0.237]

Table 5 shows that there was a weaker relationship between performance at the ALBSU literacy test and GCSE English grades. In English as in maths, both grades A and B predicted outcomes on the ALBSU test satisfactorily but at grade C around one quarter were at or below level 2. The proportions were not very different at grade D, and at grade E approximately half were above level 2 and half at level 2 or

below. Below grade B, English GCSE scores gave a poor prediction of success on the ALBSU literacy test, and prediction from GCSE Maths was particularly poor at grades D, E and F.

First year students at Parkfield were tested with diagnosis of learning difficulties in mind rather than initial selection onto courses. For that reason, the ALBSU tests were carried out once the students had been accepted onto a course. Initial selection and guidance onto college courses had been made primarily on the basis of GCSE grades. The implication of Tables 4 and 5 is that this initial selection procedure had not been very reliable in identifying students who had the requisite prior attainments for the type of course on which they had enrolled. Though it must be acknowledged that the numbers of students in the cells of these tables are rather small, it seems that GCSE grades, particularly those towards the bottom of the range, are not likely to help predict students' performance on ALBSU tests. This, in turn, depending upon course outcomes, may mean that the GCSE grades are also not very good predictors of basic numeracy and literacy performance on FE courses.

A concern of the initial phase of the research was to examine the reliability of GCSE grades in maths and English as indicators of basic literacy and numeracy as defined by the Basic Skills Agency. The analysis set out above suggests that GCSE grades were not reliable indicators of basic numeracy and literacy at the mid-grade (C/D/E) point. In the second phase of our research, data were gathered from the sample based on results/outcomes available after one year. In the case of those studying on one year courses this made it possible to see whether the GCSE grades or the ALBSU tests *in fact* proved to be reliable predictors of course outcomes.

3. OUTCOMES AFTER ONE YEAR (1995)

3.1 The Main Sample After One Year

For the interim phase of the research data were collected on student course outcomes one year after the start of the study. At Parkfield College all full-time GNVQ Foundation and Intermediate courses and the great majority of NVQ level 1 and 2 courses were of one year's duration. GNVQ Advanced courses were 2 years in length, GCSE courses would take 1 year full-time and A levels could be taken over either 1 year or (more commonly) 2 years. Lack of information on the 9 one-year A level students led to this group being dropped, reducing the main sample from 142 to 133.⁹ Of these 133 students, 80 were on one-year courses. Outcomes from the sample after one year are as shown in Table 6 below.

⁹ There were a number of problems with the collection of data for the one-year A level students. It was difficult for the college tutors to keep track of what these students were doing and it would appear that these were 're-take' students and most had left, before re-taking their exams, either to start employment or to enrol on post-16 courses elsewhere, though we did not have definite information on this.

TABLE 6**Interim Results from the Parkfield College Sample
— One-Year Courses only (N = 80) 1995 (a)**

Result/Outcome (b)	Number	Percentage
Distinction	4	5
Merit	14	18
Pass	13	16
Incomplete	18	23
Failed	6	8
Left	25	31
Totals	80	100

Notes: (a) The outcomes are for one-year courses only — this *includes* GNVQ Foundation and Intermediate, NVQ level 1 and 2 and GCSE courses and *excludes* GNVQ Advanced, NVQ level 3 and two-year A level courses.

(b) GNVQ and NVQ courses use the Distinction/Merit/Pass classification. GCSE outcomes were matched to these categories based upon a (rounded-up) average GCSE grade: grade A is equated with a Distinction, grade B with a Merit award, and grades C to F are deemed equivalent to a Pass. Grade G and ungraded are classified as 'Fail'.

These results were collected in October 1995, with a further sweep just before Christmas. Student outcomes were categorised as 'Distinction', 'Merit', 'Pass', 'Fail', 'Incomplete' (when *either* students had passed *some* of their course modules, but had not completed all the requirements of the course, *or* when college staff, for one reason or another, were unable to pass on any information about the student's progress), or 'left' (where we had definite information that the student had left the course). After one year 25 students from

the (one-year) sample of 80 had left the college¹⁰, there was complete information on course results for 37 students and incomplete information for 18 (these latter may have been taking more than one year to complete their course of study).

3.2 The Intermediate Sub-Sample After One Year

Table 7 summarises the outcomes for the ‘Intermediate’ sub-sample of 46 GNVQ2/NVQ2 students for whom we had one year outcomes and compares these outcomes with the national picture for the same year. In this table student outcomes are categorised as ‘Pass or better’ (ie all with Distinction, Merit or Pass mark), ‘Incomplete’ (when students had passed at least one module or the college had not been able to provide any information) or ‘Left’: no ‘Fails’ were recorded at this stage.

TABLE 7

Summary of 1995 Outcomes for NVQ2 and GNVQ Intermediate Students at Parkfield College (percentages, N=46)

	Pass or better	Incomplete	Left
PARKFIELD	33 (n = 15)	39 (n = 18)	28 (n = 13)
NATIONAL AVERAGE (a)	36	44	20

Note: (a) The national average pass rates quoted here are for GNVQ Intermediate only. Our Parkfield sample includes 15 students on NVQ level 2 courses. Without these students our sub-sample of (G)NVQ2 students would be too small for reliability purposes. The pass rate of the Parkfield NVQ2 students was, in fact, lower than that of the GNVQ

¹⁰ This drop-out rate of 29% is higher than the estimated national average drop-out rate of around 20% (May 1994) for Intermediate GNVQ courses (Further Education Unit/Institute of Education/Nuffield Foundation, *GNVQs 1993-94: A National Survey Report*, 1994, p.18).

students so that without them, the Parkfield GNVQ Intermediate results would have been better.

Source: Own calculations and FEFC, *GNVQs in the FE Sector in England*, November 1995, para.63.

The next step was to cross-tabulate these outcomes with GCSE English and Maths grades obtained (Tables 8 and 9) in order to observe the probability of the relationship between outcomes and GCSE grade occurring by chance. However, it should be noted that GCSE English grades were missing for 9 of the students for whom we had GNVQ outcomes and for maths 15 results were missing.

TABLE 8

Cross Tabulations of GCSE English Grades and NVQ2/GNVQ Intermediate Outcomes after One Year (1995)
(*Percentages, N=37*)

English grade	Pass or better (a)	Incomplete (b)	Left before end of course	Totals	
				Percentage	Number
C or above	(n=3) 43	(n=3) 43	(n=1) 14	100	7
D	(n=7) 44	(n=5) 31	(n=4) 25	100	16
E	(n=0) 0	(n=6) 60	(n=4) 40	100	10
F	(n=2) 50	(n=2) 50	(n=0) 0	100	4
TOTAL	(n=12) 32	(n=16) 43	(n=9) 24	100	37

Notes: (a) This column includes all those students who had recorded a distinction, merit or pass by 1995, along with those who have been

accredited with more than half the modules necessary for course completion.

(b) This column includes all those students who had achieved less than half the modules necessary for course completion along with those for whom we had no information.

[Pearson chi2 (6) = 7.9905, Pr = 0.239]

TABLE 9

**Cross Tabulations of GCSE Maths Grades and
NVQ2/GNVQ Intermediate Outcomes after One Year (1995)
(Percentages, N=31)**

Maths grade	Pass or better (a)	Incomplete (b)	Left	Totals	
				Percentage	Number
D	(n=2) 50	(n=0) 0	(n=2) 50	100	4
E	(n=4) 33	(n=5) 42	(n=3) 25	100	12
F	(n=4) 44	(n=4) 44	(n=1) 11	100	9
Ungraded	(n=0) 0	(n=4) 67	(n=2) 33	100	6
TOTAL	(n=10) 32	(n=13) 42	(n=8) 26	100	31

Notes: (a) This column includes all those students who had recorded a distinction, merit or pass by 1995, along with those who have been accredited with more than half the modules necessary for course completion.

(b) This column includes all those students who had achieved less than half the modules necessary for course completion along with those for whom we had no information.

[Pearson chi2 (6) = 7.1058, Pr = 0.311]

No statistically significant relationship shows up between GCSE grades in English and GNVQ/NVQ outcome or between maths and GNVQ/NVQ outcome. Since GCSE English grades and ALBSU marks had shown little relationship, the result of Table 8, showing a weak relationship with outcomes, is not surprising. However, the relationship between GCSE Maths and the ALBSU test results had shown greater consistency and the results of Table 9, showing an even weaker relationship than with English, are somewhat surprising. Bearing in mind the caveat on sample size we conclude there is no evidence that the level of prior GCSE attainment is positively associated with (G)NVQ outcome.

Cross-tabulations were carried out with course outcome and the ALBSU test results (READA, READB, NUMA and NUMB variables). ALBSU READB results were available for all the sample for whom we had course outcomes and a statistically significant relationship was found (Pr = 0.005) between READB and outcome (see Table 10 below).

TABLE 10

Cross Tabulations of ALBSU Literacy (READB) Scores and NVQ2/GNVQ Intermediate Outcomes after One Year (1995)
(Percentages, N=46)

ALBSU Literacy (READB) score (a)	Pass or better (b)	Incomplete (c)	Left before end of course	Totals Percentage	No.
1	(n=1) 20	(n=4) 80	(n=0) 0	100	5
2	(n=6) 86	(n=1) 14	(n=0) 0	100	7
3	(n=8) 24	(n=13) 38	(n=13) 38	100	34

TOTALS	(n=15) 33	(n=18) 39	(n=13) 28	100	46
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Notes: (a) ALBSU Scores: 1 = Help needed at GNVQ Foundation level; 2 = Help needed at GNVQ Intermediate level; 3 = No help needed for GNVQ Intermediate.

(b) This column includes all those students who had recorded a distinction, merit or pass by 1995, along with those who have been accredited with more than half the modules necessary for course completion.

(c) This column includes all those students who had achieved less than half the modules necessary for course completion along with those for whom we had no information.

[Pearson chi2 (4) = 14.9910, Pr = 0.005]

Although the probability of this distribution occurring by chance is extremely low the high value of the Pearson chi 2 is derived in large part from the leavers category and therefore cannot be taken as indicating unambiguously that the relationship between READB levels and course outcomes is statistically significant. However, Table 10 shows that an ALBSU score at level 1 appears to offer little chance of success, although it should be noted that numbers in these cells are very low. At level 3 more students leave than pass, making it difficult to arrive at a judgement about the predictive value of the ALBSU READB variable. No statistically significant relationship was found between NUMB and course outcome (Table 11) and, as for READB, the leavers confuse the picture. However, for NUMB it can be seen that passes increase and 'failures' (as represented at this stage by the 'incomplete' category) decrease as NUMB rises.

TABLE 11

**Cross Tabulations of ALBSU Numeracy (NUMB) Scores and
NVQ2/GNVQ Intermediate Outcomes after One Year (1995)
(Percentages, N=45)**

ALBSU Numeracy (NUMB) score (a)	Pass or better (b)	Incomplete (c)	Left before end of course	Totals Percentage No.	
1	(n=5) 29	(n=8) 47	(n=4) 24	100	17
2	(n=5) 36	(n=6) 43	(n=3) 21	100	14
3	(n=5) 36	(n=3) 21	(n=6) 43	100	14
TOTALS	(n=15) 33	(n=17) 38	(n=13) 29	100	45

Notes: (a) ALBSU Scores: 1 = Help needed at GNVQ Foundation level; 2 = Help needed at GNVQ Intermediate level; 3 = No help needed for GNVQ Intermediate.

(b) This column includes all those students who had recorded a distinction, merit or pass by 1995, along with those who have been accredited with more than half the modules necessary for course completion.

(c) This column includes all those students who had achieved less than half the modules necessary for course completion along with those for whom we had no information.

[Pearson chi2 (4) = 2.9841, Pr = 0.560]

4. INFORMATION OBTAINED AFTER TWO YEARS (1996)

Researchers returned to Parkfield College in the Autumn of 1996, two years after the start of the study, to collect more information on student outcomes, both for the whole sample and for the 'Intermediate' sub-sample. The new information collected included the following:

*any updated information on outcomes, including NVQ/GNVQ/GCSE/A level results;

*information on which students in our sample had received 'additional support' — this usually (but not always) meant one hour a week ESOL tuition.

It should be stressed that although this information was collected two years after the start of this study this does not necessarily mean that these students took two years to complete their courses. Sometimes students on one-year programmes were granted an extension to complete their course requirements. Many of these students will have completed their studies within 15-18 months of the commencement of their course but the information on their results had not been registered by the college when we made our previous sweep.

New or updated results were obtained for 48 students in the main sample of 133. Of these 133 there was 'no information' on outcomes for 3 students, leaving 130 for whom there were final course outcomes. The next stage was to consider how this new information contributed to our investigation of the use of GCSE grades as a prediction/selection mechanism for NVQ/GNVQ courses, especially in relation to the 'intermediate' sub-sample.

Table 12 below compares overall outcomes across the different course types, though it must be stressed that numbers are small.

TABLE 12**Summary of Outcomes by Different Types of Group
after Two Years (1996) (Percentages) (N=130)**

	Pass or better (a)	Fail (b)	Left before end of course
GNVQ Foundation (N = 3)	(n=2) 67	(n=0) 0	(n=1) 33
Intermediate (NVQ 2/ GNVQ-Int) (N = 46)	(n=24) 52	(n=9) 20	(n=13) 28
GNVQ Advanced (N = 21)	(n=12) 57	(n=7) 33	(n=2) 10
NVQ 3 (N = 5)	(n=1) 20	(n=3) 60	(n=1) 20
A Level (N = 27)	(n=10) 37	(n=5) 19	(n=12) 44
GCSE (N = 28)	(n=15) 54	(n=4) 14	(n=9) 32
Whole sample (N = 130)	(n=64) 49	(n=28) 22	(n=38) 29

Notes: (a) This column includes all those students who had recorded a distinction, merit or pass by 1996, along with those who have been accredited with more than half the modules necessary for course completion.

(b) This column includes all those students recorded as 'fail' along with those recorded as 'incomplete' since by this time (2 years after the start of a one-year course) a successful outcome is unlikely.

It can be seen from Table 12 that, in terms of 'pass rates', the 'Intermediate' students did better than the (2-Year) A level students, but not as well as the GNVQ Advanced group. For the GNVQ Advanced group (N = 21) drop-out rates were considerably lower than

for either the Intermediate or the A level group. In fact the difference between the A level drop-out rate (at 44%) and that for the GNVQ Advanced course (10%) was quite considerable.

5. THE 'INTERMEDIATE' SAMPLE TWO YEARS AFTER ENROLMENT

This section looks closely at the 'exit data' for the 'Intermediate' subsample on one year (G)NVQ courses in 1996, two years after the start of the study: it uses new information to examine the more complete set of course outcomes for the sample of 46 students on NVQ level 2 and GNVQ Intermediate courses, taking into account those who had taken more than one year to complete their course. A summary of these newly-revised final outcomes, as compared with the outcomes after one year, is presented in Table 13 below.

TABLE 13

**Summary of Final Outcomes, After Two Years (1996),
for NVQ2 and GNVQ Intermediate Students
at Parkfield College (percentages) (N=46)**

	Pass or better	Incomplete or fail	Left before end of course
PARKFIELD — Results after 1 yr	33 (n = 15)	Incomplete (b) 39 (n = 18)	28 (n = 13)
PARKFIELD — Results after 2 yrs	52 (n = 24) (a)	Fail (c) 20 (n = 9)	28 (n = 13)

Notes: (a) This cell includes all those students who had recorded a distinction, merit or pass by 1996, along with those NVQ students who have been accredited with more than half the modules necessary for course completion (n = 2).

(b) This cell includes all those students who had achieved less than half the modules necessary for course completion along with those for whom we had no information.

(c) This cell includes all those students recorded as ‘fail’ (in 1996) along with those recorded as ‘incomplete’ and with less than half the modules necessary for course completion.

It is evident from Table 13 that the proportion of students in the ‘pass or better’ category has increased, whilst the proportion in the ‘incomplete or fail’ category has declined from nearly 40% of the sample to 20%. Nine students moved from the ‘incomplete’ category to the ‘pass or better and part-achievement’ category. The proportion of the original enrolment that obtained a pass increased from one-third to just over one-half. The following sections re-examine, for this sub-sample, the relationships between course outcome and GCSE English grades, GCSE Maths grades, and ALBSU scores in literacy and numeracy.

5.1 GCSE English and Maths Grades

It will be remembered that in the intermediate phase of the research (1995), one year after the start date, GCSE English and Maths grades did not show a statistically significant relationship with course outcomes. Table 14 presents information on the relationship between GCSE English grade and course outcome and Table 15 shows GCSE Maths grades and course outcome using the updated information on the ‘Intermediate’ sub-sample of students.

TABLE 14

**Cross Tabulations of GCSE English Grades and NVQ2/GNVQ
Intermediate Final Course Outcomes after Two Years (1996)
(Percentages, N=37)**

English grade	Pass or better (a)	Fail (b)	Left before end of course	Totals	
				Percentage	Number
C or above	(n=4) 57	(n=2) 29	(n=1) 14	100	7
D	(n=11) 69	(n=1) 6	(n=4) 25	101	16
E	(n=2) 20	(n=4) 40	(n=4) 40	100	10
F	(n=3) 75	(n=1) 25	(n=0) 0	100	4
TOTAL	(n=20) 54	(n=8) 22	(n=9) 24	100	37

Notes: (a) This column includes all those students who had recorded a distinction, merit or pass by 1996, along with those who have been accredited with more than half the modules necessary for course completion.

(b) This column includes all those students recorded as 'fail' along with those recorded as 'incomplete' since by this time (2 years after the start of a one-year course) a successful outcome is unlikely.

[Pearson chi2 (6) = 8.8861, Pr = 0.180]

TABLE 15

**Cross Tabulations of GCSE Maths Grades and NVQ2/GNVQ Intermediate Final Course Outcomes after Two Years (1996)
(Percentages, N=31)**

Maths grade	Pass or better (a)	Fail (b)	Left before end of course	Totals	
				Percentage	Number
D	(n=2) 50	(n=0) 0	(n=2) 50	100	4
E	(n=6) 50	(n=3) 25	(n=3) 25	100	12
F	(n=6) 67	(n=2) 22	(n=1) 11	100	9
Ungraded	(n=2) 33	(n=2) 33	(n=2) 33	100	6
TOTAL	(n=16) 52	(n=7) 23	(n=8) 26	100	31

Notes: (a) This column includes all those students who had recorded a distinction, merit or pass by 1996, along with those who have been accredited with more than half the modules necessary for course completion.

(b) This column includes all those students recorded as 'fail' along with those recorded as 'incomplete' since by this time (2 years after the start of a one-year course) a successful outcome is unlikely.

[Pearson chi2 (6) = 3.8289, Pr = 0.700]

The relationship in both these tables is still not significant and for Mathematics has been further weakened by movement into the (G)NVQ 'pass' category of students with GCSE grades at E and F, as described in more detail below.

5.2 ALBSU Scores

In the interim phase we had also looked at ALBSU scores in literacy and numeracy as possible predictors of course outcomes. This section briefly re-examines these relationships making use of the new data collected for the intermediate sub-sample (Tables 16 and 17).

TABLE 16

Cross Tabulations of ALBSU Literacy (READB) Scores and NVQ2/GNVQ Intermediate Final Course Outcomes after Two Years (1996) (Percentages, N=46)

ALBSU Literacy (READB) score (a)	Pass or better (b)	Fail (c)	Left before end of course	Totals Percentage	Totals Number
1	(n=2) 40	(n=3) 60	(n=0) 0	100	5
2	(n=6) 86	(n=1) 14	(n=0) 0	100	7
3	(n=16) 47	(n=5) 15	(n=13) 38	100	34
TOTALS	(n=24) 52	(n=9) 20	(n=13) 28	100	46

Notes: (a) 1 = Help needed for GNVQ Foundation; 2 = Help needed for GNVQ Intermediate; 3 = No help needed for GNVQ Intermediate.

(b) This column includes all those students who had recorded a distinction, merit or pass by 1996, along with those who have been accredited with more than half the modules necessary for course completion.

(c) This column includes all those students recorded as 'fail' along with those recorded as 'incomplete' since by this time (2 years after the start of a one-year course) a successful outcome is unlikely.

[Pearson chi2 (4) = 11.0984, Pr = 0.025]

TABLE 17

Cross Tabulations of ALBSU Numeracy (NUMB) Scores and NVQ2/GNVQ Intermediate Final Course Outcomes after Two years (1996) (Percentages, N=45)

ALBSU Numeracy (NUMB) score (a)	Pass or better (b)	Fail (c)	Left before end of course	Totals Percentage	Totals Number
1	(n=9) 53	(n=4) 24	(n=4) 24	100	17
2	(n=8) 57	(n=3) 21	(n=3) 21	100	14
3	(n=7) 50	(n=1) 7	(n=6) 43	100	14
TOTALS	(n=24) 53	(n=8) 18	(n=13) 29	100	45

Notes: (a) 1 = Help needed for GNVQ Foundation; 2 = Help needed for GNVQ Intermediate; 3 = No help needed for GNVQ Intermediate.

(b) This column includes all those students who had recorded a distinction, merit or pass by 1996, along with those who have been accredited with more than half the modules necessary for course completion.

(c) This column includes all those students recorded as 'fail' along with those recorded as 'incomplete' since by this time (2 years after the start of a one-year course) a successful outcome is unlikely.

[Pearson chi2 (4) = 2.7640, Pr = 0.598]

Once again the relationship between ALBSU test scores and outcomes was distorted by the large leavers category (see Section 3.2) so that the statistically significant READB result should not be accorded too much importance. The relationship between GCSE grades and outcomes is still weak.

5.3 Comparing Outcomes After One and Two Years

At the end of one year in college only one third of the Intermediate GNVQ sample had obtained their qualification in the time specified for the course duration (one year). As indicated above, further data collection was carried out in the course of the following year and the situation two years after the start of the study was that just over half the sample had passed and one fifth had failed (Table 13).

This further follow-up made it possible to analyse and compare the prior attainments and outcomes of three groups, one year certificated (one year pass group), more than one year certificated (two year pass group) and failed (Table 18).

TABLE 18

Comparison of Average GCSE Grade Scores, ALBSU Scores and NVQ2/GNVQ Intermediate Final Course Outcomes after One Year (1995) and Two Years (1996)

	GCSE English average grade (a)	GCSE Maths average grade (a)	ALBSU NUMB average score (b)	ALBSU READB average score (b)
Pass Yr 1	4	5.36	2	2.5
Pass Yr 2	4.33	5.8	1.71	2.71
Fail	4.44	5.86	1.67	2.3

Notes: (a) GCSE score A=1, B=2 etc. (b) ALBSU scores 3 highest, 1 lowest.

For each group we calculated and compared average GCSE English and Mathematics grade scores and average scores on the ALBSU tests. The one year pass group had scores which were slightly higher on all but one of the measures used than either the two year pass or the failed group. The exception was the READB measure on which the two year pass group scored slightly higher than the one year

group. But there were no differences worthy of mention between the GCSE scores of the two year pass group and the fail group. The only difference of any size between the two year pass group and the failed group was in the READB measure on which the failed group score was lower. It should be noted that because of the small size of these groups these differences cannot be tested for statistical significance. However, these findings strengthened our impression that ALBSU scores, particularly the READB measure, can constitute a more helpful prior indicator of GNVQ performance than GCSE grades. The two year pass group appears to be little different from the failed group in terms of prior attainment except, marginally, in respect of the READB indicator. These results indicate that commitment to the course and persistence on the part of the student can overcome the perceived handicap of poor prior GCSE attainments on GNVQ courses.

5.4 Interpreting the Results

5.4.1 Predicting Outcomes From Prior Attainment

Other than the Ofsted/Audit Commission research mentioned in Section 1.4, there have been very few studies of the relationship between prior attainment and intermediate vocational course outcomes. For example, even the *National Survey Report on GNVQs 1993-97*, compiled by Wolf and her colleagues, does not include such an analysis (though it does evaluate the ‘success’ of such courses in relation to national objectives). Nor does there appear to have been any systematic work on the relationship between ALBSU literacy and numeracy scores and course outcomes. This seems rather surprising given the current stress on ‘key skills’ and ‘standards’ in numeracy and literacy.

In the present study no evidence was found of the predictive value of GCSE grades in relation to course outcomes either at the level of the sample as a whole (excluding leavers) or in relation to the Intermediate

GNVQ group.¹¹ The ALBSU READB scores, in particular the lowest of the three categories, proved more accurate than GCSE grades in predicting those who would fail to complete the course.

5.4.2 Leavers

Leavers (defined as those who left before the end of their course) accounted for just under 30% of our total sample (Table 12). The two year A level course recorded the highest proportion of leavers while the GCSE and Intermediate GNVQ groups were both close to the average of around one-third. Retention on the GNVQ Advanced course was well above average. The analysis here will focus on the GNVQ Intermediate group.

Early drop-out is costly and represents a failure to bring a young person to the level which is increasingly regarded as the minimum necessary for full labour market participation. It is therefore vital to try to understand better the reasons for drop-out. Parkfield College did not monitor the destinations of students who left their course early but some information can be derived from the data about the leavers in the sample. On the READB test, all of those who left scored a 3 (the highest score) indicating that they were of a standard likely to succeed on GNVQ Intermediate or a higher course. In fact the lower the student's READB score the less likely it is that a student in our sample will leave. Furthermore, of the 13 leavers four left before the GCSE scores were collected in the November of their first term. These four students all scored at the highest level on the READB and NUMB tests and it seems likely that they left for a more suitable course. The remaining nine left later in the year.

¹¹ Using the whole sample, but excluding leavers, an ordered probit regression was carried out with "results" (course outcomes) as the dependent variable. This was to test whether a high combined Maths and English GCSE score was systematically associated with a good outcome in the qualification aimed for. No significant relationship was found.

Research quoted in Section 1 suggests that many left to take up other opportunities of work and training. The analysis from this study shows that those who left GNVQ Intermediate or NVQ2 courses before completion had ‘average’ GCSE grades: in other words, they were not ‘high fliers’, nor were they ‘low achievers’ in the context of these particular courses.¹² This is also true of the 38 leavers from our full sample of 142 and in this respect there is a discrepancy between the findings of the 1993 Ofsted/Audit Commission study discussed in Section 1.4 and the findings of this study.¹³ This study finds no evidence of an association between prior attainment as measured in GCSE English and Maths grades and likelihood of leaving the college before the end of the course. Since the leaver group’s prior attainments were not noticeably different from the Intermediate GNVQ group average it seems unlikely that they left because course demands were too rigorous, ie because of a ‘push’ from the college. It seems more likely that they left because of a ‘pull’ from the labour market at a time when the economy in London and the South-East was showing signs of recovery.

5.5 Additional Support

Information was collected from the ‘Foundation Learning’ department of the college about ‘additional support’ received by the students. Such ‘regular scheduled support’ was well documented, partly because it attracted extra funding for the college, though it should be stressed that the ALBSU test results were not used to determine whether or not

¹² The average GCSE English grade for our sample of 46 Intermediate students was 4.2 (around a grade D) and for the *leavers* of this sample, 4.3. The average GCSE Maths grade for the Intermediate sample was 5.5 (between E and F) and for the *leavers* group, 5.4.

¹³ Although the Ofsted/Audit Commission research was based on a national study, the sample of vocational students consisted of only 187 individuals and this is clearly an area where further research would be useful.

support was offered: this depended upon a number of factors including resources available and the student's desire for support of this type. Support was offered to a large number of students who failed to take up the offer. The support, where it was accepted, usually consisted of between 30 minutes and one hour of extra tuition per week in English as a second language, though there were also sessions on study skills and number skills.

In the Parkfield sample as a whole, 13 students received some additional support. Of the Intermediate (G)NVQ sample of 46 individuals it was evident that, using the ALBSU test definition, up to 7 individuals needed help at this (intermediate) level with the development of literacy skills and up to 14 needed help with numeracy skills: this finding is consistent with the differences between GCSE English and Maths grades for this sample. In practice 3 students received official 'additional support' according to the college records: these 3 were all students who had scored a 1 (help needed at Foundation level) or a 2 (help needed at Intermediate level) on the 'NUMB' test and 2 of these individuals also scored a 1 on the 'READB' test. All of these students had an 'incomplete' outcome and were therefore categorised as 'fail' in our tables showing outcomes after two years.

6. COMPARING GROUPS

Although the group sub-samples were fairly small it was felt that it might be useful to compare different groups, based upon type of course followed. In particular, it was of interest to see whether GCSE English and Maths grades were any better in terms of predicting outcomes for the GNVQ Advanced and A level sub-samples than they were for the 'Intermediate' sub-sample. In these comparisons a 'pass' at A level is equated with a grade E or above in this examination and a 'pass' at GCSE is equated with a grade G or above. Cross-tabulations (not shown here) based upon the three-fold classification used above ('pass

or better', 'failed' and 'left'), were produced for the GNVQ Advanced group and for the A level and GCSE sub-samples.

In terms of the **GNVQ Advanced** sub-sample the results were much as one would expect. These students have embarked upon their GNVQ course with better GCSE English and Maths grades than their 'Intermediate' counterparts and have left college with higher outcomes (see Table 12). Neither GCSE grade, however, has a statistically significant relationship with course outcome. Cross-tabulations were also completed for the two main ALBSU test results and course outcome and, again, no statistically significant relationships were found.

The students in the **A level** sub-sample also embarked upon their courses with better GCSE grades than the 'Intermediate' sub-sample: their outcomes, however, did not appear to be as positive as those of the GNVQ Advanced students, with a smaller proportion of students achieving 'pass or better' (37% compared to 57%) and a greater proportion leaving (44% compared to 10%). No statistically significant relationships were revealed in either the GCSE grade/course outcome or the ALBSU test score/course outcome cross-tabulations. This latter comment is also true of these cross-tabulations made with respect to the **GCSE** sub-sample.

A final comment in relation to the GCSE sub-sample is in order here, however. In Table 12, success on GCSE was defined rather generously as one GCSE pass at Grade G or better. Even so, only just over half achieved this outcome, a similar pass rate to that achieved on the GNVQ Intermediate course. Many colleges now advise students to enrol on GNVQ Intermediate in preference to GCSE resits since it is considered to offer a better chance of achieving a level equivalent to NVQ2. In the Parkfield sample, of those who took GCSE resits as their only qualification objective, only one-quarter obtained a Grade C or better or an NVQ level 2 equivalent. So for the students in this sample GNVQ/NVQ courses offered a significantly greater chance of reaching NVQ Level 2 than did GCSE resits.

7. CONCLUSIONS

This study has examined the extent to which outcomes of Intermediate vocational courses are predicted by prior attainments in basic mathematics and English. It was thought that the introduction of mandatory core skills units including application of number and communication into GNVQ courses would produce a stronger relationship between prior attainments and GNVQ outcomes than had been the case for the more traditional vocational qualifications. The first and most widely available indicators of prior mathematics and English attainment are GCSE English and Mathematics results, which young people acquire prior to entry to full-time intermediate vocational courses. However, in the college on which this study is based a second indicator was also available, namely tests of basic literacy and numeracy devised by the Adult Literacy and Basic Skills Unit (ALBSU — now the Basic Skills Agency).

When GCSE maths and English scores were cross-tabulated against ALBSU test scores for a randomly-drawn sample of students in the college, GCSE ‘middle’ grades (grades D, E, F) showed no consistent relationship with the ALBSU categories, suggesting that at these grades GCSE is not a reliable indicator of basic literacy or numeracy as measured by the ALBSU test. As might have been expected, given this result, no clear relationship emerged between GCSE grades and GNVQ Intermediate course outcomes both one and two years after the commencement of the course. An average combined GCSE English and Maths grade score also failed to show any relationship with course outcomes. The ALBSU READB (literacy) score gave a somewhat more consistent relationship, particularly at the lowest level, but the relationship was still not strong.

The present research was conducted with small samples in one college site and it would not be appropriate to generalise widely from these findings. Wider replication of the study, over a number of sites or making use of a national database, is desirable. In conclusion, however, it must be said that the relationship found in our study

between prior attainment indicators and course outcome is fairly weak, even in the case of the READB indicator which performs best of those used. The Parkfield study suggests that the college is right to try to collect a range of information on individual student performance rather than rely upon GCSE grades alone when advising students on course choice. The ALBSU tests might need to be further refined but appear to identify fairly reliably those likely to have most difficulty with Intermediate GNVQ courses. Further thought also needs to be given to any move to measure a college value-added dimension using GCSE grades as a baseline measure. This study suggests that value-added measured in this way would not prove to yield useful information on performance.

The fact that course outcomes were not closely determined by prior attainment as measured by GCSE points to the importance of factors intrinsic to the individual student — motivation, commitment, home support and probably also the extent to which the college provides a caring and supportive environment, as the factors promoting persistence and success. Another reason for the lack of fit could be the very different approach to teaching and learning adopted on many GNVQ courses compared to the more strictly academic GCSE. These conclusions constitute perhaps a more positive message than one showing outcomes determined largely by prior attainment. In this Further Education college at least, for those who displayed commitment and persistence, success was possible, even where little evidence of success at school was available (the two students in the Intermediate sample who achieved a ‘Distinction’ had no GCSE grades upon entry to the college: further, six students who entered with a GCSE grade F at either maths or English obtained ‘Merit’ awards). An analysis of individual outcomes suggests that these courses ‘pulled up’ a number of individuals from a low-grade GCSE base to a medium-level vocational qualification and, in this sense, Parkfield College offered a genuine ‘second chance’ to those students who showed commitment to their course.

However, a high proportion of those who enrolled in 1994 did not stay in college long enough to benefit from this opportunity. Over one-quarter of the Intermediate sample left their course before the end, some not long after enrolment. But other courses, notably the two-year A level course had higher drop-out rates. GCSE retakes which are increasingly giving way to Intermediate GNVQ enrolments had a lower success rate than Intermediate GNVQ and the same rate of drop-out.

Since this study followed only students who remained in college and the college itself did not at the time have any systematic follow-up of leavers we can only speculate and refer to previous research for their reasons for leaving. Earlier research on leavers from school-based courses suggested that labour market 'pull' constituted a major reason for early leaving. This study would add to that observation that there is no evidence that the least able as measured either by GCSE or by ALBSU tests showed a tendency to leave early.

It therefore seems likely that most were 'pulled' by the labour market rather than 'pushed' by the college. Wolf (FEU/Institute of Education/Nuffield Foundation 1994), examining the intentions of students enrolled on Intermediate GNVQ courses found that only one-fifth planned to enter employment. It might therefore be assumed that those Parkfield students who stayed the course did so not because they were aiming to improve their chances in the labour market but because they were aiming to progress to further study for which the GNVQ is a prerequisite. Students who left early had presumably decided that their interests were better served by taking a job rather than by gaining a vocational qualification. This highlights one of the outstanding weaknesses of national vocational qualifications in Britain compared to other European countries, namely the lack of recognition accorded to intermediate vocational qualifications on the labour market. Earnings differentials for those with intermediate vocational qualifications have been shown to be only a few percentage points higher than for lower grade GCSE passes (Robinson, 1997). Until employers are convinced that these qualifications offer genuine value-added, problems of high drop-out are likely to persist.

A more flexible offering at the intermediate level based on modularisation of the 16-19 curriculum would have served the students in our sample better than the current rather inflexible GNVQ structure. Students aiming to study full-time for an Intermediate vocational qualification before entering work could then have additionally acquired relevant work-related NVQ units as part of their qualification and could have taken time off their course to gain work experience in their chosen field. This would have had the effect of producing a wider range of the skills valued by employers. Students aiming for further study could have broadened and deepened their GNVQ course by taking more academic units from GCSE courses. Those who left early could have been credited with part-achievement (currently only possible with NVQs) and returned at evenings and weekends to complete their qualification.

It is, however, important not to lose sight of the fact that vocational qualifications at the Intermediate level offer a route through to higher level employment-based or college-based career progression to those who have finished school with relatively poor GCSE grades. In this sense the Intermediate GNVQ can be seen as a ‘lifeline’ or ‘bridge’ to future growth and development for the majority of young people who find the academic hurdle of higher grade GCSEs too demanding. The task now is to strengthen and support that ‘bridge to the future’.

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