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A Allen

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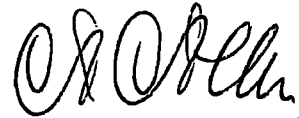
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**RULES FOR THE SUBMISSION OF WORK FOR HIGHER DEGREES.**

**STREAMING, AND THE ALLOCATION OF TEACHERS, IN THE SECONDARY SCHOOLS OF A COUNTY BOROUGH.**

- (c) No part of this work has previously been submitted for a degree. The study is the work of the candidate not a joint work.
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**A. Allen.**

STREAMING, AND THE ALLOCATION OF TEACHERS, IN THE SECONDARY SCHOOLS  
OF A COUNTY BOROUGH.

ABSTRACT.

Introduction

No one would suppose that lower streams need less competent teachers than the upper streams yet recent literature indicates that teachers tend to be streamed as well as pupils.

Aim

To study the allocation of teachers to the various streams in the Secondary Modern Schools of a County Borough (Section 1) and to examine the case for the lower streams receiving an equal, if not a better, allocation of 'good' teachers (Section 2). The General Null Hypotheses tested are that there are no differences in

- A allocation to the upper and lower streams of teachers who are
  - (1) Heads of Subjects; (2) Holders of Special Qualifications;
  - (3) Holders of Responsibility Posts;
- B the numerical sizes of groups in which upper and lower streams are taught;
- C (1) the degree of Secondary Education received; (2) the difficulty of the teaching situation; (3) the opportunities within the school; (4) the home backgrounds; that constitute a case for the lower streams receiving a better allocation of 'good' teachers.

Perspective is brought to the 'attitude' and 'opportunity' findings by a number of Secondary Modern - Grammar Schools' comparisons.

#### Sampling and method

The nine Secondary Modern Schools of the County Borough allowed access to the necessary sources of information for Section 1. Other data were obtained mainly by questionnaire. The Questionnaire, containing a number of Likert-type scales as well as 'mobility' and 'opportunity' questions, was completed by some 1,800 third and fourth form pupils from the Secondary Modern and Grammar Schools of the County Borough. No information relating to home backgrounds was made available.

#### Conclusions.

There were sufficient indications of stream related differences to allow the General Null Hypotheses to be rejected: the upper streams receive a better allocation of teachers and the evidence of Section 2 presents a strong case for why this should not be so.

---

A. ALLEN.

M.ED. THESIS TO BE PRESENTED TO THE UNIVERSITY OF DURHAM -  
SEPTEMBER 1969.

STREAMING, AND THE ALLOCATION OF TEACHERS, IN THE SECONDARY SCHOOLS  
OF A COUNTY BOROUGH.

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from it should be acknowledged.

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Finally my apologies to my wife and family for inflicting the study upon them; ultimately it is they on whom the burden falls.

A.A.

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CHAPTER ONE

INTRODUCTION AND AIMS OF THE STUDY.

## 1.1. INTRODUCTION

In this country homogeneous grouping is commonly referred to as 'streaming'. For the purpose of this study the definition of homogeneous grouping will be that quoted by H.A.Passow (71) from the Dictionary of Education, 'The classification of pupils for the purpose of forming instructional groups having a relatively high degree of similarity in regard to certain factors that affect learning.'

Much has been written in recent years on the various aspects of homogeneous or ability groupings within the field of Education. Goodlad (26) commented, in the 1960 edition of the Encyclopaedia of Educational Research, that, 'Perhaps the most controversial issue of classroom organization in recent years is whether or not students of like ability should be grouped together for instructional purposes.'. This study examines one aspect of streaming; the allocation of teachers to the various ability groups.

## 1.2. AIMS OF THE STUDY.

The two basic aims of the study may be summarized as follows:

SECTION 1. To study the allocation of teachers to the various streams in the Secondary Schools (excluding Grammar Schools) of the County Borough.

(i) One aspect of the analysis of allocation is based on the assumption that all teachers are not equally good for particular tasks and

therefore teaching from certain categories of teachers is preferable to that from others.

(ii) The second aspect of the analysis of allocation is based on the teacher-pupil ratios in the various teaching groups during the Secondary School Education of the pupils involved.

The following General Null Hypotheses are tested:

A. 'There is no difference in the allocation to the upper and lower streams of teachers who are (i) Heads of Subjects; (ii) Holders of Special Qualifications in the particular subjects; (iii) Holders of posts of responsibility.'

B. 'There is no difference in the numerical sizes of groups in which upper stream and lower stream pupils are taught during their Secondary School Education.'

SECTION 2. The case for the lower streams. To determine whether there is evidence that strengthens the case for the lower streams receiving an allocation of 'good' teachers equal to, or better than, that of the upper streams. By 'good' teachers one is referring to teachers in the categories of SECTION 1.A. above.

The following General Null Hypotheses are tested:

C. 'The upper and lower streams do not show evidence of differences in (i) the degree of Secondary Education received; (ii) the difficulty of the teaching situation they present; (iii) the opportunities afforded them within the school; (iv) the educational opportunities afforded them

by their home backgrounds; that constitutes a case for the lower streams receiving a better allocation of 'good' teachers than the upper streams.'

#### CRITERIA FOR SECTION 2.C.

The four sections are analysed using the following criteria:

- C (i) Degree of Secondary Education - Early Leaving, School Attendance, Regularity of Homework, Size of Class Groups.
- C (ii) The Teaching Situation - Irregular Attendance, Attitudes to School Values, Effects of Mobility, and Conflict within the Pupil Role-set.
- C (iii) Opportunities within the School - School Games, School Concerts, Pupils' Work on Show, Helping at School Functions, and Membership of School Clubs.  
This section can be viewed as allocation of teachers in extra-curricular activities.
- C (iv) Home Backgrounds -.

The Research Hypotheses, i.e. the predictions prior to collection and analysis of the data, can be summarized as follows:

The upper streams compared with the lower streams:-

- (i) receive a 'better' allocation of teachers;
  - (ii) enjoy a more favourable teacher to pupil ratio, if the full Secondary School life is examined;
- and that this situation is exacerbated because they also :-
- (iii) receive a greater degree of Secondary Education;

- (iv) present a less difficult teaching situation;
- (v) enjoy greater opportunities within the School;
- (vi) enjoy better opportunities educationally as a result of home backgrounds.

The specific sub-hypotheses will be stated in the appropriate tables;

### SECTION 3. Attitudes and Opportunities in Perspective.

In addition to the two basic aims of the study a third section was added in an attempt to view the 'attitudes and opportunities' of SECTION 2 in perspective. This section involves a number of Streamed Grammar Schools as well as the schools of Sections 1 and 2. A number of comparisons are made between the Secondary Schools of the Borough and the Grammar Schools' sample. No directional hypotheses were postulated for this section of the study. The basic aims may be summarized as follows:

Between the Grammar Schools and the Secondary Schools of Section 2 - to compare (a) the attitudes, and (b) the opportunities of various ability groups in order to view the findings of Section 2 within a wider context and hence bring perspective to the findings.

#### 1.3. INVOLVEMENT OF THE SCHOOLS.

There are two categories of schools involved in the study. For ease of reference they will be called the Secondary Modern Schools and the Grammar Schools. Detailed descriptions of the schools are

given in the 'Design of the Study' sections. The Secondary Modern Schools are all within the County Borough being studied; the Grammar Schools are also within the same County Borough.

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CHAPTER TWO

LITERATURE RELEVANT TO THE STUDY.

This section will, as far as possible, follow the general order of the research as outlined in the 'Aims of the Study'.

## SECTION 1.

### 2.1. STREAMING.

Much has been written recently on the topic of streaming. In 1960 Goodlad (25. P 223) commented in the 'Encyclopedia of Educational Research' that;

'Perhaps the most controversial issue of classroom organization in recent years is whether or not students of like ability should be grouped together for instructional purposes.'

Many of the studies have been concerned with the apparent effects of various forms of grouping on the rate and extent of children's intellectual development and scholastic progress. In 1930, Miller (46) and Otto analysed twenty 'experimental studies in homogeneous groupings' and concluded:

'With respect to student achievement, there is no clear cut evidence from these twenty studies that homogeneous grouping is either advantageous or disadvantageous.'

Later Ruth B. Ekstrom (20) examined thirty five 'critically controlled studies comparing the effectiveness of homogeneous and heterogeneous grouping as determined by student achievement'. Her findings were that:

'Results were not consistent or conclusive in the thirty-plus studies critically examined. Of the experimental studies. thirteen favoured homogeneous grouping.....fifteen found grouping to be of no advantage or to be a detriment, and five found mixed results.'

According to Caroline Benn (3), ' the most comprehensive research project on streaming yet carried out in the United States' was by Goldberg, Passow and Justman (24); the book, 'Effects of Ability Grouping' describes the study. Their general null hypothesis was:

(P 24) 'Neither the presence nor absence of gifted or slow pupils, nor the range of abilities in any given classroom, nor the relative position of a particular ability level within the range will affect the attainment of pupils.'

Their findings were summarized as follows:

(P 167) 'The General Conclusion which must be drawn from the findings of this study and from other experimental group studies is that narrowing the ability range in the classroom on the basis of some measure of general academic aptitude will, by itself, in the absence of carefully planned adaptations of content and method, produce little positive change in the academic achievement of pupils at any ability level.'

Within the above text Goldberg and others include a chronological Survey of Research from 1916 to the time of writing, 1966, (P 1-22).

The findings are inconclusive and according to the authors:

'Many of the issues concerning grouping remain unresolved, and most questions are still unanswered despite seventy or eighty years of practice and at least forty years of study. Insufficient and conflicting data are being used to support partisan views concerning the consequences of grouping rather than to resolve the persistent issues.'

Whilst there is a lack of conclusive evidence in the field of streaming and its affect on ability, Goldberg and others (P 168) have this to say following their research:

'Ability grouping is inherently neither good nor bad. It is Neutral....It can become harmful when it lulls teachers and parents into believing that the school is providing differentiated education for pupils of varying degrees of ability when in reality it is not the case. It may become dangerous when it leads Teachers to underestimate the learning capacity of pupils out of the lower ability levels....when it is inflexible and does not provide channels for moving children from lower to higher ability groups and back again....as their performances at various times in their school career dictates.'

'Real differences in academic growth result from what is taught and learned in the classroom.'

One is aware of the warning that streaming can result in a self-fulfilling prophesy. This is put into far stronger terms by other writers on the subject.

## 2.2. STREAMING A SELF-FULFILLING PROPHECY.

Brian Jackson, Director of ACE, is very clear in his views (31.P 3).

'Whatever the defence in theory, in practice, - and the evidence is strong - streaming means;

1. a failure to bring out the very able people.

2. a common neglect of the weakest, deprived, or unlucky children. Of course there are gifted 'C' stream teachers...

but the bigger fact is that 'C' children are usually given worse provision, least opportunity, and are trapped in atmospheres of low expectations.

3. once an 'A' always an 'A'; once a 'C' always a 'C'.

4. streamed Teachers. They won't usually admit it, but they too are taken prisoner by the system, and their talents weakened or stylised.

5. and while we're at it, of course, it means streamed parents, streamed neighbourhoods.'

Other writers have made observations about the ostensibly accurate placement of children when considered in the light of their future achievements. Daniels (13. 1955) published an account which showed the 'A' stream in one school manifested a mean increase of 7.4 in the I.Q.'s during the four years of the Junior School, whilst the 'C' stream I.Q.'s were depressed by 12.3 points. Douglas (16) has this comment to make:

'In the lower streams the relatively bright children are Handicapped either by unsuitable teaching or lack of competition. Once allocated, it seems that children tend to take on the characteristics expected of them and the forecasts of ability made at the point of streaming are to this extent self-fulfilling.'

Hargreaves (29) lays stress on the teacher attitude:

(P 186) 'The point is that none of the teachers feels the pressure to motivate or stimulate the low stream pupils. The problem is most acute for those Teachers who devote the majority of their time to the low streams.....they may, like their pupils, feel status deprived.....they begin to expect little of their pupils, who adapt to this reduced expectation with a lowered level of aspiration. This is one of the roots of progressive retardation.'

(P 87) 'If the upper stream passed their exams and the lower streams did not riot, the school was, for most teachers, succeeding.'

There is the suggestion that the streaming system is self-validating in that the system produces the differences which in turn justify the existence of the system.

Vernon and others (66. 1957) would not agree that the lower streams suffer by lack of competition:

'Another argument for unstreaming classes is that the duller pupils are stimulated by the presence of brighter ones to do better. This is almost certainly false. No one who has observed feeble-minded children hopelessly left behind could continue to doubt that some streaming is advisable.'

This is in contradiction to the views of Eash (19) who when examining the propositions developed by the Research Committee of the Indiana Association for Supervision and Curriculum Development (1960) observed that:

'lower ability groups appear to suffer from the deprivation of intellectual stimulation.'

### 2.3. ALLOCATION OF TEACHERS TO STREAMS.

Various comments have been made in the last few years on the Allocation of Teachers to streams. In 1957, Vernon (66) said that:

'Brighter streams, often under the better teachers, are encouraged to proceed more rapidly. Thus initial differences are exacerbated.'

In 1963, the Newsom Report was published which contained a section (Appendix 111) submitted by Goodings (25) and Pratt entitled 'The Deployment of Teachers and the Education of the Average Child'.

The following are extracts from the submission:

'No one would suppose that the average child needs less or less competent teachers than any other, though it might be argued that he needs more and better.....Certainly the C

and D streams in a secondary school might well benefit disproportionately from small classes and the best of teaching. Simply as a matter of social justice their claim to a bigger share of such resources is undeniable, but these are precisely the children for whom the provision of both sorts is the least satisfactory.....the creation of an extended course... which only impoverish further the provision within the school for the less able. Advertisements offering "opportunities for work with backward classes" are rare indeed.'

'Even if the shortage (of teachers) were to be arbitrarily eliminated.....the consequent improvement.....for children of average ability would not be paralleled by a corresponding increase in the quality.'

Within the report itself Chapter 8 Para 190 includes the following:

'Many (heads) urge the importance of ensuring that the less able pupils have their share of the best facilities and equipment and of the best teachers:

"Perhaps the most important thing is to make it clear that the less able youngsters (and the 4th year leavers) get a fair share of the best staff, the best rooms,...to this end my deputy, my Senior Master, and myself each teach the 4th year leavers and the third year lower forms pretty substantially."

"It is frequently acknowledged that the brunt of staff

changes and handling by temporary or unqualified teachers often has to be borne by the groups of 'ordinary', average pupils.'

The same trend was referred to by Jackson (32. 1964) in his study of streaming. In Table 33 (P 101) he showed that the trend, in a sample of ten Streamed Primary Schools, was for there to be a decline in age, number of years teaching experience and number holding Graded Posts of teachers of A, B and C streams. The comments of two head teachers were as follows:

(P34) 'What many theorists fail to realise is that there are 'A', 'B' and 'C' teachers in the same way as there are 'A', 'B' and 'C' children.' Headteacher, Coventry.

(P109) 'It was almost a disgrace to take a 'C' class and an honour to take an 'A' class. I saw my Heads put beginners in 'C' classes and experienced men in 'A' classes : and 'C' mindedness in a child or teacher is a disastrous thing.'

Jackson comments (P 127):

'In less dynamic schools the values were naked.....the crude facts were of 'C' classes in the poorest accomodation, of 'C' teachers being less qualified, less promoted, less well-paid.'

Perhaps two quotations from 'Grouping in Education', edited by Alfred Yates, should be included. Referring to the 'role of teachers' he says:

'The prestige that a teacher enjoys is to a large extent corr-

elated with the age and ability of his pupils.....a kind of pecking order develops which is mainly determined by these factors.....The 'major public schools.....and down eventually to the secondary modern schools.'

But what of the teachers who teach the lower streams of the 'lowest' schools? In Yates's 'General Conclusions' he has this to say:

'Grouping tends to sustain the differences on which it is based.....To isolate an able minority of pupils.....to accord them preferential educational treatment.....more highly qualified teachers, and a longer period of schooling....not unnaturally results in their producing superior levels of attainment.'

More recent observations were made on the subject by Hargreaves (29. #967) in his 'Lumley Study' who not only confirmed that 'Poorer' teachers are allocated to the lower streams (P 169) but also claimed that in his observed school:

'the selection process (for holidays) reduced the actual proportion of C and D stream boys admitted to these holidays.' (P 96).

He suggests that:

'If we are to make full use of the talents of all our teachers it would be wise policy to allocate every teacher to all streams for some part of his time-table.' (P 186).

Dobinson (15) sees the situation for the 'Bottom Stream in Secondary Education' to be so bad that he advocated that it is:

'Better to escape from the grasp of mock-academics at the age of fifteen.'

and not to remain at school. Mays (42) suggests that part of the solution would be for:

'Teachers to make a drastic mental readjustment to be able to deal sympathetically with people whose attitudes and standards are different to their own.'

In his study of the 'Urban Child' he considers the fact that:

'out of 170 only 5 teachers lived in the area'

to be of importance. This view had been stated earlier by Karl Mannheim (39. Chap. iv) when he stated that:

'The Teacher must know the social world from which his pupils come, for which they have to be prepared.'

and that the teacher is a 'lifemaster' not just a 'schoolmaster'.

The above quotations suggest that perhaps schools are preparing them for the social world to which they will belong by preparing pupils for a relatively deprived existence if they are in lower stream.

#### 2.4. MOBILITY BETWEEN STREAMS.

A number of quotations have already been included exemplifying the rigidity of the streaming process. Even if one is streaming strictly by intelligence, Vernon (66) states that in a three stream Junior School:

'roughly 10% would be required to move up or down a stream every

year; and that only two-thirds would be correctly placed in the same stream throughout a four year period.'

He does not believe that such mobility is in evidence (67):

'In Britain there is insufficient flexibility of transfer, so that those downgraded never get the chance of catching up.'

Support for Vernon's conclusion can be found. Blandford (5) in his study of 1700 Junior School pupils states:

'Schools were strongly in favour of streaming and were generally anxious to interchange pupils between streams although, in practice, the number of transfers was found to be small.'

The N.F.E.R. report on 'Primary Schools' (49. 1967) further supports Vernon in that it found that 89% of schools claimed to move children between streams but in the year studied only 69% did. It stated that:

'Once children are assigned at 7+ most remain for the four years of the Junior School.'

The studies above are based on Junior School pupils but one can see the developing pattern. Vernon (66) claims that the 11+ is in fact a 7+ and that one's stream at 7+ depends on initial introduction to reading and number work. He quotes Khan (35. 1955):

'early streaming reflects social class much more than it does ability, since those quicker to read mostly come from the middle class.'

Thus pupils arrive at the secondary education stage where once again

streaming is according to Rowe's article in 'Where - Supplement 12':

'Irreversible for 95%'

and is made so because:

'Streams flow different ways'

following courses thought to be suitable for the pupils and thus, after a time, transfer becomes increasingly more difficult. This is contrary to the recommendations made as long ago as 1943 when the Norwood Report (51) advocated:

'That the curricula of the Lower School (i.e. years one and two of Secondary Education) in all types of school should be generally common.' (Chap. 3. P 17-18).

Jackson and Douglas found that mobility decreased to between 2% to 3% per annum by the age of eleven and that one of the reasons was that 'B' children were difficult to absorb into an 'A' stream (32. P 103). How much more difficult must the situation be in secondary education. When mobility does take place there is evidence that it is based on factors other than intelligence. (Greater detail will be given under Section 2 of the Literature.)

Dale and Griffiths (12) discount Health as a mobility factor:

'Not one of the deteriorators had a 'C' category.'

They also found that, of the 39 deteriorators in the Grammar School studied, in only one case was there a parent educated in a Grammar School.

Hargreaves (29) shows that the I.Q. range in each stream

widens as the pupils move from the first year through to the fourth with an I.Q. range of some 40 points in the top stream fourth year.

He states that:

(P 169) 'Those with positive orientations towards the values of the school will tend over the four years to converge on the higher streams; and those with negative orientations will tend to converge on the lower streams.....Demotion to the delinquent subculture is unlikely to encourage a boy to strive towards academic goals, since the pressures within the peer group will confirm and reinforce the anti-academic attitudes which led to demotion.'

## SECTION 2.

Literature dealing with the relationship between the working class and the educational system has been included in some detail since no direct evidence could be obtained about the pupils involved in the study. Information about home backgrounds was not made available either by the schools or other sources.

### 2.5. EARLY LEAVING - FALL OUT OF THE WORKING CLASS.

There are three reports of the Minister of Education's Central Advisory Council relevant to this section of the literature: they

are 'Early Leaving' 1954, 'The Crowther Report' 1959, and the 'Newsom Report' 1963. The terms of reference for the first report (18) contained the following:

'To consider what factors influence the age at which boys and girls leave secondary schools which provide courses beyond the minimum school leaving age.'

One of the findings was that:

(Chap. 3) 'The improvement between 11 and 16 which has raised many pupils from the bottom selection group to the highest academic categories is most common (amounting to 48.3%) among those from professional and managerial occupations, while the corresponding deterioration.....is most common among the children of unskilled workers (54%) and semi-skilled workers (37.9%).'

In chapter nine the positive correlation between parents' occupation and a child's length of school life and academic progress was confirmed.

The Crowther Report (11) Tables 2 and 4 are quoted below which speak for themselves. Crowther used this evidence in support of raising the school leaving age:

Crowther Table 2 - Percentage Distribution of National Service Recruits to the Army and R.A.F. by Age on Leaving School and Father's Occupational Background.

Father's Occupation	Number = 100%	Recruit's age on leaving school			
		15 or less	16	17	18 or more
		%	%	%	%
Professional or managerial	929	25	24	17	34
Clerical or other non-man.	882	59	22	9	10
Skilled workers:	3666	78	15	3	4
Semi-skilled	946	85	11	2	2
Unskilled	852	92	6	1	1
<hr/>					
All above groups	7275	72	15	5	8

Crowther Table 4 - School - Leaving Age for (a) All Men in Ability Groups 1 and 2 (b) Sons of Manual Workers (except in Agriculture).

	Number = 100%	School-leaving age.			
		15 or before	16	17	18 or later
		%	%	%	%
All men in Ability group 1.	681	9	33	17	41
Manual workers' sons in Ability group 1.	295	19	44	13	24
<hr/>					
All men in Ability group 2.	1824	65	22	6	7
Manual workers' sons in Ability group 2.	1286	75	20	3	2

Later the report goes on to say that:

'The view of John Dewey that what the best and wisest parent wants for his own child the community must want for all its children.' (Chapter 11). and that

'If the abler children of the lower social groups.....are to receive a full secondary education, it does not look as if it can be achieved without increasing the length of compulsory education.' (Chapter 12).

Thus some twenty years later one of the recommendations of the Spens Report (63):

'The adoption of a minimum leaving age of 16 years....must even now be envisaged as inevitable.'

was being repeated though one was for parity of esteem for schools while the other is rather for parity of education for the social classes.

Chapter 22 of the Newsom Report (50) presents 'what the 1961 Survey Shows' by referring to three types of pupils as Brown, Jones and Robinson. Brown stands for roughly the top quarter in ability of Modern School pupils, Jones for the two middle quarters and Robinson provides the bottom quarter. The table below has been compiled from the data of Chapter 22 of the report:

Newsom Table 1 - The 1961 Survey - sample of some 6000 boys and girls.

	Likely to stay on. %	Some truancy. %	In forms with regular H.W. %	Do H.W. set properly. %	Refuse to wear uniform. %
Brown boys	42	3	77	95	25
girls	43	5	77	95	10
Jones boys	16	6	52	90	38
girls	19	7.5	60	94	21
Robinson boys	3	15	24	82	51
girls	4	15	36	78	36

	Member of school team. %	Esp. difficult. %	Discipline. Average. %	Thoroughly co-operative. %
Brown boys	30	2	26	72
girls	19	2	23	75
Jones boys	28	2	34	64
girls	20	4	29	67
Robinson boys	20	10	35	55
girls	14	7	38	55

The fall out of the working class is also in the field of Higher Education. J. Windsor (70) comments that Robbins estimated that working class students in higher education had increased by approximately 2% since the period 1928 to 1947, and that 18 year olds of equal ability and the requisite 'A' levels were twice as likely to go to University if from the middle class than if they were from the working class. He also quotes the findings of the 'National Survey of Health and

Development of Children (1966) that out of a sample of 5,362 Grammar School 6th form pupils not a single lower-manual-class candidate was accepted for Oxbridge.

## 2.6. STREAMING IS CLASS BIASED.

Apart from the evidence in the previous section there are further writings on the subject of 'streaming', as defined in the introduction, and the bias which suggest that 'streaming' favours certain 'classes' in society. It was shown by Floud, Halsey and Martin (23. 1956) that selection based on ability also involves, to some extent, segregation in terms of social class differences. There tends to be a positive correlation between socio-economic status and performance in the kinds of test used for the purposes of selection. Halsey, in his contribution to the 'Frontiers of Sociology' quoted Dr. Bernstein (4):

'Reduced educability is deeply rooted in the social structure of the working class neighbourhood and family life.'

Whalley (68. 1964) found that in the Grammar School he studied 83% of the 'A' stream had at least one parent who had received Grammar School Education while the figures for the 'B' and 'C' streams were 63% and 28% respectively.

'It is unlikely that we will ever get a better statistical record of how the self-fulfilling prophesy works.'

is Jackson's (32) comment on the Douglas study (16) in which Douglas makes the following observations:

'When children of the same level of ability are considered, the middle class children tend to be allocated to the upper streams and the manual working class children to the lower streams (there are 11% more middle class children in the upper streams than would be expected from measured ability at 8 years and 26% fewer in the lower streams.)'

He also comments that in the lower streams there are 8% more children with a history of poor maternal care in infancy than would have been expected.

Jackson (32. 1964) shows Tables 6, 7, and 8 with data based on children's streams and their father's occupation. Table 6 is evidence from 140 two stream schools, Table 7 252 three stream schools. Table 8, perhaps the most relevant, is quoted below. The Table is self explanatory; it needs no comment:

Jackson Table 8 - 11 Year Old Children: Father's Occupation in in 228 Four-stream Schools.

Father's Occupation	'A' Stream. %	'B' Stream. %	'C' Stream. %	'D' Stream. %
Professional and Managerial	55	17	13	5
Clerical	40	32	17	11
Skilled Manual	34	30	24	12
Semi-skilled Manual	20	28	31	21
Unskilled Manual	14	24	30	32
Percentage of children in each stream.	30	28	25	17
Total number of children sampled.		7,097		

In his summary of the 660 schools study, (P 29) Jackson imagines an eighteen <sup>r</sup>stream primary school and supposes the trends he has found, to exist within this school. The result he sees is that no child in 'R' stream would have a middle-class father. Many of them would be children whose fathers were imprisoned, unemployed, crippled or ill. The children would also in many cases be from broken homes.

Burt (7. 1959) actually talks in terms of 20% of the difference in measured intelligence in primary school children may be the result of environment and Hindley (30) sees the class effect on intelligence being in evidence even before the primary school stage. Mabey (38. P 9) uses this theme to support the suggestion that intelligence is affected considerably by the degree to which it is used and is not a constant based on hereditary factors:

(P 10) 'The Jesuits used to claim that if they could have a child for its first six or seven years they could shape the whole pattern of its life. Well, the class system, through its parental agents does have the child for that time.'

Marsden (41) believes that the middle-class parent influences his child's I.Q., not by transmitting genetic intelligence but by teaching the child to talk. This initial advantage is then built upon by parental enthusiasm, knowledge and by 'speaking the same language' as the teacher:

(P 40) 'Most schools large enough to stream do so, and how-

ever they grade their pupils they affectively sort them by social class. Streaming is teachers' (and parents) vision imprisoned by society's demands for an elite and a working class; for children of 'gold', 'silver' and 'Bronze' as Plato put it.'

(P 44)'It is significant that one seldom comes across a really dull middle-class child, one who will not get a few 'O' levels.'

## 2.7. HOMEWORK.

There appear to be two main reasons put forward for homework being set; the first is in order to progress at a faster pace and the second to bring the length of the working day of a pupil in keeping with that of a young worker.

Vernon (66) includes lack of homework as one of the reasons why modern school pupils are more retarded relative to grammar school pupils after three years of secondary education. In chapter 12 of the Crowther Report (1959) the point is made that a child has the same official school hours whether he is eight or eighteen and that this is no preparation for work. It goes on to state that:

'Wherever homework is set, and conscientiously done, the balance is substantially redressed.'

Since the lower streams are more likely to start work earlier this strengthens the case for homework in these streams. Unfortunately

the lower ability range seem to be given very little homework.

According to Newsom (Para. 123):

'The abler pupils in secondary schools are regularly required to do a substantial amount of homework, which considerably lengthens their effective working day. But large numbers of pupils, and the majority of 'our' pupils, commonly do none. We are strongly of the opinion that all boys and girls would profit from undertaking some work for themselves outside of what is done in lessons.'

The percentage of pupils doing homework regularly are (a) boys - Browns 77%, Jones's 52% and Robinsons 24% with (b) girls - 77%, 60% and 36% respectively. (see Table Newsom 1). Even A.W. Rowe (59) who has written so much, and lectured in many parts of the country, on the inequalities of streaming seems to operate a system that will tend to widen the achievement gap between ability groups:

'Pupils who show special aptitude in that subject will not work faster, but will do extra (enriching) work, work at a deeper level, as well as extra homework.'

## 2.8. CONFLICT WITHIN THE PUPIL ROLE-SET.

Perhaps the most recent book which is relevant to this section of the literature is 'School Relations in a Secondary School' by Hargreaves (29. 1967). The following are extracts from his findings:

(P 91)'The higher the stream, the more favourably the pupils regard the teachers and the more positively they assess their relationship with the teachers.....In the lower streams, the pupils are orientated against the teachers' values and dislike the teachers.'

Unfortunately Hargreaves's Tables (XX, XXI and XXII) do not support his own conclusions.

(P 159)'the 'A' stream informal status correlates positively with academic achievement and behaviour rating scores, whereas in the lower streams informal status is a function of a negative orientation to the school's values.....and the boys disapprove of pupils who meet the teachers' definition of the pupil role.'

(P 168-169)'For boys in high streams life at school will be a pleasant and rewarding experience.....Conformity to peer group and school values is consistent and rewarding. For lower streams conformity to teacher expectations gives little status.'

Hargreaves believes that these status deprived children are forced to seek prestige elsewhere to compensate and this is done by creating a subcultural peer group within which status is achieved by rejecting school values. In other words the group norms are anti-school. The teacher becomes the 'direct' agent by which the working-class children are exposed to middle-class values. There are middle-

class conformist "value judgements" from infant school to university. These are overt in school organisation but also in the day to day interaction of teachers and pupils in class, corridors and playground. Are not most teachers the successes of the self-perpetuating system - living proof in their own eyes of the value of conformity? Thus they are unsympathetic to the questioning, let alone the rejection, of these values. For the lower streams an anomic situation can be created in that there is exposition to these values but no status conferred on them within these terms.

Steaming can develop anomie i.e. 'absence of common values in a society'. (Hugo Reading 55). Merton (45) further defines anomie as:

'disjunction between culturally prescribed goals and socially organized access to them by legitimate means.'

Durkheim (17) believes that deviant behaviour develops when man's aspirations no longer match the possibilities of fulfilment. Cohen in his 'Delinquent Boys' (9) states that:

'Certain children are denied social status in the respectable society....cannot meet the criteria of the respectable status system.'

He adds that it is the working-class who are at a disadvantage. Compared with the middle-class the same people, 'keep finishing at the bottom of the heap.' Rejection of the values is one solution, Steaming tends to create a group in this situation and therefore group rejection of the said values and a subculture can be the outcome.

Hargreaves sees the subcultural development as a function of four mutually reinforcing variables: 1. The home; 2. The organization of the school and the mobility system within it; 3. The pressures towards conformity to the informal norms of the stream; 4. Tendency of teachers to favour and reward higher stream pupils:

(P 176) 'The low stream boys are 'failures'; they are status deprived both in the school and in society; their efforts meet with little success. Their problem of adjustment is solved by a rejection of societal and teacher values, which are substituted with a set of peer group values, and status is derived from conformity to a reversal of societal and teacher values.'

Jackson (32) gave warning of the social effects of streaming when he said:

(P 126) 'A' classes, segregated and streamlined, were an elite in training. But 'C' classes, separate and inward turning, were almost a text-book illustration of how to create the culture of the gang. None of these 'C' classes were filled with hooligans, yet all the necessary conditions for the embryo gang were provided by the school.'

Chetcuti (8. 1960) in his study of the morale in the 'A' and 'C' stream pupils in Secondary Schools found that:

'Streaming tends to lower the morale in the duller streams  
.....Lower streams were dissatisfied with the status of

their form yet most of them said they liked being in it.'

He concludes that:

'There are indications that differences in morale exist and that one of the most important factors leading to these differences is the difference in the attitude of teachers towards the two streams.'

Further support for the suggestion that the lower streams will present a more difficult teaching situation, due to their attitudes, is found in Mays' (43) study of Juvenile Delinquency in Liverpool. He states that Juvenile Delinquency is just one aspect of the behaviour pattern of the underprivileged, it is not that the people are maladjusted but that they are adjusted to a deviant sub-culture. These below average pupils in educational attainment, find that a group or gang meets their needs and gives them an opportunity to earn respect and affection of their contemporaries.

## 2.9. GROUP PRESSURES.

Kingsley Davis (14) states that:

'It is only through the approval of others that the self can tolerate the self.'

while Ralph Linton (37) believes that belonging to a group is one of the four psychic needs common to all human beings. Skinner (62) makes the following comment:

'Important among human reinforcements are those aspects of

the behavior of others, often very subtle, that we call "attention", "approval" and "affection". Behavior which is successful in achieving these reinforcements may come to dominate the repertoire of the individual.'

In the development of the 'self' one may ask 'Who am I?', 'How do I behave?' and 'Why do I act as I do?'. The person develops a 'superego' (6) which is the moral standard by which he evaluates his self-image therefore one is faced with a possible conflict of self images and self demands. The psychoanalyst's 'super-ego' is like Mead's (44) 'generalized other' in which behaviour is orientated to the maintenance and enhancement of favourable judgments from the persons "status reference group". An individual in his capacity as a pupil has a role-set e.g. vis-a-vis the school, the teachers, the members of his year, and of his form. There can be conflicting demands by other members of the role-set. He has to decide which role confers the highest status. Sprott (64) says that:

(P 173) 'The importance of the primary group can be expressed by saying that the group acts as the super-ego of its members.'

He further states that:

(P 37) 'As time goes on during adolescence there is a decline in the reliance on parents, and an increase in assertion of individual independence, a greater reliance

on the judgment of age-mates.'

There is evidence that an individual finds it extremely difficult to act contrary to any group and more so against a group that gives him prestige and whose ethos he accepts. The behaviour norms become the 'generalised other'. Abelson (1) believes that:

'A person's opinions and attitudes are strongly influenced by the groups to which he belongs and wants to belong.'

In support of this statement he quotes a number of well known experiments - (a) Asch's 'matching lines'; (b) Sherif's 'moving light'; and (c) the pedestrian-crossing experiment. People are continually seeking the views of others. Another factor that lends force to the pressure to conform is that a consensus of opinions expressed by a group helps us to make up our minds and thus relieves an individual of doubt and uncertainty. Nonconformity to the norms of the group is always slightly disagreeable unless one can receive greater approval elsewhere.

The internal system of the Primary Group may be at one with the 'external system'. Within a school a form (Primary Group) may hold the same values as the school as a Russian Stakonovitz is accepted as a model worker. On the other hand a form may confer prestige on its members for anti-school values. Conformity to school values may be looked on as a form of 'rate-busting'. In this case the microcosm will not be fully integrated with the macrocosm. If a lower stream is basically anti-school, individual members will find it

extremely difficult not to support the attitudes of the group especially if the school does not confer a favourable status upon them and if prestige cannot be gained with the school system.

## 2.10. SUMMARY.

### LITERATURE RELEVANT TO SECTION 1 OF THE STUDY.

#### Streaming.

Research studies during the period 1916-1966, mainly in America, have failed to produce conclusive evidence in the field of streaming and its affect on ability. The latest large scale study found that Ability Grouping is inherently neither good nor bad; it is neutral.

#### A Self-fulfilling prophesy.

Once pupils are streamed they tend to take on the characteristics expected of them. The lower streams due to lack of stimulation, poor working conditions and little pressure fall progressively further behind the higher streams. Thus initial predictions of ability at the point of streaming appear to be extremely accurate.

#### Allocation of teachers to streams.

Whilst no research has suggested that the lower ability groups need less able teachers than others, there is much evidence to suggest that teachers are streamed as well as pupils; the better teachers devoting more of their teaching time to the more able pupils.

### Mobility between streams.

There is a strong indication that once placed in a stream the decision is irrevocable for a very high majority of the pupils. There is further evidence that when mobility does take place it is often based on factors other than ability.

### LITERATURE RELEVANT TO SECTION 2 OF THE STUDY.

#### Early Leaving.

Researches show that there is a positive correlation between parents occupation and the length and success of a child's school life.

#### Streaming is class biased.

If children were streamed by measured ability there would be far more children from working-class homes in the upper streams than recent research shows. However children are streamed, the end product appears to be a class division.

#### Homework.

While homework for pupils about to leave school would help to bring the school working day closer to that of a young worker, the pupils who receive very little homework are the average and less able children, the majority of whom, will leave school at fifteen years of age.

#### More difficult teaching situation.

Attitudes and norms of behaviour. The under privileged lower

streams are educated within a system that provides conditions that could easily lead to the establishment of a subculture at variance with that of the school.

Group pressures.

A person needs to receive the approval of others and therefore a person's attitudes are strongly influenced by the group to which he wants to belong. The group norms may almost become his 'super-ego'. The microcosmic super-egotistical group may be deviant from the macrocosm if prestige cannot be gained in the latter.

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CHAPTER THREE

DESIGN OF SECTION 1 OF THE STUDY.

- ALLOCATION OF TEACHERS TO THE VARIOUS STREAMS  
IN THE SECONDARY SCHOOLS OF THE COUNTY BOROUGH.

One can discuss differences in allocation of teachers to streams (a) if one assumes that teachers are not all equally good for particular tasks and that teaching from one category of teacher is better than that from another category, or (b) if one compares allocation of teachers to streams by examining the teacher-pupil ratio and discusses size of groups teachers are asked to teach in the various forms and years. Thirdly, if mobility was such that pupils moved between streams spending equal time in each then the first two points would be of little importance if one was examining equality of allocation.

### 3.1. CRITERIA. HOW TO DECIDE LINES OF DEMARCATION BETWEEN TEACHERS.

Differentiation between teachers is often based on a subjective assessment. One method would have been to ask headmasters to give their subjective assessments of the teaching ability of each member of staff. It is extremely doubtful whether such information would have been produced and, even if it had, whether a common standard between heads' assessments could have been achieved. It was therefore decided to use objective criteria to differentiate between teachers.

At the present time in our schools we have teachers who are responsible for the individual subjects and carry the title of 'Head of -----' or 'Teacher in charge of -----'. If a child is taught by this category of teacher he is taught by a teacher who is not only responsible for the particular subject but

who has achieved the position by convincing an interview board that in knowledge and experience he is fitted for the higher position. The Department of Education and Science recognise such teachers for additional payment over and above the basic scale. A second method of differentiation is to compare qualifications of the teachers. Although many people are opposed to 'paper qualifications' as a measure of a 'good teacher' and although most teachers know many people who are very good teachers who are rather short of these objective qualifications, nevertheless, all other things being equal, one could hardly ignore recognised courses of study. The Department pays annual additions of salary from: £50 to £270 (£280 - Burnham February 1969) for successful completion of such courses.

The criteria above are based partly on ability in a certain subject but these exclude the teacher who is recognised within his school as a very good teacher, extremely reliable, capable of handling the most difficult of classes and yet has not furthered his study beyond his Teaching Certificate and is not thought to have the necessary qualifications to become Head of a subject. Such a teacher can be given a 'Graded Post'. Therefore the third criterion used is payment above the basic scale for 'position held', not for qualifications.

The three separate criteria for differentiation between teachers, i.e. the better teacher from the ordinary, are therefore:

1. whether the teacher is Head of a Subject;

2. whether he possesses certain recognised qualifications;
3. a very basic criterion, is he paid extra money for the position he holds in the school?

All three groups are thought to be out of the ordinary by the Department of Education and Science. Two of the three have been singled out by the Governing Bodies of the particular schools. It is possible too that parents feel happier if a child is being taught by one of these three categories of teachers rather than a teacher on the basic scale.

### 3.2. THE SCHOOLS.

Until the academic year 1967-68, the Secondary Education in the County Borough was organised along the traditional lines of the eleven plus examination and selection for entry to one of the five Grammar Schools, the remaining pupils (other than educationally sub-normal etc) being educated in one of the nine Secondary Modern Schools. Of these nine secondary modern schools, five provided courses of study leading to the General Certificate of Education Advanced Level for an age range from eleven to eighteen plus. The other four schools had not developed sixth form courses and consisted of pupils aged eleven to sixteen plus.

At the beginning of the Academic Year 1967-68 the educational system in the borough was reorganised. The eleven plus examination came to an end and the Secondary Modern Schools received a full compre-

hensive intake. Any pupil who desired education beyond the age of sixteen was to go to a sixth form college. The pupils who had commenced sixth form studies were allowed to complete their courses in the original school so that in 1967-68 the five schools mentioned above had an upper sixth but not a lower. The Secondary Modern Schools became 11 - 16 Comprehensive Schools.

For this section of the investigation, the intention was to study the nine Secondary Schools and their allocation of teachers to the various streams. On closer inspection two schools proved to be exceptional and therefore had to be excluded from most of the study. The first was officially one school with one Headmaster but it functioned in three buildings situated in three geographically different districts of the town. For the first two years, the pupils attended the nearest of the three buildings. At the end of the second year, the pupils selected one of three courses of study - Commercial, Academic or Technical. Each school unit specialised in one of the three courses. This school was unique because of its unusual pupil distribution by buildings and also because the Headmaster had to consider the impracticalities of allocation of teachers due to geographical distance between buildings and indeed between classes. The second school was partly streamed and partly unstreamed. The unstreaming at the lower end of the school was by design; the Head believed in mixed ability groups and was introducing this system gradually. In other parts of the school, pupils were grouped together because

of the small numbers. In one year there were no third forms and the few children in this age group were taught with the fourth forms.

Consequently the seven remaining schools were the population for this section (unless stated otherwise), in other words all the secondary schools (excluding Grammar Schools) that were operating a system of streaming by age and ability and whose Headmasters enjoyed the same freedom and limitations in their decisions about teachers' allocation. These schools will be referred to as 'The Secondary Modern Schools' for the purpose of this study.

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### 3.3. INFORMATION REQUESTED.

In order to examine the allocation to streams of the various teachers in accordance with 'Aims of the Study - Section 1', the following information was thought to be necessary:

1. School timetables for a given period;
2. The 'key' to the timetables, by letter or number.
3. The academic and professional qualifications of each member of staff.
4. The positions held by various members of staff and the grade of allowance received.
5. Teachers with graded posts of responsibility.
6. Number of pupils in each form for the given period.

7. Number of children in each subject group for the fourth, fifth and sixth forms.

8. Mobility of pupils between streams.

From choice one would have collected the above information for several years. Unfortunately this was not possible. There were insufficient schools that could provide the necessary detailed information for the period prior to the academic year 1966-67. On the other hand to await compilation of the 1968-69 timetables would have seriously delayed the analysis of the information. For this reason and for the other reasons that will be explained elsewhere the information was not requested for 1968-69. Therefore the details obtained were for the two years September 1966 to July 1968.

Information upon items one to six was received with little difficulty. More than half of the schools gave the details by code without disclosing the names of the staff, though this did not restrict its usefulness in any way. Under item seven the sizes of subject groups were requested; these were not made available by all schools. Details of mobility between streams were compiled from answers to a questionnaire and once again the information has certain limiting factors.

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### 3.4. PROCESSING OF THE DATA.

#### A. ALLOCATION OF TEACHERS BY ABILITY

##### SCHOOLS COLLECTIVELY.

The data from the seven schools were combined in order to study the allocation of teachers in the five basic subjects; Mathematics, English Science, History and Geography individually.

The following operational hypotheses were postulated:

- that in the first three years the higher streams compared with the lower streams receive a better allocation of
  1. teachers who are heads of subjects;
  2. teachers who hold special qualifications in the subject;
  3. head of subject teaching time;
  4. teaching time from specially qualified staff.
- that in the fourth year the higher streams compared with the lower streams receive a better allocation of
  5. teachers who are heads of subjects;
  6. teachers who hold special qualifications in the subject.

In addition figures were compiled for investigation of the following:

7. head of subject teaching periods devoted to the years 1 - 4, year 5 and year 6.
8. specially qualified teachers' teaching periods devoted to years 1 - 4, year 5 and year 6.
9. Forms 4, 5 and 6 - re Head of Subject teaching.

10. Forms 4, 5 and 6 - re Specially Qualified teaching.
11. availability of head of subject teaching in the basic subjects.
12. availability of specially qualified teaching in the basic subjects.
13. qualifications of subject heads.
14. a two-way analysis of variance - by stream/by subject.

#### SCHOOLS INDIVIDUALLY:

The figures for the allocation of teachers in the five basic subjects were combined in order to study each school individually.

The following operational hypotheses were postulated:

- that in the first four years the higher streams compared with the lower streams receive a better allocation of
15. teachers who are heads of subjects;
  16. teachers who hold special qualifications in the subjects;
  17. teachers who hold special posts of responsibility.
- and 18. A two-way analysis of variance - by stream/by subject.

#### B. ALLOCATION OF TEACHERS AS A PUPIL-TEACHER RATIO.

Information from six schools was combined in order to examine the following:

19. total teaching periods per week in all subjects devoted to each age group in the first to the sixth forms.
20. total teaching periods per week in all subjects devoted to the lowest stream in each year compared with the

fifth and sixth forms.

21. individual group sizes in a number of subjects in the fifth and sixth forms.

C. MOBILITY.

22. Mobility between streams.
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3.5. RATIONALE.

A. ALLOCATION OF TEACHERS BY ABILITY - SCHOOLS COLLECTIVELY.

The attempt has been made to present both vertical and horizontal integration in that certain subjects are examined across the full streamed secondary school population while, on the other hand, groups of subjects are examined within each school. To do one and not the other would present a superficial enquiry.

The Subjects.

Since the study is 'Streaming and the allocation of teachers', the subjects selected for analysis are those which are, by and large, taught to all streams, and involve a number of teachers. Only five subjects fulfil both criteria, these subjects being Mathematics, English, Science, History and Geography. Other subjects fail to fulfil one or both of the conditions. Many subjects such as Latin,

Russian, Typing and Metalwork are not taught to the whole age range nor to all the streams. Other subjects that are taught to the whole age range are taught entirely, or almost entirely, by one teacher, for example Art and Physical Education (one teacher for each sex). One could also claim that these five subjects are regarded as the most important in that they are compulsory in all the schools for at least three years if not for four. In the case of English and Mathematics no school allows its pupils to 'drop' these subjects even in the fifth year.

The five subjects have been treated individually across the schools to present a detailed enquiry. To group the subjects together could disguise the true situation. Certain subjects involve more teaching periods per class than others and therefore the Head of the Subject cannot teach many classes. The number of well qualified teachers will differ in each subject. By separate analysis one can study allocation when the 'better' teacher is in short supply relative to demand.

#### The Criteria:

The three criteria, on which the differentiation between the 'better' teacher and 'other' teachers has been based, are taken in turn to show the situation to an observer who may prefer one criterion to another. On the other hand, the criteria have been grouped together later and analysed by introducing a subjective scoring system. It is possible that the separate criteria could show sig-

nificant differences whilst the lower streams were in fact, in total, enjoying equality of allocation.

#### Qualifications and Allowances.

When comparing Head of Subjects with teachers other than Head of Subject, the grade of allowance for the position has been ignored. The decision as to whether a position is a Grade 'A' Head of Subject allowance or a Grade 'B' Head of Subject allowance is often dependent on either the unit total of the school or the standing of the particular subject. Frequently the History and Geography posts are graded lower than Mathematics and English. This is in no way a reflection on the ability of the teachers in question. Since some posts are classed 'Head of Department' and others as 'Teacher in charge of....' for purposes of the enquiry both will be called 'Head of Subject'. Within this enquiry, 'Specially Qualified' teachers are teachers who in the particular subject, possess at least one of the following:

- (a) a degree or equivalent;
- (b) a diploma;
- (c) a 'Third Year Supplementary Course'.

This division could be criticised in that the teacher who has studied a subject at a College of Education is regarded as being no different from a teacher who has not studied the subject. Going one step further can one decide that a General Certificate of Education course with 'A' level successes should rank below a College of Education course? Within the definition itself there is a vast difference

between many 'Third Year Supplementary Courses' and a degree of a University. The final decision as to the division was based on necessity and objective criteria. To divide qualifications into many categories information as to each teacher's G.C.E. results and College of Education subjects would have been necessary but could not have been obtained. Secondly, all teachers within the definition are paid extra money for qualifications. Thirdly, to define Special Qualifications as 'graduates in the subject' only would have resulted in a subject such as Mathematics being almost devoid of specially qualified teachers. It is in Mathematics and Science that Supplementary Courses are usually in evidence whereas in English, History and Geography the specially qualified teachers are almost entirely graduates of a University.

For the analysis of Responsibility Posts, this is not by subject but simply any teacher who is paid above the basic scale for his position of responsibility, not purely for his qualifications. To analyse Responsibility Posts by subject would in fact be precisely the same as the Head of Subject analysis as it would be payment for work within a subject. The schools in question do not have departments sufficiently large to warrant subject payments other than to the Head of such a department.

#### Division by Years.

For the first six tables the years one to three of the Second-

ary Schools are dealt with separately from year four. The fourth year presents certain difficulties. All five subjects are not compulsory in the fourth year and therefore the number of classes may not be the same. This would not be of great consequence if it were not possible that, by and large, the higher forms tend to receive the best teachers and therefore an omission in the fourth year could partially invalidate the findings. A further complication is that fourth year forms are often named after courses of study rather than 4A, 4B, 4C etc. although nevertheless one is usually made aware of the streaming. One of the schools involved teaches History and Geography under a broad heading of 'Topics' which includes other subjects as well and therefore confuses the accuracy of the data extraction. Furthermore mobility between streams when moving from the third to the fourth year may well be based on different grounds than mobility in the other sections of the school. Since the first three years are relatively uncomplicated, it was decided to deal with the fourth year separately, explain the peculiarities involved and consequently the limitations in drawing conclusions. Division in this way also enables the reader to study the findings and decide where he considers that content in a subject makes it imperative for the teacher to be qualified beyond the Teaching Certificate level.

In the above tables comparisons are made not only based on

whether classes are taught by a particular category of teacher but also of periods per week received from each 'Teacher Category' by higher and lower streams. Since each class does not receive equal periods of tuition in each subject this should help to indicate the spread of teacher time between high and low streams.

#### The Full Age Range.

Tables 7 - 10 incorporate information about the fifth and sixth forms in the schools. Comparisons made between the years 1 - 4 and the fifth and sixth forms are made in order to consider the lot of classes in the compulsory age range compared with the voluntary pupils. This may appear to be 'allocation of teachers' but not 'allocation of teachers to streams'. If in fact evidence shows that the voluntary age group receive a disproportionate share of teaching from heads of subjects and specially qualified teachers compared with the compulsory age group, then the question arises as to the proportion of lower stream pupils who remain at school beyond the statutory age. Should a high proportion of the fifth and sixth forms be from the higher streams then this would constitute an extension of "stream related aspects of inequality".

Tables 11, 12 and 13 should lend support, and partial explanation to the figures in the above tables. They show the availability of the categories of teachers in the various subjects.

#### Individual Schools.

The next group of Tables consists of testing hypotheses with-

in each school. Every aspect of the subject cannot be dealt with unless this evidence is made available. Whilst the schools in the sample have certain common factors and therefore can be regarded as one population, nevertheless each school enjoys certain freedoms in its internal organisation. The governors of each school, through the Headmaster, are free to allocate their teachers to whichever forms they wish; there is not a 'three line whip' from the Chief Education Officer. Therefore since this freedom exists it is relevant to determine whether the seven separate units exercise the freedom in favour of the higher streams. Further in the study the hypothesis is postulated that the lower streams are School Orientated to a lesser degree than the higher streams and that they therefore need better teachers as the teaching situation is more difficult. If each school is not examined separately it would be possible to find significant differences in the distribution of teachers to streams and school orientation of streams and thus draw the conclusion that the pupils with poorer attitudes are taught by the lesser able when in fact the situation could be that those that had a high percentage of 'poor attitude' pupils were indeed taught by very capable teachers.

The five subjects have not been dealt with separately in this section. Since a Head of Mathematics could possibly teach three classes in the years one to four, any findings about his allocation to classes would be of little importance. The situation in five

subjects together enables one to see whether a pattern is in evidence which is stream biased.

The first four years details have been studied. The information above relating to the fifth and sixth forms could not be applied to each school and be of any great value to the enquiry. Table 18 has been compiled to examine variance between subjects and streams. If in any school the subjects tested are less than five or the streams involved less than one would expect, the reasons for this have been stated below the appropriate tables.

#### B. TEACHER? PUPIL RATIO.

The Tables 19, - 21 have been compiled in order to compare the ratio of teaching periods to pupils in the different age groups. Only six schools are used in these tables as one school did not make its class sizes available. Consequently one is dealing with an incidental sample, i.e. taken because it was the most available (27. P 178).

It would be naive to expect to find that 'A' streams were taught in substantially smaller groups than the other streams and this section does not set out to examine the pupil to teacher ratio between streams in each year. What has been attempted is to calculate total teaching periods in all subjects devoted to each year and to express this as a Pupil to Teaching Periods ratio to

see if each pupil receives a better allocation as he moves up the school , and especially to see if the fifth and sixth form ratios are substantially better than the other years. Since the bottom stream, it is often claimed, receives a very favourable allocation of teaching time, separate figures have been calculated for the bottom streams in each year. Favourable answers to requests for detailed sizes of each subject group throughout the schools would have involved considerable work for the head teachers therefore only the available figures for the fifth and sixth forms have been included. The findings will be linked with the perusal of 'Shorter Educational Life of the Lower Streams' in Section 2 of the Study.

#### C. MOBILITY.

The rationale of the mobility table is to establish whether there is any evidence of large scale mobility which could invalidate the study of streaming and the allocation of teachers. The findings will be discussed together with the percentages of third and fourth year pupils who stated their intention to remain at school for at least a fifth year of study.

#### NUMBER OF STREAMS.

Many of the tables contain figures for 'A', 'B', 'C' and 'D' streams in the various schools. In certain years, some of the

schools had more than four streams. When this situation arose figures were extracted for the additional streams and examined to see if there was any evidence of an upward trend; i.e. the lowest streams receiving better allocations than the 'C' or 'D' streams. There was never an advantage in more than one subject and no evidence of an upward trend in any school or any subject. Therefore the lower than 'D' streams were ignored for a large section of the investigation. One school had introduced setting in its first year but since there was no difference in the categories of teachers involved in teaching first year sets, this did not jeopardize the study.

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CHAPTER FOUR

RESULTS OF SECTION 1 OF THE STUDY.

#### A. - ALLOCATION OF TEACHERS TO STREAMS.

The tables discussed below refer to the tables in Appendix One. Tables 1 - 6 show the figures for individual streams in the first four columns. These figures are condensed, on the right, in a two by two contingency table. A Chi-squared test has been used with one degree of freedom. All figures in brackets are in percentage form for ease of comparison.

#### 4.1. SCHOOLS COLLECTIVELY.

##### HEAD OF SUBJECT ALLOCATION.

Table 1 shows that in the five basic compulsory subjects in years one to three there is a general picture of gradual decline in the percentage of classes taught by the Head of the Subject as one moves through the streams 'A' to 'D' though 'C' and 'D' streams are in reverse order for Science and Geography. The differences, between allocation of Subject Heads to High Streams ('A' and 'B' streams) and Low Streams ('C' and 'D' streams), are significant beyond the .05 level in all subjects with Mathematics, English and Science ( $P < .005$ ) showing greater differences than History and Geography ( $P < .02$ ,  $P < .01$  respectively). This is to be expected as each class receives fewer periods per week in History and Geography than in the other subjects and therefore the Head of the Subject is available to teach more classes, other things being

equal. In Mathematics and English, where the number of classes any one teacher can be allocated to is severely limited, the 'C' and 'D' streams show very low percentages (6% to 12% maximum); twelve out of fifty two classes being taught by the Subject Head.

#### SPECIALLY QUALIFIED ALLOCATION.

In Table 2 the same pattern is evident with differences in allocation of Specially Qualified Teachers to the Higher Streams, compared with the Lower Streams, being significant beyond the .05 level. In the A:B:C:D:, the expected order is reversed in one subject only, English, in that the 'B' streams have a lower percentage (17%) than the 'C' streams (19%).

Tables 3 and 4 are expressed in periods per week of Head of Subject and Specially Qualified Teaching rather than classes taught by them. In all cases, other than the allocation of Head of History, (Table 3.5) the differences are significant beyond the .0005 level. History - allocation of Head of Subject - is the exception ( $P < .35$ ) and therefore the Null Hypothesis cannot be fully rejected.

#### FOURTH YEAR.

Allocation of teachers in the fourth year has been examined separately for the reasons stated on page 62 and where classes for a stream do not total fourteen it is for the reasons stated on the same page. In the subjects Mathematics, English and Science for

both the allocation of Heads of Subjects and Specially Qualified Teachers, the only reversals from the order of  $A > B > C > D$  are found in Table 5.3 (C less than D). When condensed into a 2 x 2 contingency table with d.f. = 1, the Chi-squared test shows that the allocation of teachers (Heads of Subjects) to higher streams is better than to the Lower streams in Mathematics, English and Science ( $p < .001$ ,  $P < .005$ ,  $p < .001$  respectively). The allocation of Specially Qualified teachers to streams is significantly different in Mathematics ( $P < .001$ ) and Science ( $P < .001$ ). English, whilst not significant, indicated the same trend ( $P < .1$ ). There is no evidence of differences in the allocation of teachers to the fourth year in the subjects History and Geography. Almost all of this age group are taught by the Heads of Subject and, since there are more Specially Qualified teachers available in these subjects, rarely is a fourth year group taught by a teacher with no special qualifications. The data for Tables 5 and 6 show quite clearly that in Mathematics and Science the third and fourth streams are rarely taught by teachers in either of the categories under discussion.

#### TEACHER TO PUPIL RATIO.

The first two columns in Table 7 are rather difficult to assess and therefore they have been converted in order to express the periods of Head of Subject teaching devoted to each

age groups as a ratio in the form 1 : n ; i.e. one Head of Subject period per 'n' pupils. The figures show that, in each subject, the ratio is never less than three times smaller for the fifth year than for the compulsory school age. In the sixth form the worst situation is one Head of Subject period to 1.5. pupils. A minority group is enjoying a disproportionate amount of Head of Subject teaching.

The argument for allowing this situation to exist is not to be dealt with here. Let it suffice to say that the figures indicate that pupils who complete their school attendance at the legally obligatory age are, as a population, less likely (approximately 1 : 10) to be taught by a subject head or, the other possibility that, when they are taught by such a teacher it will be in a large group. If few of the lower streams remain at school beyond the compulsory age, the results are further evidence of stream related inequalities in keeping with the findings of Tables 1 and 2.

Table 8 shows an almost identical pattern as Table 7 although in all but Table 7.3 there is a better ratio than previously for the 'compulsory age' group.

Tables 9 and 10 present the break down of the sixth, fifth and fourth forms. The act of leaving school at fifteen years of age can deprive a pupil of teaching from staff with high status and/or 'good' qualifications. This constitutes a further stream related deprivation if one assumes, prior to the results of Section 2 of the Study, that a high percentage of the fifth and sixth forms are ex 'A' and 'B' stream pupils and that few are from the lower streams. The

Tables are in percentages. There may be more than one stream in a fifth form but due to the infrequency of this the form has been analysed as one unit. Comparing Tables 9.1. with 1.1. the highest percentage was 52% as opposed to the sixth form 87.5% whilst Table 2.1. was 48% as opposed to 100%. Table 1.2's high is 29% with Table 2.2's 48% compared with Tables 9.2. 87.5% and Table 10.2. 63%.

In Science, Geography and History the trend is in the same direction but not to the same marked extent. Another aspect of Tables 9 and 10 is seen by disregarding columns 4A and 4B, as many of these pupils remain at school, and studying the columns 6th, 5th, 4C and 4D as the distributions in the pupils' final year at school. In three (Mathematics, English and Science) of the five subjects there is at least a 35% (maximum 90%) difference in the number of classes taught by the Subject Head in the higher of the 'C' and 'D' forms compared with the lower of the fifth and sixth forms. English, Science and Mathematics show the same trend for the allocation of Specially Qualified teachers amongst the same groupings though English is not to the same extent as previously (minimum 10%).

The information collated in Tables 11, 12 and 13 contributes to the explanation of why, in much of the above, allocation of teachers to streams in the subjects History and Geography does not show the same degree of divergence from equality as the

other subjects. The figures for Mathematics and Science alter substantially (11% and 15% to 33% and 41% respectively) when one includes Supplementary Courses as well as Graduateship.

Table 14 makes use of a subjective scoring system in order to test homogeneous variance between streams and between subjects. The main weakness with this system of analysis is that of allocating realistic 'merit marks' to the different categories. We are assuming (i) that a Head of Subject is of a higher quality than a non-Head of Subject; (ii) that a graduate is of higher quality than a non-graduate; (iii) that a teacher on higher pay is of higher quality than a teacher on the basic scale of pay. These are subjective assumptions but probably reasonable ones over a large population. It is possible that the results of the analysis would be affected by the choice of 'merit marks' but, if the significance of the differences is very strong, it is unlikely that the conclusions would be upset by varying the merit marks by small amounts - they are obviously of the right type, even though their exact values may be wrong. The analysis of variance is appropriate because:

'Fortunately, however the analysis of variance is a "rugged" technique that provides a useful approximation even for wide departures from both normality and homoskedasticity.'

(65. P 141).

For the reasons stated in Table 14 notes 1 and 2 our analysis of variance is restricted to three subjects and three streams. The between streams differences are significant at the 1% level. There is thus only a one in a hundred chance that such differences in streams could arise by chance. There is a steady decline in 'quality of teaching' (as defined by the arbitrary 'merit mark' system) as we go from 'A' through 'B' ( $P = .05$ ) to 'C' ( $P = .05$ ). The differences between streams 'A' and 'C' are significant at the 1% level.  $F = 6.5$  just fails to show significant differences at the 5% level and therefore the differences between subjects could reasonably be due to chance; there is no lack of homogeneity. Should we test significance between pairs of means, Science shows a higher 'quality' of teaching (significant at the 5%) than Mathematics and English though one should be wary of testing the significance in such circumstances. (36. P 141).

#### 4.2. INDIVIDUAL SCHOOLS.

For the reasons stated in para 3 page 63 each school has been examined individually in the Tables 15 - 18. In five of the seven schools the 'A' and 'B' streams receive a significantly better ( $P < .005$ ) allocation of Head of Subject teaching than do the 'C' and 'D' streams (using the Chi-squared test with 'degree of freedom' = 1, corrected for continuity). The other schools

show an advantageous percentage in favour of the higher streams; i.e. forty percent to twenty nine percent in school C and forty four percent to thirty three percent in school F. The Null Hypothesis cannot be rejected in these two cases. In both schools there are significant differences beyond the 5% level if the dichotomy falls between the 'A' stream and the other streams, that is 'A' v 'B' + 'C' + 'D'.

The allocation of Specially Qualified teachers to the classes in various streams show an almost identical pattern (Table 16). The same schools distributions are significant at the 2.5% level and beyond whilst school C shows significant differences if once again the 'A' forms are compared with the joint figures for 'B', 'C' and 'D' streams. The figures for school F are not significant and in view of the fact that the 'D' streams receive a higher percentage of Specially Qualified teaching than either the 'B' or 'C' streams ('D' = 37%, 'B' = 32%, 'C' = 29%) this is to be expected. Table 17 presents the data for the distribution of teachers by pay dichotomized into teachers who receive extra payment for positions of responsibility as opposed to other teachers. The alternative hypothesis can be accepted in schools other than school A and school F. In both these schools the 'D' forms score higher than the 'B's' and 'C's'. If this analysis had not been presented, then one would have been guilty of an omission as it is a criterion

by which teachers can be judged (para 1 page 51). On the other hand it is the least satisfactory of the criteria in that if the Head of Physical Education with no qualifications in Geography takes one class and the Head of Geography with an honours degree in the subject takes the other class, the same 'score' is recorded in both cases. A second limitation is that very few teachers in the Secondary Schools are not receiving allowances. In two of the schools being studied the situation is one hundred percent allowances in one and eighty four percent allowances in the other.

It is noticable that in only one of the twenty one sub-divisions of the Tables 15 - 17 does the 'A' form fail to receive a better percentage than the highest of the other forms.

Using the same subjective system of merit marks as in Table 14, the two-way analysis of variance has been performed for each school and the results are expressed in Table 18. The limitations of subjects and streams in individual cases are explained in the notes below the tables. The results are contained in the summary (Table 18A) which shows the probability of such differences in streams and subjects arising by chance. In each setion the trend is shown and also the significant differences between means for streams and subjects. The summary of streams shows that in schools F and G, though the 'F ratio' does not yield a probability of less than five percent, the trend is still in the descend-

ing order of 'A' down to 'B' down to 'C' though in school F in the second case the 'D' score is greater than the 'B' or 'C'. The analysis of differences between subjects shows the effects of the information contained in Tables 11 and 12. History scores the highest in all schools with Geography in second place except for Table 18 A C where there is an unaccountable dearth of Geography teachers. The lowest scores tend to be those for English and Mathematics, with Science by and large enjoying a slight advantage over them.

4.3.

#### B. PUPIL TO TEACHER RATIO.

The figures in Table 19 have been expressed in the form 1 : n (Pupils : Periods) so that one can see the number of periods per week per pupil allocated in the different years. All school subjects are included. There is a steady growth evident with a marked difference in the rate of growth in the fifth and sixth forms. The sixth form in particular shows a situation distinctly preferable to any of the first four years. In column four (Table 20) are the ratios for pupils to periods based on the lowest stream in each of the schools in each form. This is to examine the truth in the suggestion that the lowest streams have a very favourable teacher-pupil ratio. Whilst the figures show an improvement on the column four figures of Table 19, they still do

not approach the ratio enjoyed by the sixth and fifth form pupils.

It was not possible to obtain group sizes for all the individual subjects in the first four forms and therefore Table 21 is used only to illustrate the upper school situation and the very favourable group sizes they enjoy. For the fifth year the median is given whilst for the sixth forms, since there are so few of them, the individual group sizes are quoted. This is evidence enough for reorganisation of the sixth forms into sixth form colleges. The one pupil for 'A' level Domestic Science was taught by the Head of the Domestic Science Department for one day per week. If one looks at this Table in conjunction with Table 9, one becomes aware not only of the minute groupings but also of the drain of Head of Subject and Specially Qualified teaching time involved.

4.4.

#### C. MOBILITY.

Table 22 shows pupil mobility between streams that has taken place involving one thousand and thirty pupils who at the time were in their third or fourth year of secondary schooling. Mobility was calculated from the end of the first year to the final term in the third year. Mobility from the third year groups to the fourth was ignored as such mobility may be for rather different reasons than mobility elsewhere in the school; e.g. staying on for an additional voluntary year of schooling.

The figures indicate more upward mobility than downward. There are two available explanations for this; (a) that Headmasters are reluctant to move a pupil downstream; and (b) that the partially biased sample for the Questionnaire failed to question downstream pupils. If more downstream pupils tend to be absent from school fewer have completed the Questionnaire that was set in the schools. There is no evidence of large scale mobility and an annual mobility figure of some eleven percent does not invalidate the findings for 'Streaming and the Allocation of Teachers'. Only 10.3% of pupils, who were in the 'C' and 'D' streams in the first year, are now in the 'A' and 'B' streams, while some 9.1% of ex 'A' and 'B' stream are now 'C' or 'D'.

A further indication of the permanency of streaming and its continuence into the staying on and enjoying 'good' teaching in small groups is supplied by Question 5 of the questionnaire quoted here but dealt with thoroughly in Section 2 of the Study. Of five hundred and eighty six pupils from the third year sixty seven and a half percent of the 'A' and 'B' streams indicated that they wished to stay at school for a fifth year. This compared with 27.7% of the 'C' and 'D' forms. Of five hundred and fifty five fourth year pupils the figures were 79.2% compared with 18.7% (the 4th year figures were based on their 3rd year groupings (see section 5.5.)).

#### 4.5. SUMMARY OF SECTION 1.

##### ALLOCATION OF TEACHERS - A

###### Schools Collectively.

1. In the first three years the data show clearly that there is a strong association between higher streams and the better qualified teachers in the five subjects examined. Whether analysing the three criteria, (i.e. Head of Subject, Specially Qualified and Holder of Posts of Responsibility), individually or collectively, the higher streams are seen to receive a better allocation of teachers.

In the fourth year, whilst Mathematics, English and Science are in keeping with the results above almost all the fourth year History and Geography is taught by the Head of the Subject.

2. When the analysis dichotomizes the schools into compulsory school age and above, there is evidence that there is a totally disproportionate amount of Head of Subject and Specially Qualified teacher time devoted to the latter.

If one studies the allocation of teachers to the sixth, fifth and the 'C' and 'D' streams of the fourth year, one is aware of a distinctly different allocation of teachers in the final year of schooling for the early leavers.

###### Schools Individually.

3. There are significant differences in the allocation of Heads of Subjects and Specially Qualified teachers to the upper and low-

er streams in all the sub-samples. The direction is as predicted.

The null hypothesis cannot be fully rejected for the criterion of extra payment. Two schools do not show significant differences in their allocation of such teachers. (i.e. Holders of Posts of Responsibility).

4. When the three criteria are combined and analysed by means of a subjective scoring system, the resultant analysis of variance supports the prediction in that five schools show significant differences in the required direction in their allocation of teachers to streams. In the other two schools, the same trend is evident.

A rough ordering of quality of teaching in each subject gives the following in descending order of merit: History - Geography - Science - English - Mathematics.

#### ALLOCATION OF TEACHERS AS A PUPIL-TEACHER RATIO - B

5. The data show that the teacher to pupil ratio gradually improves as one moves up the school with the fifth and sixth years enjoying a very favourable ratio compared with other years. While the bottom stream in each year tends to be smaller than the other streams, there is no evidence to suggest that teacher pupil ratio in remedial forms is close to that of the fifth and sixth forms.

6. Due to a few pupils being offered a choice of subjects, the upper school groupings are seen to be minute in certain cases; a teacher to pupil ratio of 1 : 1 being far from unique.

MOBILITY - C

7. The mobility sample of 1030 pupils did not present a picture of mobility, to an extent, that would invalidate the findings of the above.

COMPULSORY SCHOOL AGE v 5th and 6th FORMS

Advantages enjoyed by the latter group constitute stream related inequalities since very few lower stream pupils remain at school beyond the 4th year.

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CHAPTER FIVE

DESIGN OF SECTION 2 OF THE STUDY.

- THE CASE FOR THE LOWER STREAMS.

This section of the study attempts to determine whether there are grounds for equality, or better, in the allocation of teachers to the lower streams.

Four Research Hypotheses are postulated:

that the upper streams ('A' and 'B' streams) compared with the lower streams ('C' and 'D' streams)

1. receive a greater degree of Secondary Education;
2. present a less difficult teaching situation;
3. enjoy greater opportunities within the School;
4. enjoy better opportunities educationally as a result of their home backgrounds.

#### 5.1. CRITERIA.

The criteria used for testing the four hypotheses will be:

1. early leaving - school attendance - regularity of homework - size of class groups.
2. irregular attendance - attitudes to school values - the effects of mobility - conflict within the pupil role-set.
3. school games - school concerts - pupil's work on show - helping at school functions - membership of school clubs.
4. home backgrounds.

## DEGREE OF SECONDARY EDUCATION.

All other things being equal it is logical that the group of pupils receiving formal education for the shorter period of time need to be taught by teachers of as high a calibre as those pupils who extend their period of formal education. If a pupil leaves school at the age of fifteen he quite obviously has a shorter educational life, within the above definition, than a pupil who remains at school for a fifth or sixth year course. A shorter educational life is also apparent if a pupil fails to attend school regularly. Thirdly, should the lower streams receive homework less frequently than the higher streams then the gap between the progress of the two groups will be increased more rapidly than is strictly necessary. Little homework also means that lesson time is spent in completing exercises or writing essays etc. rather than actually being taught. There is therefore a reduction beyond the time-tabled periods in the teaching time for this group. The fourth criterion is the size of teaching groups as discussed in Section 1 of the Study.

## THE TEACHING SITUATION.

If pupils in a group are attending school irregularly the difficulty involved in teaching that group is increased unless the method of teaching is specially designed to cope with such

situations. Programmed texts and other individual progress methods can be discounted to a large extent as they are in their infancy in this country and are certainly only at the introductory stage in any of the schools in this County Borough.

Our second criterion - Attitudes to School - is examined not to determine the degree of School Orientation of the two groups as such but whether there are comparative differences. The assumption being made is that a pro-school group of pupils will be easier to teach than a group which, by comparison, is anti-school.

The attitudes of the pupils involved in mobility (Chapter 4.4.) will be tested separately and comparisons made between 'Improvers' and 'Deteriorators' to see whether the lower streams become increasingly more anti-school as their high achievement pupils move upstream and the pupils with low achievement move downstream. If the differences are found to be in the direction predicted, whether the reason be that downward mobility creates the anti-attitude to school or whether pupils with poor attitudes tend to move downstream, teaching of the lower streams requires the experienced teacher even more so.

#### The pupil role-set.

Within this section group loyalties will be examined as well as a pupil's assessment of why he thinks he is in a particular stream. The evidence will be combined with the 'attitude' findings and 'de-

privation of opportunity'. If the lower streams constitute a status deprived group there is a greater chance that the internal group norms of behaviour are not consistent with those advocated by the school.

#### OPPORTUNITY WITHIN THE SCHOOL.

There are many ways in which teachers' time is consumed, outside of the normal teaching situation, in their involvement with pupils. Activities, by and large, should be open to all pupils of particular age sets, if one believes in the equality of opportunity,

Five extra curricular aspects of school life will be analysed to see if the opportunities are stream related; they are Sport, School Concerts, Work on Display, Helping at School Functions, and Membership of School Clubs. If these five fields are the province of the upper streams then teachers' time outside of the timetable is upper stream orientated. Secondly, if this is the situation, it increases the case for better treatment elsewhere (Section 1), and quashes any suggestion of an evening out process when one studies school life as a whole.

The five criteria were selected because these aspects of school life are common to all schools, although some schools appear to have very few clubs of which one can be a member. The first three criteria, one could say, are dealing with activities that involve

ability and the upper streams may possess more pupils with sporting ability, pupils who are talented on the stage and who produce work fit to put on show in the school. With the terrific increase in these three fields over the last few years, if only the talented are open to selection, then the whole philosophy behind the activities needs to be re-thought. In games in particular, the variety of inter-school competitions is so extensive that representation need no longer be the privilege of the chosen few. Being asked to help on occasions when the school is open to a section of the public need not be restricted to a particular set because different abilities are needed be it for receiving guests or washing the dishes.

#### OTHER INEQUALITIES.

The intended study, of inequality of educational opportunity as a result of home backgrounds, could not be carried out. Direct information was not available for the reasons given in Chapter 5.3. para 3. Therefore one is restricted to writings in this field. The comparative figures for Family Size were to be obtained and the Father's Occupation. Working class children, research has shown (see Literature Relevant to the Study) are less likely to achieve the same educational results as pupils with the same I.Q.'s from Middle Class families. If significantly more working class children are to be found in the lower streams than the upper streams then this would enhance the argument for better teachers in

this section of the schools.

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## 5.2. THE SCHOOLS.

This section was to involve the nine schools described above. No information was requested from the school that functioned in three separate buildings. School H had only one stream in its fourth year and therefore no figures were offered for inter fourth year comparisons (Chapter 3.2.).

## 5.3. INFORMATION REQUESTED.

### ATTENDANCE.

Permission was requested from four of the headmasters to consult the attendance registers in order to extract attendance figures for the two terms, Autumn and Spring, in the school year 1967-68. The number of schools was confined to four as it was considered that if a regular and similar pattern was seen to exist in the schools analysed sufficient evidence would be available for conclusions to be drawn.

### THE QUESTIONNAIRE.

The schools had been most cooperative in providing the various information requested for Section 1 and therefore the only

feasible way of acquiring the information for Section 22, without imposing too much on the good nature of the headmasters, was to set one questionnaire which would provide the data necessary. The actual design of the Questionnaire is dealt with in Chapter Six.

The Questionnaire was restricted in its content. Questions referring to family size and father's occupation were not included in order to make the Questionnaire acceptable to the schools. The other attempt to arrive at this information did not succeed. The Youth Employment Service possesses the information in question but was not prepared to allow access to it because of its confidential nature.

The decision was taken to set the Questionnaire to all the pupils in the third and fourth forms of the schools, this resulted in the return of 1,140 questionnaires from these schools. In some respects it would have been better to have set the Questionnaire to a random sample of pupils in years one to four but a random sample could not have been achieved working within the limitations of the situation. Furthermore since so much information was to be acquired by one set of questions, many questions that were included would have been unsuitable for first and second year pupils. It was felt that to exclude the fourth year, that is the final year of compulsory education, would have deprived the study of useful data. The final decision to question the third year rather than the second year was based on the questions being more suitable for

the older pupils and also that a comparison was being planned with a number of Grammar Schools (see Aims of the Study - Section 3). To compare the fourth year Grammar School pupils with the fourth year Secondary Modern School pupils would place severe limitations on the value of the conclusions drawn from the findings as the fourth year of the Grammar School is not a 'leaving' year. Therefore it was reasoned that third year comparisons would be of more value than second year pupils who would have spent less than two years in the different types of schools.

The Questionnaire was to be set to pupils of the eight schools but was eventually answered by six schools only. Of the other two schools, one headmaster would give any information that he could provided it did not involve active participation by the pupils or by any member of staff. This condition excluded the completion of the Questionnaire. The headmaster was most helpful in every other way. The other school, which also failed to supply group sizes requested for Section 1 of the Study, did not reply to the last two communications. The system of requesting information was to write to the headmasters of the schools enclosing details of the request and, in the case of the Questionnaire, a specimen copy. If no reply was received, a second request was made assuming that the first had failed to reach the school or had been overlooked. When an affirmative reply was received the

school was visited. Initial contact in each stage was made by letter so that the individual headmaster could decide in his own time whether or not to cooperate.

#### 5.4. PROCESSING OF THE DATA.

Data has been extracted from the information received in order to test the hypotheses stated on page 85 para 2. Tables 23 - 51, Appendix Two, have been arranged, as far as possible, in the same order as the criteria for examining the above (P 85. para 3). The Operational hypothesis for each sub-section, where applicable, is stated at the head of the table. All tables are again based on the first four streams in each year and each school is examined individually in keeping with Section 1 of the Study. The fourth year questionnaires have been grouped according to the form a pupil was in at the end of his third year, therefore 4A means ex 3A even if a pupil is now in 4B (see Ch. 5.5. para 2).

#### 5.5. RATIONALE.

The tables show the figures for each school and also for the schools collectively where necessary on the grounds that a school is in many respects an individual unit and that a general picture over the whole six schools could give a false picture if one of the sub-samples was heavily biased. In the same way figures for the fourth year are presented separately so that one can see if

attitudes have become more diverse between the ability groups. In addition answers to questions about one's future should have become more concrete.

The decision to regroup the fourth year questionnaires according to the form a pupil was in during his third year at school was based on the following reasoning:

1. since there is little evidence of mobility in the first three years, to group in this way enables one to conclude that these are the views and opportunities, in the main, of pupils who have been in particular streams. There is a greater chance of such a statement being in error if the actual 4th year groups are taken;
2. the main theme being allocation of teachers to streams, one aspect is to ascertain whence came the pupils who tend to be taught in small groups and by highly qualified teachers in the fifth and sixth forms;
3. Question 4 on the Questionnaire was answered in a number of ways which made certainty of grouping difficult. Pupils in one school, for example, are known as 4N (N for Newsom) if they are leaving school but are taught in 4A, 4B and 4C groups in the basic subjects. Therefore if a pupil put 4N as his present form it meant very little for our purposes;
4. if the regrouping has any effect at all it will be to

make the findings conservative, that is, the tendency will be not to reject the Null Hypothesis and so one will be understating the findings rather than overstating.

To deal with the rationale of each table (Tables 23 - 51) would be repetitious in view of Appendix Two and the information and notes presented with each table.

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CHAPTER SIX

DESIGN OF THE QUESTIONNAIRE.

The Questionnaire was designed to obtain information in order to analyse Section 2 of the Study and to test the hypotheses of that section.

6.1. THE QUESTIONNAIRE.

Here are a number of questions about school. Please answer them honestly. Do NOT put your name on the paper.

(1) MOBILITY.

1. Which form were you in in the first year?
2. Which form were you in in the second year?
3. Which form were you in in the third year?
4. Which form are you in now?

All the following questions are answered by one of the following: YES, NO, or DON'T KNOW. Please answer these questions by putting a tick in the column under the answer you wish to give.

If you agree with the sentence put a tick under YES.

If you disagree with the sentence put a tick under NO.

If you are not sure put a tick under DON'T KNOW.

(2) ATTITUDE TO CLASS WORK

	YES	NO	DON'T KNOW
*5. If my work is not so good I try to improve it.			
*6. I bother if the teacher finds fault with my work.			
*7. I look down on pupils who behave themselves.			
*8. I like to be in a class that works well.			
*9. Pupils should do as little work as possible.			
*10. Most school work is uninteresting.			

(3) ATTACHMENT TO SCHOOL - Mainly Desire to Leave.

YES NO DON'T  
KNOW.

- \*11. I often feel like staying away from school.
- \*12. I sometimes stay away from school without good reason.
- \*13. I should like to stay at school for a fifth year.
- \*14. I should like to leave school as soon as possible.
- \*15. I am pleased if the school does well at something.
- \*16. The school tries to help me to get on.

(4) ATTITUDE TO THE MINOR DISCIPLINES OF SCHOOL.

- \*17. I like to wear a school uniform.
- \*18. All pupils should wear the school uniform.
- \*19. Pupils should come to school in what they want within reason.
- \*20. School rules are often ridiculous.
- \*21. Most school rules are necessary.
- \*22. The prefect system should come to an end.

HOMEWORK.

- \*23. I think schools should set homework.
- \*23. I think homework is a waste of time.

(5) DESIRE TO PARTICIPATE IN EXTRA CURRICULAR ACTIVITIES.

- 25. If good enough, would you like to play for a school team at games?

26. If good enough, would you like to take part in a school play or concert?

27. Would you help at a parents' night or when the school is open to the public if asked to do so?

(6) PARTICIPATION.

28. Have you ever taken part in a school play or concert?

29. Have you ever been asked to help at a parents' night or when the school was open to the public?

30. Has any of your work been put on show in your present school?

\*\*31. I play for a school team (underline the answer you wish to give) never/sometimes/often

(7) LIE CHECK ITEMS.

32. I enjoy interesting lessons.

33. I do work that I enjoy.

HOMEWORK (additional questions).

\*\*34. I do homework (underline the answer you wish to give) never/sometimes/often

35. I usually do my homework if it is set.

36. I should like more homework than I am set.

ONE'S FORM.

37. Do you like being in your present form?

38. Would you do better in another form?

\*\*\*39. Why are you in your present form? (just say briefly what you think is the main reason).

OTHER QUESTIONS.

40. I am staying at school for a fifth year.

41. Have you ever received a school prize?

42. Are you a member of any school club?

43. I think prize givings should be stopped.

The following points should be noted about the above questionnaire:

- a. The items were not in the above order nor were the sectional headings or asterisks included. The above order is for ease of reference in the writing-up process.
- b. Questions marked with a double asterisk were placed at the end as the range of answers was not the normal yes, no or don't know.
- c. Groups 2, 3 and 4 were scored to test the particular attitudes expressed by their titles.
- d. Groups 5 and 6 were also scored to test general participation and desire to participate. Individual analysis of questions 28 - 31 will be included.
- e. The questions marked with a single asterisk formed the eighteen question 'School Orientation Test'.

The reasoning behind the questions other than those contained in groups 2 - 7 inclusive is as follows:

Qu. 1 - 4.

To obtain the mobility figures for Table 22 Section 1 and also to compare attitudes to school of pupils who had upward mobility as opposed to downward mobility.

Qu. 34 - 36.

Qu. 34 states how often homework is done whereas Qu. 35 will help to substantiate whether homework is set regularly or not. Qu. 36 should show whether supply and demand are in equilibrium. One could have set the question, 'I am set homework..... never/sometimes/often' but it would have probably been vetoed by the schools.

Qu. 37 - 39.

The questions are to touch on the subject of group loyalty and conformity whilst ascertaining whether lower stream pupils feel that they would be better elsewhere. Qu. 39 (marked with a treble asterisk) is the only open ended question. It is set to find out pupils' views of their own placement.

Qu. 40.

Tables 7 - 10 Section 1 quote figures for allocation of teachers to the fifth and sixth forms. This question will show whence these pupils tend to come.

Qu. 41.

To see if there are stream related differences in the distribution.

Qu. 42.

This is an aspect of teachers' time but has not been included in group 6 as in some schools there are no clubs.

GENERAL DESIGN OF THE QUESTIONNAIRE.

Many questions were prepared in the original draft of the questionnaire and were set to groups of second and fifth year pupils in one of the schools. In addition the advice was sought of some forty teachers including a number of head teachers as to the content and wording of the questions. As a result of the 'trial run' and advice the content and wording of a number of questions was altered. A sample of such questions is as follows:

1. Have you ever played truant?.....Excluded - too strong and puts the pupil on the defensive.
2. Do you intend to go to a College of Further Education when you leave school?.....Excluded - not understood by some lower stream pupils.
3. Have you ever been on a school holiday?.....Excluded - not a school choice alone but also a parental decision.
4. I usually bring a pen to school.....Excluded - may indicate attitude of pupil to school but also involves school discipline.
5. I am a prefect.....Excluded - only in the pilot school were fourth form prefects to be found.

6. All questions about the family excluded on the advice received.

Only three choices were given in answer to each question instead of five. If one had the five headings - Strongly agree - Agree - Don't know - Disagree - Strongly disagree - it is doubtful whether some of the pupils' answers, especially the lower streams, would have been reliable. In answer to the question, 'Why are you in your present form?' one of the replies was, 'Cos am daf' and another, 'Am not gud enuf.'. To ask pupils of this calibre to make some 42 decisions with 5 possibilities each would have been expecting too much.

## 6.2. DESIGN OF THE SCHOOL ORIENTATION TEST.

### Thurstone or Likert-type Scale?

A Likert-type test was decided upon. The most feasible alternative was a Thurstone scale but was not used for the following reasons:

(a) To gather 'several hundred statements and submit them to between fifty and three hundred judges' (33. P 307) would have involved a considerable amount of time only justified if the advantages of such scales are far superior to the Likert-type scale.

(b) Furthermore 'in the Thurstone method, the necessity of agreement between judges tends to limit items to content that is

obviously related to the attitude in question; in the Likert method, any item that is found empirically to be consistent with the total score can be included.' (33.P 315).

(c) 'Likert scales are certainly less laborious and this together with the discovery that Likert scales correlate well with Thurstone scales' (52. P 133) has made it more popular.

(d) 'The Likert scales tend to perform very well when it is concerned with a reliable rough ordering of people with regard to a particular attitude.' (52. P 141).

(e) R. Jolleys (34) expressed doubts of a Thurstone-type scale. One doubt was concerned with the 'feasibility of drawing up scales that were suitable for the full range of ability - it was doubtful whether the lower quartile could complete them properly.' Also that 'dull children had difficulty in understanding some items and tended to tick any doubtful ones.'

(f) Jahoda goes on to say (33.P 315) that, 'The Likert-type does not claim to be more than an ordinal scale.....it makes possible the ranking of individuals in terms of the favourableness of their attitudes toward a given object.' This of course is sufficient for its present purpose.

(g) Likert suffers from 'Lack of reproducibility.' (52.P 140) although Thurstone-type scales do as well to a lesser extent according to Jahoda, this means that the same total score can be for markedly different reasons. Despite this theoretical disadvantage,

pragmatically the scores on the Likert-type questionnaires are satisfactory in their rough ordering of respondents on the attitude in question.

(h) 'A survey by Edwards (1957) of the evidence from a number of studies bore out' that Likert-type method of attitude assessment was consistently more reliable than the Thurstone and Ghave method. (22. P 25).

#### Internal Consistency Check.

The items assembled were all expressing a measure of conformity towards the values approved by the school system and the teachers. Unsuitable questions were not included in order to discard them (22 P 26). Each question contained a continuum with two extremes, agree and disagree, and a central area of uncertainty. The opinion in keeping with school values was scored 3, the 'uncertain' response scored 2, and the opinion opposed to school values scored 1.

The list of items was administered to the second and fifth forms of one of the schools and the individual scores of each pupil listed. The top 25% were then extracted as well as the bottom 25%. Total scores for each question for these two groups were then calculated and, as a result, a number of items, that did not achieve a sufficient difference in total scores, were excluded. This was a rough guide as the years used were not representative of the third and

fourth forms to whom the questionnaire was to be set.

When the final questionnaire was run off, it was set to the first school. The highest and lowest scoring 25% of the pupils (42 in each group) were taken and their responses to each item tabulated. Total scores for each group for each question were compared. If the questionnaire is internally consistent the total score on any question for the bottom group should never exceed the top group (22. P 25) (33. P 314). No item showing less than a twenty point (15%) difference was retained in the final 'School Orientation Test'.

'I usually bring a pen to school.' and

'I think school prize givings should be stopped.' for example, did not pass this internal consistency check. A further check was carried out (see Table 71 Appendix Four) by applying the Chi-square test to each question. There had to be a less than one in twenty (.05 level) chance of such differences being the result of chance for the question to be retained. In order to test the directional hypothesis the 'Don't know' responses have been combined with the smaller of the Yes/No columns. This was also necessary in many cases for the expected frequency was less than five.

#### Other Conditions Fulfilled.

The eighteen questions in the 'School Orientation Test' express attitude to school in three ways which can be broadly view-

ed as 'Discipline', 'School Work' and 'Desire to Leave'. The questions in the particular divisions are :

Discipline - Qu. 7-17-18-20-21-22-19.

School Work - Qu. 5-6-8-9-23-24.

Desire to Leave - Qu. 10-11-12-13-14.

Consequently 'we have roughly equal numbers of items dealing with each main aspect of the attitude.' (52). There are 'equal numbers of favourable and unfavourable statements.' (22. P 23). In addition, each question expresses an opinion and is not merely a statement that is right or wrong. The wording of the questions has been checked so that the statements have been couched in language that the pupils understand.

#### The Sub-groups.

The sub-groups i.e. group 2 - Attitude to class work, group 3 - Attachment to school and desire to leave, group 4 - Attitude to the minor disciplines of school, contain sixteen of the eighteen 'School Orientation Test' items but have been grouped in this way so that the results can be analysed in greater detail. Items fifteen and sixteen (marked / in the questionnaire) have been included as not only relevant but to maintain equal pro and anti school statements within each group. There are only six questions within each group but according to Jahoda (33) the 'number of items is arbitrary, but

is sometimes very small.'.

Since an examination is being made as to whether the lower streams constitute a more difficult teaching situation, the sub-group, 'Attitude to class work', is of direct relevance possibly more so than the full 'School Orientation Test'. The sub-section, 'Attachment to School', indicates one's desire, comparatively speaking, to be rid of compulsory education. If one is prepared to accept the assumption, that it is easier to teach a class of pupils who do not wish to leave than a class of those who do, the findings from this sub-group will be relevant to the enquiry.

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CHAPTER SEVEN

RESULTS OF SECTION 2 OF THE STUDY.

When figures are quoted for the schools combined the sample is an incidental sample (27.P 180), in that two schools are excluded for the reasons stated in para 1 P 92. There is no reason why this limitation should invalidate the findings since the intake for any of the schools is basically constituted in the same way within the Borough. There is no evidence to suggest that the intakes of the other schools are in any way socially different from the six included. If one can regard the County Borough as a circle, the catchment areas are, in the main, sectors of this circle and, as far as one can judge, each containing the same variety of social backgrounds and environments.

The figures extracted from the questionnaires constitute a 'biased sample' (27.P 178) within each school. The reason for this is that a number of questionnaires returned was usually slightly below the number of pupils on the nominal roll for the third and fourth years. This discrepancy is due to absences at the time of completion. The pupil is usually absent either because he is ill or because he is truanting. There is no reason why one should assume that pupils in the upper streams who are ill are more anti-school than similar pupils in the lower streams. At the same time there is no reason to assume that the upper stream pupils who are ill have fewer 'opportunities' than the lower stream pupils. Therefore, on this score, the absentees should not in fact reduce the significance

of the findings in favour of the upper streams. Pupils who are absent through truanting are certainly not to be found more frequently in the upper rather than the lower streams (answers to Qu. 12 will support this statement). Therefore if one is prepared to associate truancy with anti-school attitude there is, once again, no evidence why a null hypothesis should be rejected in error. The biased sample, if effective, will tend to make the results conservative and increase the possibility of a 'Type II error' (60.P 9), i.e. to accept  $H_0$ , the null hypothesis, when in fact it is false.

#### 7.1. DEGREE OF SECONDARY EDUCATION.

##### EARLY LEAVING.

Table 23 shows that in each school the vast majority of fifth year pupils will be ex 3A and 3B. The difference between the affirmative groups in the upper and lower streams is greater in each case in the fourth year, probably due to decisions being firmer by this time and few pupils being in the 'Don't know' category. The 'A' and 'B' affirmative percentage (79.2) and the 'C' and 'D' negative percentages (73.4) are convincing evidence that the majority of lower stream pupils' education, as defined, will not continue beyond the fourth year of the Secondary School.

##### ATTENDANCE.

In Table 24 the first four years attendances are analysed for

two terms in four schools, that is thirty two groups in all. Twenty one of these groups show significant differences beyond the .05 level between the 'A' and 'B' streams compared with the 'C' and 'D' streams, when the Chi-square test is applied to the data. Of the remaining eleven, a further two groups achieve the stated level of significance if the streams are dichotomized 'A' v 'B' + 'C' + 'D'. Applying the more powerful - less chance of a Type II error - Mann-Whitney U Test (for large samples), in three of the remaining nine groups the higher streams received higher scores (stochastically) than the lower streams. The six groups for which the null hypothesis cannot be rejected all consist of first and second year pupils. It is possible that first and second year pupils who have poor attendance records tend to move downstream but evidence was not collected to substantiate this possibility.

#### REGULARITY OF HOMEWORK.

In the six third year and five fourth year groups significant differences are in evidence in all cases between the frequency of doing homework in the 'A' and 'B' forms compared with the 'C' and 'D' forms (Table 25). These highly significant results could be due to pupils not doing homework that is set but Table 26 shows that in the third year groups the null hypothesis, 'There is no difference between the number, of higher stream and lower stream pupils, who fail to do homework set', cannot be rejected. This substantiates the

conclusion that the lower streams are deprived of homework opportunities and therefore in this sense receive a shorter educational life. In the fourth year groups, whilst the alternative hypothesis is accepted in two of the five groups, (Schools A and B), and for the whole sample ( $X^2 = 12.38, P < .001$ ), a closer examination of the relative percentages shows the following. In school A, five percent of the lower stream did homework often (Table 25) whilst 58% claimed to do homework if set (Table 26). For school B the figures are 15% and 65% respectively. A further indication of the deprivation of the lower streams with respect to homework is seen in Table 27 (Schools combined). One in five of the lower stream third year pupils expressed a desire for more homework as opposed to one in twenty three of the higher stream third year pupils. This is not to say that the former show a greater desire for homework, it is probably that the majority of the latter already receive sufficient homework. The fourth year situation follows the same trend with ratios of approximately one to six and one to fourteen desiring more homework in the lower and higher streams respectively.

#### SIZE OF CLASSES.

The figures expressed in Tables 19 - 21 (Results of Section 1 of the Study) present evidence of a very favourable allocation of teacher time to the pupils who remain at school for education beyond

the fourth year. The figures of Table 23 gave a clear picture of where the fifth forms in 1968 - 69 could have come from. Care must be taken to state the limitations in drawing conclusions here. In that the percentages staying on at school are for the 1968 - 69 whereas the size of groups are for the previous years (1966 -67, 1967 -68). One can only say that, unless there has been a complete change of pattern in either of the two variables, the smaller groupings are not enjoyed by the lower stream pupils.

## 7.2. THE TEACHING SITUATION.

### IRREGULAR ATTENDANCE.

The attendance figures for four schools (Table 24) have already been commented on. Absence reduces the size of a class but, other than this, spasmodic attendance creates a more difficult teaching situation unless the methodology in the various subjects is based on individual tuition, e.g. programmed texts. If such methodology was widespread in the schools being investigated there would be no need to stream at all but such is not the case. Consequently there is evidence to support the statement that more pupils in the lower streams will be irregular attenders and thus, all other things being equal, will create an additional problem for the class teacher.

Table 28 looks a little deeper into irregular attendance. It suggests (H1) that truancy is more prevalent in the 'C' and 'D' streams.

In the fourth years, only School F fails to reject the null hypothesis though the trend ( $P < .1$ ) is in the same direction with truancy figures being 15% for the 'A' and 'B' streams and 31% for the 'C' and 'D' streams. In the third year groups one can accept the alternative hypothesis for Schools A, B and H. The other three schools show the requisite trend and, should the figures for schools C, D and F be combined and analysed collectively with  $N = 327$  in the Chi-square test, the resultant value ( $X^2 = 5.202$ ) is sufficiently large for significance at the .025 level.

#### ATTITUDE TO SCHOOL VALUES.

Table 29 shows the data compiled from the 'School Orientation Test'. The replies have been scored three for a pro-school response, two for a neutral response, and one for an anti-school response. The streams have been dichotomized 'A' & 'B' v 'C' & 'D'. The median for all scores in both samples was calculated and the scores dichotomized those scores which exceed the median and those which do not. In this way the scores falling at the median are placed in the second group (60.P 112).

The results of the application of the median test can best be seen from the Summary Table (Table 34). One can accept the hypothesis ( $H_1$ ) that, 'the median score of the 'A' & 'B' streams is higher than that of the 'C' & 'D' streams' at  $P < .01$  in all the fourth year groups. In the third year groups, Schools A and F do not show differ-

ences significant at the required level ( $P < .05$ ) when applying the Median Test under the above conditions. If the same information for School A is processed in order to apply the Mann-Whitney U test for large samples,  $H_1$  'A' and 'B' streams "score" higher (stochastically) on school orientation than the 'C' stream can be accepted ( $P < .0048$ ). School F, if the streams are dichotomized - 'A' v 'B' + 'C' + 'D', shows results which are significant at the .05 level. The whole sample is highly significant.

Referring to Tables 15, 16, 17 and 18, School F in all four fails to reject the null hypotheses if the upper streams are compared with the lower streams. In Table 15, the stated significance level was achieved by contrasting 'A' with 'B', 'C' and 'D' combined. In view of the above, information was examined to see if there was any correlation between allocation of teachers and the attitudes of pupils towards school. The third year 'B' stream showed a lower mean score than any other third year second stream group but, on perusal of the allocation of teachers to this class, the allocation, judged by the criteria of Section 1 of the Study, was extremely favourable. A further check was carried out. School H was not used for Section 1 of the Study because it was partly unstreamed but information was compiled for the third year group's allocation of teachers (i.e. pupils who answered the questionnaire). The streams had received almost perfect equality in

the allocation of teachers in all the three categories used for differentiation of teachers; no significant differences in allocation were evident. Despite this allocation of teachers the 'School Orientation Test' showed significant differences at the .01 level.

The study did not aim to establish that the attitudes were the result of teacher allocation. The aim is to see if there is evidence that attitudes are more anti-school standards in the lower streams and therefore create a more difficult situation in which to teach.

In Table 30 the small subsection of questions relating specifically to the classroom situation, rather than to the wider items of the School Orientation Test, have been scored as previously. Once again, only two schools fail to reject the null hypothesis and accept the alternative hypothesis that, 'the median score of the higher streams is higher than that of the lower streams'. Applying the Mann-Whitney U Test, to the data for School H, one can accept that the 'bulk' of population 'A' & 'B' (streams) is higher (In attitude to Class Work) than the bulk of population 'C'. (School H has only three streams in the third year). School F does not show differences that are significant. The mean scores of stream A (13.8) and stream B (13.7) are, in fact, lower than the mean scores of any form in the 'A', 'B' or 'C' streams of either

the third or the fourth year, of any other school in the investigation.

In the 'Attachment to School' group of questions (Table 31), there are highly significant differences ( $P < .0005$ ) in all the fourth year groups. In the third year groups, School H has only three streams and a significant difference in the stated direction is in evidence if the 'A' stream is compared with the 'B' + 'C' streams ( $P < .05$ ). The value of Chi-square for School F, ( $X^2 = .3282$ ), is not sufficiently high to reject the null hypothesis. The insignificance of School F is not due to the high scores of the 'C' and 'D' streams but to the very low scores of the upper streams.

To summarize the findings of the 'School Orientation Test', 'Attitude to Class Work' and 'Attachment to School' of the eleven groups of pupils, the groups present convincing evidence of differences between the two populations, high stream and low stream pupils, in the predicted direction. Whether one can conclude that hence the lower streams constitute a more difficult teaching problem depends on the acceptability of certain assumptions:

- (a) is it reasonable to assume that the degree to which a pupil's views conform to those of the school and its staff will also reflect his general acceptance of the teacher-pupil situation?
- (b) is it 'easier' to teach pupils who wish to be in a class that works well?

(c) is it 'easier' to teach pupils who wish to be at school rather than those who would like to leave?

If one is prepared to assume positive answers to these questions, then the evidence presented enables one to conclude that the upper streams are less in need of the 'good' teacher than the lower streams. One should state that the above is defining 'easier' from a discipline stand-point and ignoring lesson content.

In Table 32 one sees the figures in answer to one question extracted from the 'School Orientation Test', i.e. 'I should like to leave school as soon as possible?'. Highly significant differences exist in all the third year groups ( $P < .005$ ) except School H, which is the school that is gradually turning to 'unstreamed'. All the fourth year groups achieve significance at the .05 level or beyond.

Attitudes to the minor disciplines of school, (Table 33), that is uniform, rules and prefects, whilst achieving the predicted level of significant differences in certain schools, do not present a clear pattern of convincing evidence from which conclusions could be drawn of value to the study. In three of the groups the trend is not even in the predicted direction.

#### DETERIORATORS v IMPROVERS.

Tables 35 - 40 contain data and test results based on the two

hundred and twenty nine pupils who were involved in mobility. In Tables 35 - 37, the two populations, the improvers (moved upstream) and deteriorators (moved downstream), have been compared. The three bases of comparison used are the 'School Orientation Test', 'Attitudes to Class Work', and 'Attachment to School'. In the first instance, schools have been analysed collectively. The data have been tested by the Mann-Whitney U Test for large samples, one of the most powerful non-parametric tests and useful when one wishes to avoid the assumptions of the 'F' test. In both the third year and the fourth year analyses for the three groups, highly significant differences are shown, ( $P < .0005$  in all cases). The alternative hypothesis can be accepted, that is 'that the pupils promoted are (stochastically) higher in

1. School orientation;
2. Attitudes to class work;
3. Attachment to school;

than pupils who

are demoted'. If one accepts the assumptions stated in para. 2 P.118, then the evidence supports the prediction that the lower streams will present a more difficult teaching group than the higher streams. The probability of an 'Improver' scoring higher than a 'Deteriorator' is more than  $\frac{1}{2}$ ; i.e. the 'bulk' of population one (Improvers) is higher than the bulk of population two (Deteriorators). Hence with promotions and demotions there is less than a fifty-fifty chance that a

class losing a pupil (upstream) will receive a pupil (downstream) who has as favourable an attitude to the three categories of school values.

Tables 38 - 40 show the 'break down' for the collective information into that for individual schools. The testing is by the Mann-Whitney U Test. The branch of the test has been determined by the size of  $n_2$ . One could not include the mobility figures for School C fourth year because many of the pupils had stated their House Name in reply to, 'Which form were you in in the 1st, 2nd and 3rd year?' questions. The teacher taking the class had obviously indicated that this was to be done because this error in completion of the questionnaire was made by the whole of one stream. In School C there is streaming but the 'House' spirit is cultivated to the extent that pupils are often referred to in terms of year and House rather than by form. With the sample sizes being small in the individual schools, it is to be expected that the significance level of .05 will not be achieved in all cases. The numbers involved were occasionally as small as two pupils in the 'Demotion' group.

#### THE PUPIL ROLE-SET.

Table 41 shows inconclusive evidence regarding attachment to forms in the individual schools. The collective samples are highly significant ( $P < .0005$ ). What is perhaps more to the point is that,

of the lower stream pupils, 69% of the third year and 76% of the fourth year are happy in their present streams. This is despite the fact that only 39% of the third year sample thought that they would not do better in another form (Table 42). There would therefore appear to be a high degree of group loyalty, or feeling for the form. The group loyalty exists even though many low stream pupils regard their forms as a low status group. Fourth form pupils' answers to Qu. 39, 'Why are you in your present form?', were mainly answered in terms of desire to stay at school for a 5th year or not. Thus a lower status is in evidence here. The third year pupils' replies were rather more to the point:

'Because were thick.'	'Because I am a dunce.'
'Because of trouble with the teacher.'	'I get in bother.'
'Dont work hardernoth.'	'for being thick in the head.'
'behavey is bad.'	'Lazy.'
'hate school.'	'for nicking off.'
'I am daft in class.'	'am not gud enuf.'
'not shur of eneything.'	'for fighting that sloppy....'

This shows that a situation arises where the low streams see themselves as inferior, are deprived of the best teachers, deprived of opportunity within the school (see results of Section 2 of the Study - opportunity within the school), and are probably from working class

homes (see Literature Relevant to the Study).

From the attitudes scores, it is seen that these pupils are less school orientated than the upper streams. The lower streams loyalty figures can therefore be interpreted in the light of the evidence from the 'Literature Relevant to the Study' section. Lack of status within the school system can have helped to create an inner loyalty within the primary groups of the lower streams. Within these primary groups prestige may be conferred on individuals for adherence to norms of behaviour which are in conflict with school values.

### 7.3. OPPORTUNITIES WITHIN THE SCHOOL.

Tables 43 - 47 present the details relating to opportunities within the five individual fields; i.e. Games, Concerts, One's Work on Show, Helping at School Functions, and Membership of School Clubs. In Table 48 'Participation' has been 'scored' for the first four of the five items. 'Membership of a School Club' has not been included because it is not quite the same as the other four. All the schools involved are active in the first four items but there are not always clubs available for pupils to join. This observation was made by a number of respondents. Despite the fact that the question was not the open-ended variety, they had written in

'no clubs available' or words to that effect.

In Table 43, the 'sometimes' and 'often' responses have been combined to test the directional hypothesis and also because in a pupil's mind there may be doubt as to the line of demarcation between the two. Since all pupils could not play often for a school team, unless inter-school games were to be increased tremendously, it seemed more rational to combine in this way. Schools A, B and C although showing the trend in the predicted direction, did not allow the null hypothesis to be rejected if the schools were examined individually. If the three samples were to be combined, the value of  $X^2$  would be 5.079 ( $P < .025$ ). In the case of School D, fourth year groups, differences of this degree could happen by chance on one in ten occasions. The other seven schools' groups show significance levels beyond that necessary to reject the null hypothesis. Tables 43W indicate significance levels of  $P < .001$  for the whole samples. Examining the percentage figures, one becomes aware of the high percentage of fourth stream pupils who never play for a school team at games. In the third year the range is from 58 - 68 % as opposed to 19 - 51 % for the 'A' and 'B' streams.

#### SCHOOL CONCERTS.

Of the eleven, third and fourth form groups answers to the participation in concerts question (Table 44), equality is present

in one group; i.e. equal affirmative answers from 'A' + 'B' as from 'C' + 'D' forms. Of the other groups, participation is stream related in the predicted direction although, in School H (third year) and School C (fourth year), the hypothesis of no association between higher stream and higher participation figures cannot be rejected at the .05 level of significance.

The percentage of pupils taking part in concerts differs considerably from school to school. This can be due to either varying numbers of performances or, since the question simply asks whether a pupil has taken part or not, in some schools the same pupils may be the regular participants. The fourth year pupils participation figures show very high percentages of 'C' & 'D' stream pupils who have never participated in a school concert (55 - 72 %). If concerts are a part of school education, one would assume that, by the Spring term of a pupil's fourth year in a Secondary School, he would have played some small part in one of the many facets of a school concert.

#### DISPLAY OF WORK.

There is no consistent pattern in the individual sub-samples from the data relative to pupils' work being put on show in a school (Table 45). Three of the six third year groups were contrary to the predicted direction. The fourth year classes, on the other hand, are

by and large (4 out of 5) consistent with H1 at the .05 level of significance.

#### HELPING AT SCHOOL FUNCTIONS.

Table 46 shows the data and Chi-square Test results relating to 'Helping at School Functions' when the school is open to the public. There are very obvious trends with the null hypothesis of no association between streams and helping only failing to be rejected on two occasions.

Of the forty four results contained in the last four tables, only on three occasions are the scores for the 'C' + 'D' streams more than for the 'A' + 'B'. The three insignificant differences are to be found in the 'work on show' section which is rather different from the other three items in that direct participation is not required. In sport, concerts and 'helping' the pupil is physically present, whereas 'work on display' can be carefully vetted. When the responses to the four previous questions are 'scored' to present a participation scale in the four activities, highly significant results are obtained (Table 47). In no case does the median score of the 'A' + 'B' streams fail to be significantly higher than that of the 'C' + 'D' streams. In eight of the groupings, the results are significant beyond the .001 level.

## DESIRE TO PARTICIPATE.

Since participation in certain school activities involves voluntary cooperation or desire to take part, it could be suggested that the results referred to in the previous paragraph do not necessarily reflect inequality of opportunity and that the scores could be due to lack of cooperation. In order to test the validity of such a suggestion, a small group of questions were asked based on 'Desire to Participate'. The responses were 'scored' and grouped together. The idea was to test the general desire to be involved not to establish the direct connexion between taking part and desire to take part in each activity. The reason for the responses being combined in this way is that participation is only partly on a voluntary basis in that pressures are brought to bear. This was obvious from the 'concert' replies in particular. A number of pupils had taken part in concerts though reluctant to do so.

Table 48 shows inconclusive results. Three of the school groups express reversals of the predicted trend whilst five others do not achieve the .05 significance level. Therefore there is insufficient evidence to conclude that the degree of involvement on the part of the lower streams is due to their own attitudes towards the activities.

## MEMBERSHIP OF SCHOOL CLUBS.

Conclusions about the stream related membership of clubs are

severely limited (Table 49) because <sup>some</sup> have obviously thought that there were no clubs for them to join. There are clubs for third and fourth year pupils in each school but certain pupils limitations may make membership virtually impossible, for example to debate one needs a certain amount of ability; Another limitation is that a club tends to limit its size of membership. Therefore not wishing to overstate the case, Table 49 shows very significant differences in stream membership of clubs in a number of schools whilst only one school fails to produce figures to support the predicted trend. Whole sample figures are significant in both years.

#### SCHOOL PRIZES.

The evidence in Table 50 for each school indicates that the distribution of prizes does not tend to unduly favour the upper streams. This is feasible in that the allocation is usually for certain achievements within each class and then additional prizes open to all. Even the second category tend to result in equal distribution between streams in that prizes for industry, gained very often by lower stream pupils, balance the achievement prizes of the higher streams. The slight imbalances are probably due to subject prizes being given within each year, so that the second year Mathematics prize for example is more likely to be presented

to a higher stream pupil. In Table 50W the third year group achieves significance beyond the .005 level due to the cumulative effect of the slight differences (10.P 54).

Very few pupils of any stream show a desire for Prize Givings to be abolished (Table 51). Only two fourth year groups show stream related differences in the predicted direction on this question and with a probability of occurrence by chance of less than one in twenty. In three cases fewer than five pupils in the dichotomized groups were anti prize givings. Four groups show a reversal of the predicted direction. In no case is there more than a 27% anti prize giving group and in many cases, three lower stream and five upper stream groups, only one pupil in ten expresses a desire to see prize givings brought to an end. If one considers these figures in terms of classes, there are approximately four to five pupils per class who would like to see an end to prize givings.

#### HOME BACKGROUNDS.

No direct information could be obtained to substantiate that the lower stream pupils compared with the upper stream pupils have a higher percentage of working class backgrounds. (para 1 P.91). From recent researches there is strong support for the hypothesis that working class children fail to either achieve the stream that their initial ability warrants or remain in the higher stream even if

placed there initially. Relative to the child from a middle class home, the working class child is more likely to be in a lower stream and to be an early leaver.

Unless the County Borough consists of schools contrary to the schools in the Newsom and other reports, the lower streams merit better teachers than the higher streams to help compensate for the built in disadvantages of their home backgrounds.

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#### 7.4. SUMMARY. - OF SECTION 2.

##### THE CASE FOR THE LOWER STREAMS.

##### DEGREE OF SECONDARY EDUCATION.

1. Early Leaving. The data indicate that three out of four of the pupils who remain at school beyond the compulsory age will have been formerly in forms 3A or 3B.
2. Attendance. In the sample of four schools, significant stream related differences in the predicted direction are in evidence in all the third and fourth year comparisons. In the lower forms the null hypothesis cannot be fully rejected. This could be due to the poor attenders moving downstream but there are a number of other possibilities.
3. Homework. Very few lower stream pupils do homework regularly. The data show that this is due to the fact that homework is

not set to the lower ability groups. Twenty percent of this group expressed a desire for more homework than they are getting.

4. Size of Classes. (see P.82 point 5).

THE TEACHING SITUATION.

5. Attendance. Attendance is more irregular in the lower streams and therefore this presents a teaching difficulty if teaching is by the traditional methods.

6. Attitudes to School Values. The higher streams compared with the lower streams are more school orientated, possess a better attitude to class work, and have a greater attachment to the school and a greater desire to stay on.

7. The Effects of Mobility. Deteriorators v Improvers.

The mobility that takes place tends to increase the homogeneity of attitudes within the forms. The pupils who move upstream as opposed to pupils who move downstream show significantly better attitudes and adherence to school values.

8. Conflict within the Pupil Role-set. There is evidence of strong group loyalty in the lower streams despite the fact that many of the pupils are aware that they are a low status group and would do better in other streams.

Thus we have the situation of pupils being deprived of status within the external system, aware of this deprivation and possibly the exter-

nal pressure reinforces internal unity. The Literature Section suggests that in such circumstances the low status group may well confer prestige on its members for actions which are in conflict with the behaviour norms advocated by the establishment.

#### OPPORTUNITIES WITHIN THE SCHOOL.

9. School Games, Concerts, Work on Show, Helping at School Functions.

Of the forty four sub-sample comparisons, on only three occasions (all in the 'work on show' section) do the 'A' & 'B' 'scores' fail to be greater than the 'C' & 'D'. Whole sample analyses are significant in all four items. When 'participation scores' are calculated for the four 'activities' collectively, all eleven sub-samples show differences, in the predicted direction, which are significant beyond the .05 level. Analysis of 'Desire to Participate' shows that lack of desire to participate is not a feasible explanation of the differences.

10. School Clubs. Membership of School Clubs follows the same pattern but differences between schools in the availability of clubs resulted in unsatisfactory data.

11. School Prizes. Although the whole sample analyses show differences, the individual schools present little evidence of unduly favouring the upper stream pupils in their distribution of school prizes.

12. Home Backgrounds. Although no direct evidence was obtained as to the 'class' of background, a number of researches show that streaming is class biased. Therefore, unless the County Borough studied is exceptional, a far higher proportion of children from working class homes will be in the lower streams than in the upper streams.

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CHAPTER EIGHT.

DESIGN OF SECTION 3 OF THE STUDY.

- ATTITUDES AND OPPORTUNITIES IN PERSPECTIVE.

### 8.1. CRITERIA.

The criteria used to analyse differences in attitudes and opportunities between the two categories of schools will be, by and large, as in - Design of the Study Section 2. All the data have been extracted from the completed questionnaires as in the previous section.

### 8.2. THE SCHOOLS.

There are two categories of schools examined in this section; they are:

1. The Streamed Secondary Schools (excluding Grammar Schools) in the County Borough, as in Section 2;
2. The Grammar Schools within the same County Borough.

#### The Grammar Schools.

The Borough contains five single sex Grammar Schools. The Grammar School intake is, according to the headteachers' figures, approximately 50% from the town and 50% from the surrounding county. The schools all operate a 'streamed' system. One of the schools, a girls' Grammar School, was not prepared to be involved in the study. The four schools, which will be referred to as Schools Q, R, S, and T, are therefore two boys' and two girls' Grammar Schools. For the purposes of this study they will be re-

ferred to as 'the Grammar Schools'.

### 8.3. INFORMATION REQUESTED.

The schools in question, i.e. the four Grammar Schools, were asked to allow their pupils to complete the same questionnaire as had been answered by the Secondary Modern Schools. This they agreed to do. Respondents were restricted to the third year pupils.

There were a number of reasons for selecting the third year groups for comparative purposes:

a. Because of sheer volume of work that one can cope with single handed within a given period of time, restrictions had to be placed on numbers of questionnaires to be analysed. Limited as it was there were some 1817 questionnaires completed.

b. To question pupils shortly after joining a Secondary School as to their attitudes and opportunities would seem to place severe limitations on any conclusions to be drawn; although a comparative study of attitudes of children towards Modern Schools and Grammar Schools was carried out based on questions being asks within six months of the pupils joining the new type of school (34).

c. The fourth year groups were considered unsuitable because the fourth year is not a year in which pupils leave the Grammar Schools but they do leave the other schools and therefore they are not truly comparative groups.

#### 8.4. PROCESSING OF THE DATA.

The data have been processed in order to make comparisons in attitudes and opportunities:

between the Grammar Schools as a whole and the Secondary Modern Schools.

The Tables 52 - 70 relating to this section are contained in Appendix Three. The statistical tests are two-tailed, the General Null Hypothesis being that there are no significant differences in the attitudes and opportunities of the various comparative groups. When attitude comparisons are made they are based on the 'School Orientation Test', 'Attitudes to Class Work' and 'Attachment to School'; all of which are described in Chapter Six - Design of the Questionnaire. By 'opportunities' one means the same range of opportunities as examined in Section 2 of the Study, i.e. Homework, Games, Work on Show, Helping at School Functions, and Membership of School Clubs.

The following populations are involved in this comparative section:

##### Between Grammar Schools and Secondary Modern Schools

- the lowest stream in the Grammar Schools v the top stream in the Sec. Mod. Schools.
- the top stream in the Grammar Schools v the top stream in the Sec. Mod. Schools. (Orientation Test only).
- the lowest stream in the Grammar Schools v the 'C' stream in the Sec. Mod. Schools. (Orientation Test only).

- all third year Grammar Schools v all third year Secondary Modern Schools (comparisons of opportunities only).

8.5.

RATIONALE.

Comparisons are made between the top streams of the Secondary Modern sample and the bottom streams of the Grammar School sample. If the 'A' pupils had gained slightly better results in the 11+ examination they would have helped constitute the very group of pupils with whom the comparison is being made. Approximately 50% of the Grammar School pupils attended the same Primary Schools as the Secondary Modern pupils. At eleven years of age the successful were segregated and now, three years later, their attitudes and opportunities are being compared.

Attitudes.

One may believe:

1. that attitudes to school standards are based on ability and therefore there should be a steady decline from Grammar School 'A' stream to the Secondary Modern 'D' stream; or
2. that, irrespective of ability, each school contains its share of pro-school pupils and its anti-school pupils; or
3. that the pupils at the apex of the establishment will be pro the establishment's standards rather more so than the pupils.

at the bottom of a similar but higher status establishment.

The attitude comparisons should throw light on the three possibilities expressed. Point 2 is examined further by comparing the Grammar School 'A' with the Sec. Mod. School 'A' (School Orientation Test) and the Grammar School bottom stream with the Sec. Mod. School 'C' stream on the same test.

### Opportunities.

In order to bring perspective to the very stream biased evidence of Section 2 of the Study, the Secondary<sup>r</sup> Modern School 'A' streams are compared with the Grammar School bottom stream to see if the pupils have been deprived of opportunity (as defined for this study) by failing the 11<sup>+</sup> examination, or have they in fact enjoyed greater opportunity through being the 'A' stream of the second choice establishments.

The second series of comparisons in this field is between the whole third year Secondary Modern School population and the whole third year Grammar School population to see if the deprivation of the lower streams in Secondary Modern Schools as evidenced in Section 2 is a within school deprivation or whether it constitutes a serious between school deprivation.

There are possibly a number of limiting factors within this

section of the study. One could argue that in the Grammar Schools, with large sixth forms and much larger fifth forms, the opportunities are obviously going to be restricted. An example of this could be that the school first eleven team has a two hundred strong 6th form competing for places as well as the other pupils in the school. This argument could be answered by suggesting that all school activities should increase in direct proportion to the number of pupils for which they are thought to be suitable. Within this study, the sample is of third year pupils, The number of pupils within the individual Grammar School's third year groups is somewhat smaller than the comparative figures for the Secondary Modern Schools, therefore, if there were equal numbers of activities, the chances of taking part would be somewhat in favour of the Grammar School pupil. Competition for places in any of the activities studied should rarely come from the fifth and sixth forms.

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CHAPTER NINE.

RESULTS OF SECTION 3 OF THE STUDY.

9.1. BETWEEN GRAMMAR SCHOOLS AND SECONDARY MODERN SCHOOLS.

COMPARISONS OF GROUP SCORES - The Top Stream Sec. Mod. Sch. pupils  
v Lowest Stream Gr. Sch. pupils.

In Tables 52 - 55, the lowest streams of the Grammar School sample are compared with the highest streams of the Secondary Modern School sample. The Mann-Whitney U test for large samples has been applied to the ranked scores of the two populations. The hypotheses are non-directional in that the prediction of differences does not state direction.

The 'School Orientation' scores (Table 52) show that there is a highly significant difference between the two populations and the null hypothesis is rejected at the .0032 level. The 'bulk' of the Secondary Modern School 'A' stream population is higher than the 'bulk' of the Grammar School population in School Orientation. The reasons for this result cannot be presented, tested and hence explained in this study. There are numerous variable factors other than the fixed factor that each population has received the same period of Secondary Education within the same County Borough. What the evidence does is to determine that attitudes to schooling are not entirely based on the I.Q.'s of the pupils. If this had been the case, the bulk of the Grammar School population should have

scored higher than the bulk of the Secondary Modern School population, not the reverse.

Data in the Table 53 give no indication of differences in the 'Attitudes to Class Work' of the two populations ( $P < .9442$ ). 'Attachment to School' 'scores' (Table 54) allow the null hypothesis to be rejected ( $P < .0076$ ). The two populations show highly significant differences in their attachment to school with the Secondary Modern Schools being (stochastically) higher than the Grammar School sample.

The greatest difference in this section is evidenced in the 'opportunities' data (Table 55). The 'A' stream population of the Secondary Modern School enjoying a far greater participation in school activities than the Grammar School sample ( $P < .00006$ ).

Although the sub group relating to the classroom situation is inconclusive, in fact almost perfect equality, all other evidence indicates that the 11+ failures are school orientated to a greater degree than their contemporaries, many of whom were members of the same classes in the Primary Schools, and also that they are enjoying a very favourable advantage in relation to 'Participation in School Activities'.

Taking the analysis a stage further Tables 56 and 57 compare the 'A' stream population of the two categories of school and then the 'C' streams of the Secondary Modern Schools with the lowest stream of the Grammar Schools third year. The 'School Orientation

Test' is used for the comparison. Neither set of evidence allows the rejection of the null hypothesis. There is no convincing data to establish that there are differences in attitudes, to school in general, between the 'A' streams of the Secondary Modern Schools and the 'A' streams of the Grammar Schools ( $P < .8886$ ). The lower stream analysis with a probability of .4066 does not allow one to conclude significant differences are present between the two lower stream populations.

The findings of this section refute the idea that pro-school attitudes will be found in the top stream Grammar School pupils and then a gradual decline through streams and establishments will be seen down to the anti-school attitudes of the lower Secondary Modern.

We have already seen the stream related differences in Secondary Modern Schools, now there is evidence of between school comparisons. The pattern is of within school differences but no significant differences between pupils in the two categories of schools.

#### OPPORTUNITIES IN INDIVIDUAL ACTIVITIES - The Top Stream Sec.Mod.

##### School pupils v Lowest Stream Gr. School pupils.

In Tables 58 - 63 the comparative figures are presented for the 'A' stream Secondary Modern Schools population and the lowest stream

Grammar School population in each individual activity investigated. The Chi-square (two-tailed) Test has been applied to the data.

#### Homework.

Table 58 presents the data relating to the doing of homework. Homework is attempted regularly by some 70% from the Secondary Modern sample and 67% of the Grammar School sample. This 3% difference is insignificant and therefore the null hypothesis remains.

#### School Games.

The data for school games (Table 59) shows a somewhat different picture will only 11% of the Grammar School pupils playing often for a school team and 75% never playing. In contrast, the Secondary Modern 'A' stream pupils show figures of 37% for regular representation and only 27% have never represented the school ( $X^2 = 62.88$  for d.f. = 1,  $P < .001$ ).

#### School Concerts.

Exactly 50% of the Grammar School pupils had taken part in a school concert as opposed to 70% of the Secondary Modern pupils (Table 60) which information allows the null hypothesis to be rejected at the .01 level; there are significant differences in the concert opportunities in the two categories being discussed.

#### Work on Show.

The same trend is seen in Table 61 re pupils' work that has been put on show in their present school. The differences, in favour of the Secondary Modern School pupils is significant beyond

the .001 level with percentages of 73 and 48 respectively;

#### Helping at School Functions.

One hundred and eighteen Secondary Modern School pupils had been asked to help at a school function out of one hundred and eighty one whereas only thirty nine Grammar School pupils had been asked to help out of one hundred and six. Thus there is a substantial difference in the numbers of pupils from each population that have been asked to help ( $X^2 = 20.63$  for d.f. = 1, P .001).

#### Membership of School Clubs.

In Table 63 the data show that rather more than 50% of all the pupils are members of a school club with a slightly lower percentage for the Grammar Schools than the Secondary Modern Schools population (47% and 59%) with a one in ten probability of such differences occurring by chance if no real difference exists.

In these individual activity analyses there is no case where the Grammar School population shows a greater opportunity than the Secondary Modern population. With the exception of homework and school clubs, greater opportunities are enjoyed by the top stream Secondary Modern School pupils than their contemporaries in the Grammar School sample.

#### OPPORTUNITIES IN INDIVIDUAL ACTIVITIES - The Whole Grammar School Sample v The Whole Secondary Modern School Sample.

In Tables 64 - 69 the Grammar School sample includes all the

streams in the third year. Similarly the Secondary Modern School sample includes all the third year pupils irrespective of stream.

#### Homework:

51% of the Secondary Modern pupils do homework often as opposed to 82% of the Grammar School pupils (Table 64). The Secondary Modern Schools also have a small number of pupils who never do homework (4%). This evidence is based on the completion of questionnaires and therefore the validity of such figures could be questioned. Inspection of some nine hundred homework notebooks during the two years in one of the schools supports the suggestion that some pupils are not given the opportunity to do homework. These pupils are invariably in the lower streams. The null hypothesis of no difference in the number of pupils who do homework regularly can be rejected at beyond the .001 level of significance. Far more third year Grammar School pupils do homework than third year Secondary Modern School pupils.

#### Games.

There are significant differences ( $P < .001$ ) in the number of pupils who play games for the school (Table 65) from the two populations. 70% of the Grammar School pupils never play for the school at games compared with 43% of the Secondary Modern School population; this could be due to a small minority group in the Grammar Schools dominating the school teams or due to fewer school teams being

available.

### Concerts.

The Secondary Modern Schools have an 8% advantage over the Grammar Schools in the number of pupils who have taken part in a school play or concert ( $P < .05$ ) (Table 66). Both populations show a remarkably high percentage of participation in this field (49% and 57%).

### Work on Show.

The 15% majority enjoyed by Secondary Modern pupils in this field constitutes a difference of sufficient magnitude to reject the null hypothesis at the .001 level of significance (Table 71).

### Helping at School Functions.

One would expect the number of pupils, who had been asked to help at parents' nights, or when the school had been open to the public, to be somewhat smaller than for the other activities as the number of such functions is limited as also the help required on these occasions. The same trend is again in evidence (Table 68) and the differences are significant beyond the .001 level.

### School Clubs.

Table 69 shows that 18% more Grammar School third year pupils than Secondary Modern School pupils are members of a school club ( $P < .001$ ).

Of the six activities examined, Grammar School participation

in Homework and School Clubs is higher than that of the Secondary Modern Schools (Table 70). In the other four activities the reverse is true with highly significant differences ( $P < .001$ ) in three of the four. Thus the stream related differences in opportunity expressed in Tables 43 - 47 Appendix Three can be viewed in perspective. Within the Secondary Modern Schools, the upper streams enjoy significantly better opportunities than the lower streams. Whilst the lower streams are 'deprived' within their establishments, this deprivation cannot be considered with the same seriousness if viewed in the light of the above comparisons. The 'A' stream Secondary Modern pupil's degree of participation is much higher than that of the lowest stream Grammar School pupil's and the Secondary Modern School population of the third year as a whole has far higher participation than their Grammar School counterparts. The only activity that appears to decline through the ability range is homework. There is no significant difference between 'A' streams of the Secondary Modern Schools and the lowest stream Grammar Schools but there are significant differences between the whole third year populations in the two categories of schools and also within the Secondary Modern Schools. The direction in each case indicated that more pupils in the higher status groups do homework often than the pupils in the lower status groups.

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## 9.2. SUMMARY OF SECTION 3.

### BETWEEN GRAMMAR SCHOOLS AND SECONDARY MODERN SCHOOLS.

#### Attitudes.

The top stream Secondary Modern School sample 'scores', compared with the bottom stream Grammar School sample 'scores', are significantly better in the 'School Orientation Test' and in 'Attachment to School', 'Attitude to Class Work' approaches equality. Taking the analysis further, the data present no evidence to establish differences, in attitudes to school in general, between the 'A' streams of the Secondary Modern Schools and the 'A' streams of the Grammar Schools; nor is there sufficient evidence to reject the null hypothesis of no difference in attitudes to school of the 'C' stream Secondary Modern pupils and the lowest stream Grammar School pupils.

#### Opportunities.

Six items were included in this section; Homework, Membership of School Clubs, School Games, School Concerts, Work on Show, Helping at School Functions. In these individual 'activity' analyses, in no case does the Grammar School lowest stream population show evidence of greater opportunity than the top stream Secondary Modern School population. With the exception of the first two topics, the latter population enjoys significantly greater opportunities than

their contemporaries in the Grammar Schools.

When one analyses the data for the whole sample of third year pupils in the two categories of schools there are significant differences in all six sections. The advantage is to the Grammar School population in the first two items and to the Secondary Modern School population in the other four items.

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CHAPTER TEN.

SUMMARY AND DISCUSSION OF THE FINDINGS.

#### 10.1. SUMMARY.

For purposes of brevity the pupils in the various streams will be referred to purely as 'A', 'B', 'C' and 'D'. 'He' will be used to stand for both boys and girls.

A summary of the findings has been included at the end of the results of each section and therefore will not be repeated here but the picture of the 'C' & 'D' child that emerges from the research may be described as follows:

1. 'A' & 'B' receive more teaching from high status, better qualified and better paid teachers than 'C' & 'D' during the four years of Secondary Education.
2. 'C' & 'D' are taught in approximately the same size of groups as 'A' & 'B' but 'A' & 'B' will probably decide to enter the fifth year and maybe the sixth form. In these forms they will not only be taught almost exclusively by highly ranking teachers but will be taught in groups smaller than those of the earlier years. 'C' & 'D' are unlikely to take the decision to remain at school and further their education.
3. The degree of education received by 'C' & 'D' is shorter than that of 'A' & 'B'. This is not only due to early leaving but also because 'C' & 'D's' attendance is rather irregular and in addition they tend to be deprived of homework.
4. The difficulty involved in teaching 'C' & 'D' can be shown to be greater than that of teaching 'A' & 'B'. Irregular

attendance is one relevant factor another is the 'C' & 'D' are not orientated to the school and teacher values to the same degree as 'A' & 'B'; they are not particularly interested in class work and express a desire to leave school as soon as possible. 'C' & 'D' are in a situation that could lead to the development of a subcultural behaviour pattern. The mobility that takes place in the schools tends to increase the number of pupils with anti-school attitudes in the 'C' & 'D's.

5. 'C' & 'D' do not participate in school activities to the extent of 'A' & 'B' and therefore teachers' time inside and outside of the classroom situation is not allocated equally to all streams.

6. 'C' & 'D' will have a far greater chance of coming from working class homes than 'A' & 'B'.

## 10.2. DISCUSSION OF THE FINDINGS.

### SECTION 1 - Allocation of teachers to the various streams.

At some stage in Secondary Education the content of a subject may justify the allocation of Specially Qualified teachers to certain groups especially if the age range is eleven to eighteen plus. Comparisons have been made between upper and lower streams

over different age ranges so that the reader can decide at what stage he considers this a valid reason for different allocations. Since all the teachers in this authority are qualified, one would think that a minimum demand from each teacher would be the ability to teach his 'Training College' subjects to any stream in the first three years. It would be a sad reflection on the content of College of Education courses if one could not make the same statement up to G.C.E. 'O' level.

The teacher to pupil ratios of the fifth and especially the sixth forms are from necessity rather than by design. The schools have attempted to offer a reasonable range of subjects at this level, in keeping with the Grammar School practice, even though numbers of pupils do not justify this. The result has been that resources have been diverted from the main body of the school to support the 'top end', which is not a viable unit.

#### SECTION 2 - The Case for the Lower Streams.

If there are two variables (a) period of instruction; and (b) quality of instruction, one would expect the two to be in inverse proportion as a built in correction factor. The study shows the reverse to be the case in practice.

Provided that one has the necessary knowledge of a subject, teaching the upper streams is generally acknowledged as being comparatively easy; the course plans itself (i.e. the examination

syllabus), the motivation is the career structure of the group and the need for examination success, parental backing is evident from parents' evenings, and the pupils' support the system possibly because within it they rank highly.

In this study there is ample evidence that the very teachers who would be expected to be capable of dealing with the organizational and disciplinary problems of the lower streams devote most of their teaching time to the other groups.

The 'opportunities' selected for study may be carried out partly within the school but by and large will involve teachers in after school hours. In this sense the study of 'opportunities' is an extension to the 'allocation of teachers'. On the other hand it is a further field of deprivation, (whether the deprivation is partly self-inflicted will be discussed under 'Limitations of the Study'); the lower streams are inadequately represented. If a school provides activities then presumably those activities are considered to be of value to the pupils. If when 'the school is represented' the representation is from the upper streams this is not a true representation. One may suggest that certain abilities are involved which are possessed less frequently by lower stream pupils. If one accepts this suggestion, further questions may be asked; e.g.:

(a) School Games - cannot inter-school games be arranged between third teams as well as first teams in the various sports?

(b) Concerts - Is the criterion the professionalism of the prod-

uction or the benefits to the participants?

(c) Work on Show - Is the pupil's work not worthy of display if it is good compared with the pupil's best self rather than compared with other pupils?

### SECTION 3 - Attitudes and Opportunities in Perspective.

Section 2's results paint a rather poor picture of the 'C' & 'D' pupil. Compared with the 'A' & 'B' he appears to be anti-school and deprived of opportunity, within the school. The Section 3 comparisons try to bring the findings into perspective.

Attitudes. The Secondary Modern / Grammar School comparisons indicate that attitudes towards school values do not follow a rank order with 'A' stream Grammar School at the top and 'D' stream Secondary Modern at the bottom. Results based on the attitude 'scales' show that the 'A' streams in both categories of schools share approximately the same adherence to school values and the difficulty of teaching low streams in each category of school is of no significant difference.

Opportunities. The pupils who just failed to achieve Grammar School education are now more school orientated and enjoying greater opportunities (as defined for this study) than their contemporaries who just passed the 11+ examination. The low stream Secondary Modern sample though deprived of opportunity in comparison with the upper streams in their own schools are in fact being taught in schools that provide

greater 'opportunities' than the Grammar School of the County Borough and thus the deprivation is not a real but a relative deprivation. One notable exception to this is that homework is set regularly to all Grammar School pupils.

### 10.3 LIMITATIONS OF THE STUDY.

The finding of the study should be viewed with the following limitations in mind:

#### SECTION 1 - Allocation of teachers to streams.

1. The data, examined re allocation of teachers to streams, was for a period of two years only.
2. Inequalities in allocation are in evidence provided that one is prepared to accept the criteria used for differentiation between teachers.
3. The 'analysis of variance' 'scores' are based on a subjective scoring scheme.
4. Most of the comparisons are based on five subjects only; those common to all streams and age groups.
5. Being taught in a larger group does not necessarily constitute a disadvantage. Sixten Marklund (40.P 249) found that in 281 comparisons made of attainment between pupils in larger and smaller classes, 37 favoured the larger classes, 22 the smaller classes and in 222 the differences were not significant.

SECTION 2 - The Case for the Lower Streams.

6. Much of the data obtained was by questionnaire. This was not necessarily the ideal way of obtaining the information for the various topics but was the only feasible channel. The findings therefore are subject to the following limitations:

- (a) the reliability of the answers;
- (b) each question limited to one of three responses;
- (c) the sample was based on third and fourth year pupils only;
- (d) there was a discrepancy between the number of pupils on roll and the number of completed questionnaires. Absentees account for this and therefore bias the sample. This would probably make the result conservative;
- (e) two schools did not allow the Questionnaire to be set.

7. A number of assumptions are made, e.g. that pupils with a strong desire to leave will be more difficult to teach than pupils who do not wish to leave. One has to decide in interpreting the results whether the assumptions are reasonable.

8. The study tested differences in attitude but not reasons for the differences. The claim is made that classes with poor attitudes to school need better teachers but not that a poor allocation of teachers influences pupils' attitudes; the measurable variable is too closely associated with other factors for which

there is no satisfactory measure.

9. While differences in opportunity have been established, the degree to which this is self-inflicted was outside the scope of the study. To apportion blame or responsibility for the situation found one would have to know the answers to many questions, e.g.

- (a) the history of lower stream response to homework in the past;
  - (b) their reliability in staying behind after school to rehearse for a school play, or to attend Saturday mornings for school games. It could be that the paper round, Saturday job or shopping for mother were the reasons for the deprivation.
- 'Desire to Participate' scores while showing willingness to take part are not an indication of availability.

10. No direct evidence of home backgrounds was made available.

### SECTION 3 - Attitudes and Opportunities in Perspective.

11. The sample for the third section of the study was of third year pupils only.

12. The Grammar/Secondary Modern School comparisons are purely to bring a little perspective to 'attitudes' and 'opportunities' of contemporary pupils educated in the same County Borough. Nothing more should be read into the results.

#### 10.4. PERSPECTIVE FROM LITERATURE.

To relate the findings of the study to other researches would

be repetitious since relevant researches and their findings have been quoted in the 'Literature Relevant to the Study' section. Suffice it to say that there is no apparent area of conflict with other writings. The study presents a picture of deprivation within the educational system. Below is an attempt to see this deprivation not as a lower stream / upper stream comparison but as a deprivation per se i.e. what loss has been incurred by the pupils whose potential has not been fully exploited.

A number of writings lend perspective to this deprivation by questioning the whole value of formal education. Plato (53) in his 'Republic' does not mention education for the lower orders even though the lower orders included all who did not rule or defend the state. He partly rectifies the omission in 'The Laws'. From the 'Allegory of the Cave' (54) one might ask whether certain classes in society are happier in the 'shadows' rather than to be exposed to the 'sunlight'. through education, whose glare may make them wish to return to the cave. The same theme is expressed by Eliot (21) when he says:

P 99. 'That an educated person is happier than the uneducated is by no means self evident.....on the other hand to be educated above the level of those whose social habits and tastes one has inherited, may cause a division in a man which interferes with happiness.....Too much educa-

tion can produce unhappiness.'

Rousseau was very sceptical of formal education and, should one agree with his views, the lower streams are indeed fortunate:

(57) 'Exercise his body, his limbs, his sense, but keep his mind idle as long as you can.....Do not save time but lose it'.

In his education for 'Emile' (58) he states that it is a mistake to educate children before they are conscious of the need and yet at the present time according to Mills (see below) there is no need at all for much of the content of education. The motivation for learning is seriously attacked but is it not true today?

'Children are pushed on by jealousy, envy, vanity, greed, fear.....sure to corrupt the soul.' More recently Whyte's 'Street Corner' contrasts the characteristics of the different groupings, at least 'Doc and his boys' possessed loyalty and generosity. (69).

Shaw (61) is critical of both the content of education and the product of the system. Not only does he criticise the competitive nature but goes on to say that:

'The slates in our schools are not clean, they are scrawled all over with the accumulated nonsense and rubbish of centuries.'

'I claim arrogantly to be one of the best educated men in the world, and on occasion have dismissed 95% of the

academic celebrities as nit wits.'

Denis Marsden (41.P 33) claims that the working class share Shaw's views:

'they recognise something half-baked about the Grammar-school and university product. The "educated idiot" as one man put it.'

Musgrove (48) sees the dangers of education in that graduates are in danger of becoming cautious old men at twenty and quotes Logan and Goldberg who found that a high proportion of eighteen year olds in Grammar Schools were looking forward to their pensions.

The value of the content of our educational system is severely criticised in Chapter III of Bantock's (2) 'Education in an Industrial Society'. He sees 'A' level as an examination for job entry and of no further use. In support he quotes Mills (47) who claims that 80% of people at work now perform work that can be learnt in three months and therefore the curriculum in schools is now for examination success and not related to work. Mills believes that this system of gearing teaching to examinations destroys the greater educational value it could have. This is no doubt a consolation to the lower streams who perhaps have not been deprived of very much and can learn what they need when they need it and in a very short time, as Lord Hailsham (28) said in 1963:

'During the war it took a matter of months to train a Spitfire pilot. I decline to believe that it takes five

years to train a bricklayer.'

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CHAPTER ELEVEN.

CONCLUSIONS.

## 11.1. CONCLUSIONS.

1. Three General Null Hypotheses were tested in the Study (Sections 1i and 2):

A. 'There is no difference in the allocation to the upper and lower streams of teachers who are

(i) Heads of Subjects;

(ii) Holders of Special Qualifications in the particular subjects;

(iii) Holders of posts of responsibility.'

B. 'There is no difference in the numerical sizes of groups in which upper stream and lower stream pupils are taught during their Secondary School Education.'

C. 'The upper and lower streams do not show evidence of differences in

(i) the degree of Secondary Education received;

(ii) the difficulty of the teaching situation they present;

(iii) the opportunities afforded them within the school;

(iv) the educational opportunities afforded them by their home backgrounds;

that constitutes a case for the lower streams receiving a

better allocation of 'good' teachers than the upper streams.'

Within the limitations of the study, although significant differences

were not always found in each sub-sample analysed (i.e. individual schools) there were sufficient indications to reject the Null Hypotheses and conclude that:-

'The upper streams compared with the lower streams:

- (i) receive a 'better' allocation of teachers;
- (ii) enjoy a more favourable teacher to pupil ratio, if the full Secondary School life is examined;

and that this situation is exacerbated because they also

- (iii) receive a greater degree of Secondary Education;
- (iv) present a less difficult teaching situation;
- (v) enjoy greater opportunities within the school;

and (vi) probably enjoy better educational opportunities as a result of home backgrounds.

2. Perspective was brought to the 'attitude' and 'opportunity' findings by the extension to the study (Section 3):

- (i) No significant differences were found between the attitudes of pupils in the Secondary Modern Schools and their contemporaries in the Grammar Schools (equivalent streams). Therefore in this respect the lower stream Secondary Modern pupils do not present a more difficult teaching situation than the lower stream Grammar School pupils.

- (ii) Similarly with 'opportunities', the lower stream Second-

ary Modern School pupils compared with the upper stream pupils are deprived. On the other hand the Secondary Modern Schools provide far more 'opportunities' than the Grammar Schools, within the same Education Authority, therefore the deprivation is only relative.

- (iii) The only serious disadvantage, suffered by the Secondary Modern School pupils compared with pupils in the Grammar Schools, was that homework was not set regularly to the lower stream pupils.

#### 11.2. GENERAL COMMENTS.

1. There are now no sixth forms in the Secondary Modern Schools of the borough and therefore the biased allocation of teachers to these forms has come to an end. The pupils go from the Secondary Modern Schools to sixth form Colleges at the end of the fifth year.

2. Recently a number of the schools in the study have begun to experiment in the mixing of ability groups; e.g.

- a. In one school, all first year pupils are in mixed ability groups for Mathematics and each child progresses at his own pace using programmed texts.
- b. In another school, a group of subjects is taught under a broad heading, 'topics', so that a number of forms

will be taught by a 'team' of teachers. The group 'splinters' in various ways according to the treatment of the topic.

c. In another school, 'Team Teaching' is being tried.

It is too early to assess the above or to say whether a. b. or c. will become permanent features.

To conclude perhaps one should quote Alfred Yates (71.P 87):

'A good deal of educational research in the past has been undertaken by individuals, often in association with study for a post-graduate qualification. In these circumstances the investigation is almost inevitably limited in scope. It usually involves a restricted sample of pupils and teachers and what if often an even more serious defect - it has to be completed in a relatively short time.'

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APPENDICES - GENERAL.

APPENDICES - GENERAL.

1. The material in the appendices has been excluded from the main body of the report since the fluidity can be maintained without it.
2. For each statistical test used the method of calculation is shown.
3. Explanation for the choice of statistic is given as and when necessary.
4. Most of the contingency tables have been expressed in percentage form in addition to facilitate comparisons when the total for each form, or for each group of respondents, is not the same. The percentage conversions were read from graphs, prepared for the purpose, and stated to the nearest percentage. To convert in other ways would have been extremely time consuming. Accuracy of conversion is therefore limited to the degree of accuracy of the graphs in question. The percentage figures are given in brackets.
5. Schools have been lettered and retain the same letter throughout the enquiry; e.g. Table 16 C is data from School C.
6. Tables have been condensed into 2 x 2 contingency Tables in many cases in order to test a directional hypothesis. In addition, two schools suggested that on occasion two streams are parallel. Comparing streams 'A' & 'B' with 'C' & 'D' allows for such situations. In the 'analysis of variance' the timetable order of classes has been followed in all cases.

7. Not significant means that the results are not significant at the .05 level or beyond.
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ABBREVIATIONS.

- N.S. Not significant.
- N.S.O.W. Not significant - the results are the 'other way' that is the trend is contrary to the predicted direction.
- H.S. Head of subject.
- N.H.S. Not head of subject.
- S.Q. Specially qualified teacher.
- N.S.Q. Not specially qualified teacher.
- R.P. Responsibility post holder.
- N.R.P. Not responsibility post holder.
- H.S.P. Head of subject periods.
- S.Q.P. Specially qualified periods.
- L.S.G.S. Lowest stream Grammar School.
- A.S.S.M. 'A' stream Secondary Modern.

APPENDIX ONE      TABLES FOR SECTION 1 OF THE STUDY

ALLOCATION OF TEACHERS TO THE VARIOUS STREAMS IN THE  
SECONDARY SCHOOLS OF THE COUNTY BOROUGH.

SCHOOLS COLLECTIVELY.

TABLE 1. - Allocation of Subject Heads to streams - Forms 1 - 3.

Ho. There is no difference between the allocation of Heads of Subjects to streams and the allocation of non-Heads of Subjects to streams.

H1. The higher streams receive a better allocation of Heads of Subjects than the lower streams.

Statistical Test. The  $X^2$  test for two independent samples is chosen because the two groups (higher streams and lower streams) are independent, and because the 'scores' under study are frequencies in discrete categories (Subject Head, Non-Subject Head).

Significance level. .05. Actual probability will be stated in all cases. N equals the number of classes in the sample. The rejection region consists of all  $X^2 > 2.71$  if the direction of the results is that predicted by H1.

Formula. 
$$X^2 = \frac{N(|AD - BC| - N/2)^2}{(A+B)(C+D)(A+C)(B+D)}$$
 incorporating a correction for continuity, which markedly improves the approximation of the computed  $X^2$  by the chi-square distribution. (60. P 107).

1.1. MATHEMATICS.

CLASSES TAUGHT BY	STREAMS				TOTAL	STREAMS		
	A	B	C	D		A+B	C+D	
H.S.	22(52)	12(29)	5(12)	1(6)	40	34(40)	6(8)	$X^2=19.85$
N.H.S.	20(48)	30(71)	37(88)	33(94)	120	50(60)	70(92)	d.f.=1
	42	42	42	34	160	84	76	$P < .0005$

- Notes. 1. These figures are for seven schools for two years, forms 1 - 3.  $7 \times 2 \times 3 = 42$ .
2. No 'D' stream in certain years therefore: 34 not 42.

1.2. <u>ENGLISH.</u>	STREAMS				TOTAL	STREAMS		
	A	B	C	D		A+B	C+D	
CLASSES TAUGHT BY								
H.S.	12(29)	8(19)	4(10)	2(6)	26	20(24)	6(8)	$X^2=6.302$
N.H.S.	30(71)	34(81)	38(90)	32(94)	134	64(76)	70(92)	d.f.=1
Total	42	42	42	34	160	84	76	$P < .01$

1.3. SCIENCE.

H.S.	27(64)	19(45)	8(19)	10(29)	64	46(55)	18(24)	$X^2=14.79$
N.H.S.	15(36)	23(55)	34(81)	34(71)	96	38(45)	58(76)	d.f.=1
Total.	42	42	42	34	160	84	76	$P < .0005$

1.4. HISTORY.

H.S.	28(67)	20(47)	19(45)	10(29)	77	48(57)	29(38)	$X^2=5.025$
N.H.S.	14(33)	22(53)	23(55)	24(71)	83	36(43)	47(62)	d.f.=1
Total.	42	42	42	34	160	84	76	$P < .02$

1.5. GEOGRAPHY.

H.S.	25(59)	20(47)	13(31)	12(35)	70	45(54)	25(33)	$X^2=6.116$
N.H.S.	17(41)	22(53)	29(69)	22(65)	90	39(46)	51(67)	d.f.=1
Total.	42	42	42	34	160	84	76	$P < .01$

TABLE 2. - Allocation of Specially Qualified Teachers to Streams. - Forms 1 - 3.

H<sub>0</sub>. There is no difference between the allocation of Specially Qualified Teachers to streams and the allocation of non-Specially Qualified Teachers to streams.

H<sub>1</sub>. The higher streams receive a better allocation of Specially Qualified Teachers than the lower streams.

2.1. MATHEMATICS.

CLASSES TAUGHT BY	STREAMS				TOTAL	STREAMS		
	A	B	C	D		A+B	C+D	
S.Q.	20(48)	10(24)	8(19)	5(15)	43	30(36)	13(17)	$X^2=9.69$
N.S.Q.	22(52)	32(76)	34(81)	29(85)	117	54(64)	63(83)	d.f.=1
Total.	42	42	42	34	160	84	76	$P < .005$

2.2. ENGLISH.

S.Q.	20(48)	7(17)	8(19)	3(9)	38	27(32)	11(14)	$X^2=5.937$
N.S.Q.	22(52)	35(83)	34(81)	31(91)	122	57(68)	65(86)	d.f.=1
Total.	42	42	42	34	160	84	76	$P < .01$

2.3. SCIENCE.

S.Q.	23(54)	21(50)	9(21)	7(21)	60	44(52)	16(21)	$X^2=15.36$
N.S.Q.	19(46)	21(50)	33(79)	27(79)	100	40(48)	60(79)	d.f.=1
Total.	42	42	42	34	160	84	76	$P < .0005$

2.4. HISTORY.

S.Q.	35(83)	26(62)	23(55)	15(44)	99	61(83)	38(50)	$X^2=7.721$
N.S.Q.	7(17)	16(38)	19(45)	19(56)	61	23(27)	38(50)	d.f.=1
Total.	42	42	42	34	160	84	76	$P < .005$

2.5. GEOGRAPHY.

S.Q.	29(69)	23(54)	16(38)	15(36)	83	52(62)	31(41)	$X^2=6.304$
N.S.Q.	13(31)	19(46)	26(62)	19(64)	77	32(38)	45(59)	d.f.=1
Total.	42	42	42	34	160	84	76	$P < .01$

TABLE 3 - Head of Subject time to streams - Forms 1 - 3.

Ho. There is no difference between the allocation of Head of Subject time to streams and the allocation of non-Head of Subject time to streams.

H1. The higher streams receive a better allocation of Head of Subject time than the lower streams.

3.1. MATHEMATICS.

PERIODS PER

WEEK FROM	STREAMS				TOTAL	STREAMS.		
	A	B	C	D		A+B	C+D	
H.S.	108	70	24	5	207	178	29	$X^2=121.3$
N.H.S.	110	146	194	167	617	256	361	d.f.=1
Total.	218	216	218	172	824	434	390	$P < .0005$

3.2. ENGLISH.

H.S.	59	47	27	10	143	106	37	$X^2=31.73$
N.H.S.	160	170	192	168	690	330	360	d.f.=1
Total.	219	217	219	178	833	436	397	$P < .0005$

3.3. SCIENCE.

H.S.	72	49	17	18	156	121	35	$X^2=53.7$
N.H.S.	58	82	103	93	336	140	196	d.f.=1
Total.	130	131	120	111	492	261	231	$P < .0005$

3.4. HISTORY.

H.S.	62	41	49	42	194	103	91	$\chi^2 = .2828$ d.f.=1 P < .35 N.S.
N.H.S.	29	51	46	55	161	80	81	
Total.	91	92	95	77	355	183	172	

3.5. GEOGRAPHY.

H.S.	54	43	27	25	149	97	52	$\chi^2 = 17.7$ d.f.=1 P < .0005
N.H.S.	35	49	70	47	201	84	117	
Total.	89	92	97	72	350	181	169	

TABLE 4. - Allocation of Specially Qualified Teachers' Time to streams - Forms 1 - 3.

- Ho. There is no difference between the allocation of Specially Qualified Teachers' Time to streams and the allocation of Non-Specially Qualified Teachers' Time to streams.
- H1. The higher streams receive a better allocation of Specially Qualified Teachers' Time than the lower streams.

4.1. MATHEMATICS.

PERIODS PER

WEEK FROM	STREAMS				TOTAL	STREAMS		
	A	B	C	D		A+B	C+D	
S.Q.	101	62	45	21	229	163	66	$\chi^2 = 42.54$ d.f.=1 P < .0005
N.S.Q.	117	154	173	151	595	271	324	
Total.	218	216	218	172	824	434	390	

4.2. ENGLISH.

	A	B	C	D	TOTAL	A+B	C+D	
S.Q.	96	36	42	16	190	132	58	$X^2 = 28.07$
N.S.Q.	123	181	177	162	643	304	339	d.f.=1
Total.	219	217	219	178	833	436	397	$P < .0005$

4.3. SCIENCE.

	A	B	C	D	TOTAL	A+B	C+D	
S.Q.	68	61	25	16	170	129	41	$X^2 = 52.98$
N.S.Q.	62	70	95	95	322	132	190	d.f.=1
Total.	130	131	120	111	492	261	231	$P < .0005$

4.4. HISTORY.

	A	B	C	D	TOTAL	A+B	C+D	
S.Q.	71	65	59	34	229	136	93	$X^2 = 15.01$
N.S.Q.	20	27	36	43	126	47	79	d.f.=1
Total.	91	92	95	77	355	183	172	$P < .0005$

4.5. GEOGRAPHY.

	A	B	C	D	TOTAL	A+B	C+D	
S.Q.	61	45	33	28	167	106	61	$X^2 = 16.79$
N.S.Q.	28	47	64	44	183	75	108	d.f.=1
Total.	89	92	97	72	350	181	169	$P < .0005$

DATA FOR TABLES 5 AND 6.

ANALYSIS BY SUBJECT - FORM 4.

SUBJECT	YEAR / STREAMS.	NUMBER OF CLASSES.	TAUGHT BY HEAD OF S.	TAUGHT BY SP. QUAL.
MATHS	4A	14	8	8
	4B	14	3	7
	4C	14	1	0
	4D	10	1	1

SUBJECT	YEAR 4 STREAMS	NUMBER OF CLASSES.	TAUGHT BY HEAD OF S.	TAUGHT BY SP. QUAL.
ENGLISH	4A	14	10	6
	4B	14	3	6
	4C	14	1	4
	4D	10	0	1
<hr/>				
SCIENCE.	4A	14	12	10
	4B	11	9	7
	4C	11	0	2
	4D	8	2	2
<hr/>				
HISTORY.	4A	12	10	11
	4B	10	9	10
	4C	6	5	5
	4D	6	5	5
<hr/>				
GEOGRAPHY.	4A	14	12	11
	4B	10	5	4
	4C	6	6	5
	4D	6	4	5
<hr/>				

TABLE 5. - Allocation of Subject Heads to Streams - Form 4.

- Ho. There is no difference between the allocation of Subject Heads to streams and the allocation of non-Subject Heads to streams.
- H1. The higher streams receive a better allocation of Subject Heads than the lower streams.

Forms 4A + 4B V 4C + 4D .

MATHEMATICS	$X^2 = 5.0$	d.f. = 1	$P < .025$
ENGLISH	$X^2 = 9.679$	d.f.=1	$P < .005$
SCIENCE	$X^2 = 23.6$	d.f.= 1	$P < .001$
HISTORY AND GEOGRAPHY	Stream A v B + C + D so that fe is more than five		
	$X^2 = .91$	d.f. = 1	$P < .5$ N.S.

TABLE 6. - Allocation of Specially Qualified Teachers to streams - Form 4.

Ho. There is no difference between the allocation of Specially Qualified Teachers to streams and the allocation of non-Specially Qualified Teachers to streams.

H1. The higher streams receive a better allocation of Specially Qualified Teachers than the lower streams.

Forms 4A + 4B V 4C + 4D.

MATHEMATICS	$X^2 = 12.58$	d.f. = 1	$P < .0005$
ENGLISH	$X^2 = 1.981$	d.f. = 1	$P < .1$ N.S.
SCIENCE	$X^2 = 7.75$	d.f. = 1	$P < .005$
HISTORY	N.S.		
GEOGRAPHY	N.S.		

Notes for tables 5 & 6.

1. Number of classes differã in the various streams for the reasons
  - a - c ; a. not always a 'D' stream
  - b. some subjects are not compulsory in the 4th year for all streams.
  - c. subjects taught under a general title, e.g. 'topics'

to include History, Geography and other studies.

2. If the classes were not called 'A', 'B', 'C' and 'D', the time-table order was followed for grading purposes; e.g. if 4 General is placed fourth on the time-table then it is taken as the fourth stream.

TABLE 7. - Head of Subject time devoted to forms 1 - 4 v 5 & 6.

	COMPULSORY SCHOOL AGE			5TH FORM			6TH FORM		
	H.S.P.	NUMBER IN GROUP	PERIOD: PUPIL.	H.S.P.	NUMBER IN GROUP	PERIOD: PUPIL	H.S.P.	NUMBER IN GROUP	PERIOD: PUPIL
MATHS.	123	3397	1:27.6	36	269	1:7.5	25	18	1: .72
ENG.	108	3397	1:31.5	47	269	1:5.7	20	22	1:1.1
SCIENCE.	125	3352	1:26.8	46	221	1:4.8	18	8	1: .4
HIST.	121	2900	1:23.9	20	120	1:6	23	8	1: .4
GEOG.	96	3088	1:32.2	24	165	1:6.9	10	15	1:1.5

TABLE 8.\* Specially Qualified Teachers' Time devoted to forms 1 - 4 v 5 & 6.

	COMPULSORY SCHOOL AGE			5TH FORM			6TH FORM		
	S.Q.P.	NUMBER IN GROUP	PERIOD: PUPIL.	S.Q.P.	NUMBER IN GROUP	PERIOD: PUPIL.	S.Q.P.	NUMBER IN GROUP	PERIOD: PUPIL
MATHS.	209	3397	1:16.3	51	269	1:5.3	31	18	1: .58
ENG.	143	3397	1:23.8	31	269	1:8.7	14	22	1:1.6
SCIENCE.	112	3352	1:29.9	34	221	1:6.5	18	8	1: .4
HIST.	142	2900	1:20.4	24	120	1:5	23	8	1: .4
GEOR.	121	3088	1:25.5	35	165	1:4.7	21	15	1: .7

Notes for Tables 7 & 8.

1. The figures are for year 1967/8 only.
  2. The sample was limited to six schools.
  3. All streams were included, i.e. streams 'E' and 'F' in the odd school.
  4. H.S.P. = Head of Subject periods.
  5. S.Q.P. = Specially Qualified periods.
- 

TABLE 9. - Forms 4, 5 & 6 compared re Head of Subject Teaching.

	PERCENTAGE OF CLASSES TAUGHT BY THE HEAD OF THE SUBJECT.					
	6th	5th	4A	4B	4C	4D
1. MATHEMATICS	87.5	45	57	21	7	10
2. ENGLISH	87.5	48	71	21	7	0
3. SCIENCE	60	90	86	82	0	25
4. HISTORY	100	100	86	50	100	67
5. GEOGRAPHY	84	86	83	90	100	83

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Notes for Tables 9 & 10.

1. The figures are for the two year period 1966/7 and 1967/8.
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TABLE 10 - Forms 4, 5 & 6 compared re Specially Qualified teaching.

	PERCENTAGE OF CLASSES TAUGHT BY TEACHERS WHO ARE SPECIALLY QUALIFIED.					
	6th	5th	4A	4B	4C	4D
1. MATHEMATICS	100	61	57	50	0	10
2. ENGLISH	63	39	43	43	29	10
3. SCIENCE	80	61	71	63	18	25
4. HISTORY	100	100	79	40	83	83
5. GEOGRAPHY	100	91	91	100	100	83

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TABLE 11 - Availability of Head of Subject teaching in the basic subjects.

Based on the two year period, the periods of Head of Subject teaching compared with total teaching periods in the subject are as follows:

MATHEMATICS	27%
ENGLISH	25%
SCIENCE	45%
HISTORY	60%
GEOGRAPHY	53%

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TABLE 12 - Availability of Specially Qualified teaching in the basic subjects.

	GRADUATES.	GRADUATES OR SUPPLEMENTARY COURSE.
MATHEMATICS	11%	33%
ENGLISH	26%	26%
SCIENCE	15%	41%
HISTORY	68%	68%
GEOGRAPHY	49%	49%

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TABLE 13 - Qualifications of Subject Heads.

SCHOOL	MATHS.		ENGLISH.		SCIENCE.		HISTORY.		GEOGRAPHY.	
	66/7	67/8	66/7	67/8	66/7	67/8	66/7	67/8	66/7	67/8
A.	Q.	Q.	G.S.	G.S.	S.C.	S.C.	G.S.	G.S.	Q.	G.S.
B.	G.S.	G.S.	Q.	Q.	S.C.	S.C.	G.S.	G.S.	G.S.	G.S.
C.	D.M.	D.M.	G.S.	G.S.	Q.	Q.	G.S.	G.S.	G.S.	G.S.
D.	Q.	Q.	Q.	Q.	G.S.	G.S.	G.S.	G.S.	G.S.	G.S.
E.	D.M.	G.S.	G.S.	G.S.	G.S.	G.S.	G.S.	G.S.	S.Q.	S.Q.
F.	Q.	Q.	Q.	Q.	S.C.	S.C.	G.S.	G.S.	G.S.	G.S.
G.	G.	G.S.	Q.	Q.	Q.	Q.	G.S.	G.S.	G.S.	G.S.

Notes.

- Abbreviations: Q Qualified teacher.  
D.M. Diploma in mathematics.  
S.C. Supplementary course.  
G.S. Graduate in the subject.  
G. Graduate but not in the subject.  
S.Q. Specially qualified but not S.C. or G.S. i.e. failed degree but passed Geography at degree level.
-

TABLE 14 has been placed with the other analyses of variance - between Table 18 and 18A.

SCHOOLS INDIVIDUALLY.

TABLE 15 - Allocation of Subject Heads to streams - Forms 1 - 4.

Ho. There is no difference between the allocation of Heads of Subjects to streams and the allocation of non-Heads of Subject to streams.

H1. The higher streams receive a better allocation of Heads of Subjects than the lower streams.

CLASSES TAUGHT BY	STREAMS				TOTAL	STREAMS		
	A	B	C	D		A+B	C+D	
<u>SCHOOL A.</u>								
H.S.	26(65)	20(50)	10(25)	6(30)	62	46(57)	16(27)	$X^2=11.99$
N.H.S.	14(35)	20(50)	30(75)	14(70)	78	34(43)	44(73)	d.f.=1
Total.	40	40	40	20	140	80	60	$P < .005$

<u>SCHOOL B.</u>								
H.S.	24(62)	8(21)	8(21)	7(18)	47	32(41)	15(20)	$X^2=4.634$
N.H.S.	15(38)	31(79)	30(79)	31(82)	107	46(59)	61(80)	d.f.=1
Total.	39	39	38	38	154	78	76	$P < .025$

<u>SCHOOL C.</u>								
H.S.	20(50)	11(30)	13(38)	6(19)	50	31(40)	19(29)	$X^2=4.634$
N.H.S.	20(50)	26(70)	21(62)	26(81)	93	46(60)	47(71)	d.f.=1
Total.	40	37	34	32	143	77	66	$P < .025$

<u>SCHOOL D.</u>								
H.S.	20(50)	12(30)	3(8)	8(20)	43	32(40)	11(14)	$X^2=12.72$
N.H.S.	20(50)	28(70)	37(92)	32(80)	117	48(60)	69(86)	d.f.=1
Total.	40	40	40	40	160	80	80	$P < .0005$

SCHOOL E.

H.S.	15(39)	17(44)	6(17)	6(17)	44	32(41)	12(17)	$X^2=9.574$
N.H.S.	24(61)	22(56)	30(83)	30(83)	106	46(59)	60(83)	d.f.=1
Total.	39	39	36	36	150	78	72	$P < .005$

SCHOOL F.

H.S.	20(57)	11(32)	11(32)	12(34)	54	31(44)	23(33)	$X^2=5.788$
N.H.S.	15(43)	24(68)	24(68)	23(66)	86	39(56)	47(67)	d.f.=1
Total.	35	35	35	35	140	70	70	$P < .01$

A+B v C+D not significant.  $X^2$  result achieved by comparing A v B+C+D.

SCHOOL G.

H.S.	27(77)	22(63)	9(26)	5(50)	63	49(70)	14(31)	$X^2=15.18$
N.H.S.	8(23)	13(37)	26(74)	5(50)	52	21(30)	31(69)	d.f.=1
Total.	35	35	35	10	115	70	45	$P < .0005$

Notes.

1. As far as possible the first four years in each school have been analysed for two years in the five basic subjects, i.e.  $4 \times 2 \times 5 = 40$  classes for each stream. If the figures do not equal 40 this is due to : (a) no 'D' stream; (b) 4th form grouped in such a way that one cannot clearly state the situation e.g. History and Geography taught together; (c) 4th form optional subjects.

TABLE 16 - Allocation of Specially Qualified teachers to streams -  
Forms 1 - 4

H0. There is no difference between the allocation of Specially Qualified teachers to streams and the allocation of non-Specially Qualified teachers to streams.

H1. The higher streams receive a better allocation of Specially Qualified teachers than the lower streams.

CLASSES TAUGHT BY	STREAMS				TOTAL	STREAMS		
	A	B	C	D		A+B	C+D	
<u>SCHOOL A.</u>								
S.Q.	34(85)	27(67)	20(50)	7(35)	88	61(76)	27(45)	$X^2=13.03$
N.S.Q.	6(15)	13(33)	20(50)	13(65)	52	19(24)	33(55)	d.f.=1
Total.	40	40	40	20	140	80	60	$P < .0005$

<u>SCHOOL B.</u>								
S.Q.	25(64)	12(31)	12(31)	5(13)	54	37(47)	17(22)	$X^2=9.55$
N.S.Q.	14(36)	27(69)	26(68)	33(87)	100	41(53)	59(78)	d.f.=1
Total.	39	39	38	38	154	78	76	$P < .005$

<u>SCHOOL C.</u>								
S.Q.	16(40)	8(22)	9(26)	8(25)	41	24(31)	17(26)	$X^2=29.753$
N.S.Q.	24(60)	29(78)	25(74)	24(75)	102	53(69)	49(74)	d.f.=1
Total.	40	37	34	32	143	77	66	$P < .05$

$X^2$  result achieved by comparing A v B+C+D

<u>SCHOOL D.</u>								
S.Q.	20(50)	18(45)	12(30)	10(25)	60	38(48)	22(28)	$X^2=4.8$
N.S.Q.	20(50)	22(55)	28(70)	30(75)	100	42(52)	58(72)	d.f.=1
Total.	40	40	40	40	160	80	80	$P < .025$

<u>SCHOOL E.</u>								
S.Q.	24(62)	22(56)	16(47)	13(36)	75	46(59)	29(40)	$X^2=4.513$
N.S.Q.	15(38)	17(44)	20(53)	23(64)	75	32(41)	43(60)	d.f.=1
Total.	39	39	36	36	150	78	72	$P < .025$

<u>SCHOOL F.</u>								
S.Q.	15(43)	11(32)	10(29)	13(37)	49	26(37)	23(33)	$X^2=.12$
N.S.Q.	20(57)	24(68)	25(71)	22(63)	91	44(63)	47(67)	d.f.=1
Total.	35	35	35	35	140	70	70	N.S.

SCHOOL G.

S.Q.	19(54)	16(46)	11(32)	3(30)	49	35(50)	14(31)	$X^2=3.261$
N.S.Q.	16(46)	19(54)	24(68)	7(70)	66	35(50)	31(69)	d.f.=1
Total.	35	35	35	10	115	70	45	$P < .05$

TABLE 17 - Analysis of Distribution - Responsibility Post Holders v  
Other Teachers. Forms 1 - 4.

CLASSES TAUGHT BY	STREAMS				TOTAL	STREAMS		
	A	B	C	D		A+B	C+D	
<u>SCHOOL A.</u>								
R.P.	29(72)	25(62)	19(47)	14(70)	87	54(67)	33(55)	$X^2=1.774$
N.R.P.	11(28)	15(38)	21(53)	6(30)	53	26(33)	27(45)	d.f.=1
Total.	40	40	40	20	140	80	60	$P < .1$ N.S.

SCHOOL B.

R.P.	30(77)	13(33)	10(26)	13(34)	66	43(55)	23(30)	$X^2=8.73$
N.R.P.	9(23)	26(67)	28(74)	25(66)	88	35(45)	53(70)	d.f.=1
Total.	39	39	38	38	154	78	76	$P < .005$

SCHOOL C.

R.P.	36(90)	28(76)	23(68)	17(53)	104	64(83)	40(61)	$X^2=7.973$
N.R.P.	4(10)	9(24)	11(32)	15(47)	39	13(17)	26(39)	d.f.=1
Total.	40	37	34	32	143	77	66	$P < .005$

SCHOOL D.

R.P.	28(70)	20(50)	13(32)	13(32)	74	48(60)	26(32)	$X^2=11.09$
N.R.P.	12(30)	20(50)	27(68)	27(68)	86	32(40)	54(68)	d.f.=1
Total.	40	40	40	40	160	80	80	$P < .0005$

SCHOOL E.

R.P.	28(72)	25(64)	15(44)	16(47)	84	53(68)	31(46)	$X^2=8.435$
N.R.P.	11(28)	14(36)	21(56)	20(53)	66	25(32)	41(54)	d.f.=1
Total.	39	39	36	36	150	78	72	$P < .005$

SCHOOL F.

R.P.	28(80)	21(60)	20(57)	22(66)	91	49(70)	42(62)	$X^2=1.13$
N.R.P.	7(20)	14(40)	15(43)	13(34)	49	21(30)	28(38)	d.f.=1
Total.	35	35	35	35	140	70	70	$P < .15$ N.S.

SCHOOL G.

R.P.	32(92)	28(80)	28(80)	4(40)	92	60(86)	32(71)	$X^2=3.51$
N.R.P.	3(8)	7(20)	7(20)	6(60)	23	10(14)	13(29)	d.f.=1
Total.	35	35	35	10	115	70	45	$P < .05$

TABLE 18 - Two-way analysis of variance - by stream / by subject.

The following 'merit marks' (weightings) are used:

H.S.	+	S.Q.	+	EXTRA PAY	+	Q.T.	SCORES	5
H.S.			+	EXTRA PAY	+	Q.T.	SCORES	4
		S.Q.	+	EXTRA PAY	+	Q.T.	SCORES	3
		S.Q.			+	Q.T.	SCORES	2
				EXTRA PAY	+	Q.T.	SCORES	2
						Q.T.	SCORES	1

SCHOOL A.

Using the above scoring scheme the scores are as follows:

	A	B	C	TOTAL
MATHS	23	14	11	48
ENGLISH	22	23	19	64
SCIENCE	28	24	9	61
HISTORY	40	36	23	99
GEOGRAPHY	40	32	24	96
TOTAL	153	129	86	368

Correction Factor = 9028.2

Sum of squares due to difference between streams = 461

Sum of squares due to difference between subjects = 684.4

Total sum of squares = 1257.8

Residual sum of squares = 112.4

SOURCE OF VARIANCE	$\Sigma$ OF SQUARES	D.F.	MEAN SQUARE	F	PROBABILITY
Between streams	461	2	230.5	16.45	1%
Between subjects	684.4	4	171.1	12.2	1%
Residual	112.4	8	14		
Total	1257.8	14			

---

The mean ratings are :- for Streams, A = 30, B = 25.8, C = 17.2

for Subjects, Maths = 16

English = 21.3

Science = 20.3

Geography = 32

History = 33

For five subjects 'Standard Error' = 1.67

For three streams 'Standard Error' = 2.161

't' at 95% for S.S. 5 = 2.57, and significant difference =  $1.67 \times 2.57 = 4.2719$ .

't' at 95% for S.S. 3 = 3.18, and significant difference =  $2.161 \times 3.18 = 6.87$ .

Thus Maths, English and Science differ significantly from Geography and History. Maths also differs significantly from English.

Between streams, there are significant differences between 'A' and 'C' and between 'B' and 'C' but not between 'A' and 'B'.

---

SOURCE OF VARIANCE     $\Sigma$  OF SQUARES    D.F.    MEAN SQUARE    F    PROBABILITY

SCHOOL B.

Between streams	566.3	3	188.6	12.09	1%
Between subjects	34.7	2	17.3	1.1	N.S.
Residual	94.7	6	15.6		
Total	695.7	11			

---

SCHOOL C.

Between streams	247	3	82.3	5.3	5%
Between subjects	156	4	39	2.5	N.S.
Residual	188	12	15.6		
Total.	591	19			

---

SCHOOL D.

Between streams	426.6	3	142.2	9.67	1%
Between subjects	958.3	4	239.5	16.28	1%
Residual	176.9	12	14.7		
Total.	1561.8	19			

---

SCHOOL E.

Between streams	163.3	3	54.4	11.3	1%
Between subjects	258	2	129	26.87	1%
Residual	28.7	6	4.8		
Total	450	11			

---

SOURCE OF VARIANCE	OF SQUARES	D.F.	MEAN SQUARE	F	PROBABILITY
<u>SCHOOL F.</u>					
Between streams	119.2	3	39.7	2.0	N.S.
Between subjects	457.3	4	114.43	6.88	1%
Residual	199.3	12	16.6		
Total	775.8	19			

<u>SCHOOL G.</u>					
Between streams	163.4	2	81.7	3.65	N.S.
Between subjects	375	4	93.75	4.19	5%
Residual	178.6	8	22.33		
Total	717	14			

<u>SCHOOL H.</u>					
Between streams	8.7	2	2.9	.7	N.S.
Between subjects	7.7	3	2.63	.64	N.S.
Residual	24.6	6	4.1		
Total	31	11			

TABLE 14 - Two-way Analysis of Variance - by stream / by subject.

SCHOOLS COLLECTIVELY. (School H excluded as partly unstreamed).

Between streams	3816.2	2	1908.1	20.9	1%
Between subjects	1200.9	2	600.5	6.5	N.S.
Residual	364.5	4	91.1		
Total	5381.6	8			

Notes for Tables 14 & 18.

1. See Note 1 (Table 15). When the figures for streams or subjects are unequal the stream or subject, for the whole of the unequal year, has been omitted.

2. The usual method of dealing with unequal numbers is to cast out at random, until equal numbers remain, but this cannot be used if numbers are widely different.

---

TABLE 18A - Summary of Table 18.

SCHOOL	SUBJECTS		STREAMS	
	SIG.LEVEL.	SIG.DIFF.(at least 5%)	SIG.LEVEL.	SIG.DIFF.(at least 5%)
A	1%	M < S < E v G < H, M v E.	1%	A v C, B v C
B	N.S.	Trend E < M < S	1%	A v B > C > D
C	N.S.	Trend G < E < M = S < H	5%	A v B > C > D
D	1%	E < M v S < G < H S v G < H	1%	A > B v C > D
E	1%	M < E v S	1%	A > B v C > D
F	1%	E < M v G < H S v H	N.S.	Trend A > B > C But: D > B or C
G	**5%	E < M v S < G < H	N.S.	Trend A > B > C
H	N.S.	Trend E < S < M < G	N.S.	Trend A > B > C

Note.

1. Reducing the analysis to a one factor analysis in cases where only one of the 'F' values is significant, School G(\*\*) fails to achieve the 5% level. (See 'Statistical Methods and Formulae' by C.G.Lambe, English Univ. Press. P 107 - 109.)

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SCHOOLS COLLECTIVELY.

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TABLE 19 - Teaching periods : Pupils - Forms 1 - 6.

Based on six schools for two years.

Year	No. of Pupils	No. of periods per week in All subjects.	Ratio 1 : n i.e. 1 Pupil : Periods.
1st	1728	2201	1 : 1.27
2nd	1615	2127	1 : 1.32
3rd	1698	2316	1 : 1.36
4th	1651	2623	1 : 1.59
5th	498	1213	1 : 2.44
6th	121	418	1 : 3.45

---

TABLE 20 - Teaching periods : Pupils - Lowest stream analysis.

Based on six schools for two years.

Year	No of Pupils in the Lowest stream	No. of periods per week in All subjects	Ratio 1 : i.e. 1 Pupil : Periods.
1st	306	499	1 : 1.63
2nd	307	497	1 : 1.62
3rd	306	524	1 : 1.71

---

TABLE 21 - Numerical size of groups in the 5th and 6th forms.

SUBJECT	5TH FORM MEDIAN SIZE.	6TH FORM ACTUAL GROUP SIZES.				
MATHEMATICS.	25	2	4	5	4	8
ENGLISH.	22	2	6	6	8	
GEOGRAPHY.	18	3	5	7		
HISTORY.	22	1	2	2	4	1
SCIENCE.	15	2	4	4	2	
TYPING.	14					
TECH. DR.	14	5				
DCM. SC.	9	1				
M/WORK.	13					
N/WORK.	11					
FRENCH.	11	1				
COMMERCE.	7					
SHORTHAND.	10					
W/WORK.	13					
RUSSIAN.	6					

Notes.

1. The figures are for one year only; other years were not available.
2. Figures for School I have been included although School I has not been used in other parts of the study due to its unusual 'division by buildings'; three buildings in different parts of the County Borough.

TABLE. 22. - Mobility between streams.

Calculated from the first four questions of the questionnaire.

Movement during the first year has been ignored.

The period examined is the end of the first year to the end of the third year.

3rd YEAR QUESTIONNAIRES.

Downward mobility per annum	4.05%
Upward mobility per annum	8.12%
Streams 'A' & 'B' down to 'C' & 'D'	7.1% during the two years.
Streams 'D' & 'C' up to 'A' & 'B'	10.1% during the two years.
Only 1 pupil down from 'A' to 'C' or 'D'	
Only 1 pupil from 'D' up to 'A' or 'B'	

4th YEAR QUESTIONNAIRES.

Downward mobility per annum	8.8%
Upward mobility per annum	10.4%
Stream 'A' & 'B' down to 'C' & 'D'	10.7%
Streams 'C' & 'D' up to 'A' & 'B'	11.8%

TOTAL MOBILITY 22.2% i.e.  $\frac{229}{1030}$  DURING THE TWO YEAR PERIOD.

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APPENDIX TWO

TABLES FOR SECTION 2 OF THE STUDY.

THE CASE FOR THE LOWER STREAMS.

TABLE 23 - Staying at School for a fifth year. ÷ Schools Collectively.

Qu. 'I am staying at school for a fifth year'.

3rd Year Sample	STREAMS A+B	C+D	4th Year Sample	STREAMS A+B	C+D
Yes	%	67.5		79.2	18.7
No	%	19.3		19.1	73.4
Don't know	%	13.2		1.7	7.9

TABLE 24 - School Attendance.

Four schools' registers were examined for the two terms, Autumn and Spring, of year 1978-68. The attendances were extracted in class intervals of five and then split at the 90% level, i.e. pupils who averaged more than one absence a week and pupils who averaged less than one absence a week.

H<sub>0</sub>. There is no difference between attendance of pupils in the higher streams and pupils in the lower streams.

H<sub>1</sub>. The higher stream pupils have a better attendance record than the lower stream pupils.

The results are succinctly as follows:

YEAR	SCH A	SCH B	SCH C	SCH F	SCH A	SCH B	SCH C	SCH F
	AUTUMN	AUTUMN	AUTUMN	AUTUMN	SPRING	SPRING	SPRING	SPRING
1st	$X^2=4.583$	.3221	6.43	.5112	5.857	.03111	13.11	.3726
	$P < .025$	N.S.	.01	N.S.	.01	N.S.	.0005	N.S.
2nd	$X^2=12.74^*$	4.978	14.11	N.S.O.W.	2.423*	4.786	12.52	1.088
	$P < .005$	.025	.0005	N.S.	N.S.**	.025	.0005	N.S.
					.0052			

YEAR	SCH A	SCH B	SCH C	SCH E	SCH A	SCH B	SCH C	SCH F
	AUTUMN	AUTUMN	AUTUMN	AUTUMN	SPRING	SPRING	SPRING	SPRING
3rd	$X^2=3.634^*$	4.673	22.83	6.032	1.363*	14.2	18.06	7.796
	$P < .05$	.025	.0005	.01	N.S.**	.0005	.0005	.005
					.0233			
4th	$X^2=13.41$	9.949	26.34	1.695	10.16	25.51	11.83	11.18
	$P < .0005$	.005	.0005	N.S.**	.005	.0005	.0005	.0005
				.0197				

Notes.

- \* means that stream 'A' has been compared with the other streams ('A' v 'B' + 'C')
- \*\* means that the results are not shown to be significant by the Chi-square test but that significance is achieved if the more powerful Mann-Whitney U test is applied.

TABLE 25 - Frequency of Homework.

Qu. 'I do homework.....never / sometimes / often'.

Ho. Frequency of doing homework is not stream related.

H1. The higher streams will do homework more regularly than the lower streams

SCHOOL A - 3rd year.

	A	B	C	D	TOTAL	A+B	C+D	
NEVER	0(0)	1(2)	7(32)	- 8	1(4)	7(32)	$X^2=31.82$	
S/TIMES	6(23)	4(15)	14(63)	- 24	10(19)	14(63)	d.f.=1	
OFTEN	20(77)	21(81)	1(5)	- 42	41(79)	1(5)	$P < .0005$	
TOTAL	26	26	22	- 74	52	22	N+S v O	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL B - 3rd year.</u>								
NEVER	-	-	2(8)	4(14)	6	-	-	$X^2=14.8$
S/TIMES	7(29)	11(52)	16(70)	19(68)	53	18(40)	35(68)	d.f.=1
OFTEN	17(71)	10(48)	5(22)	5(18)	37	27(60)	10(20)	$P < .0005$
TOTAL	24	21	23	28	96	45	51	

<u>SCHOOL C - 3rd year.</u>								
NEVER	-	-	1(3)	3(14)	4	-	4(8)	$X^2=6.631$
S/TIMES	6(19)	11(37)	13(43)	10(48)	40	17(28)	23(45)	d.f.=1
OFTEN	26(81)	19(63)	16(54)	8(38)	69	45(72)	24(47)	$P < .01$
TOTAL	32	30	30	21	113	62	51	

<u>SCHOOL D - 3rd year.</u>								
NEVER	-	2(6)	1(3)	1(5)	4	2(3)	2(4)	$X^2=3.254$
S/TIMES	5(15)	11(37)	14(47)	7(37)	37	16(26)	21(43)	d.f.=1
OFTEN	28(85)	17(57)	15(50)	11(58)	71	45(71)	26(53)	$P < .05$
TOTAL	33	30	30	19	112	63	49	

<u>SCHOOL F - 3rd year.</u>								
NEVER	-	-	-	4(21)	4	-	4(10)	$X^2=7.295$
S/TIMES	20(59)	13(45)	14(64)	15(79)	62	33(52)	29(71)	d.f.=1
OFTEN	14(41)	16(59)	8(36)	-	38	30(48)	8(19)	$P < .005$
TOTAL	34	29	22	19	104	63	41	

<u>SCHOOL H - 3rd year.</u>								
NEVER	-	-	-	-	-	-	-	
S/TIMES	11(34)	20(65)	17(71)	-	48	31(49)	17(71)	$X^2=3.111$
OFTEN	21(66)	11(35)	7(29)	-	39	32(51)	7(29)	$P < .05$
TOTAL	32	31	24	-	87	63	24	

WHOLE SAMPLE 3rd year  $X^2=54.08$  d.f.=1  $P < .0005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 4th year.</u>								
NEVER	-	2(6)	14(35)		16	2(3)	14(35)	$X^2=18.34$
S/TIMES	12(36)	20(65)	24(60)		56	32(50)	24(60)	d.f.=1
OFTEN	21(64)	9(29)	2(5)		32	30(47)	2(5)	$P < .0005$
TOTAL	33	31	40		104	64	40	

<u>SCHOOL B - 4th year.</u>								
NEVER	1(3)	-	4(11)	13(41)	18	1(2)	17(25)	$X^2=47.12$
S/TIMES	6(18)	9(29)	23(64)	18(56)	56	15(23)	41(60)	d.f.=1
OFTEN	27(79)	22(71)	9(25)	1(3)	59	49(75)	10(15)	$P < .0005$
TOTAL	34	31	36	32	133	65	68	

<u>SCHOOL C - 4th year.</u>								
NEVER	-	-	1(3)	2(9)	3	-	3(6)	$X^2=6.132$
S/TIMES	13(38)	6(23)	17(59)	9(41)	45	19(32)	26(51)	d.f.=1
OFTEN	21(62)	20(77)	11(38)	11(50)	63	41(68)	22(43)	$P < .01$
TOTAL	34	26	29	22	111	60	51	

<u>SCHOOL D - 4th year.</u>								
NEVER	1(3)	1(3)	6(21)	6(24)	14	2(3)	12(22)	$X^2=15.55$
S/TIMES	10(30)	9(31)	13(45)	14(56)	46	19(31)	27(50)	d.f.=1
OFTEN	22(67)	19(66)	10(34)	5(20)	56	41(66)	15(28)	$P < .0005$
TOTAL	33	29	29	25	116	62	54	

<u>SCHOOL F - 4th year.</u>								
NEVER	-	-	2(10)	8(40)	10	-	10(26)	$X^2=36.98$
S/TIMES	6(20)	6(27)	15(80)	10(50)	37	12(23)	25(64)	d.f.=1
OFTEN	24(80)	16(73)	2(10)	2(10)	44	40(77)	4(10)	$P < .0005$
TOTAL	30	22	19	20	91	52	39	

WHOLE SAMPLE 4th year  $X^2=112.3$  d.f.=1  $P < .0005$

TABLE 26 - Failure to do Homework.

Qu. 35. 'I usually do my homework if it is set.'

Ho. Failure to do homework is not stream related.

H1. The higher streams will fail to do homework set less frequently than the lower streams.

SCHOOL A - 3rd year.

	A	B	C	D	TOTAL	A+B	C+D	
YES	24(93)	24(93)	16(72)		64	48(93)	16(72)	$X^2 = .01886$
NO	2(7)	2(7)	5(23)		1	4(7)	5(23)	d.f.=1
D/KNOW	-	-	1(5)		1	-	1(5)	$P < .45$ N.S.
TOTAL	26	26	22		74	52	22	Y v N + D.K.

SCHOOL B - 3rd year.

YES	24(100)	16(76)	16(70)	25(89)	81	40(89)	41(80)	$X^2 = .7439$
NO	-	5(24)	3(13)	3(11)	11	5(11)	6(12)	d.f.=1
D/KNOW	-	-	4(17)	-	4	-	4(8)	$P < .25$ N.S.
TOTAL	24	21	23	28	96	45	51	

SCHOOL C - 3rd year.

YES	29(91)	25(84)	29(97)	13(62)	96	54(87)	42(82)	$X^2 = .1914$
NO	3(9)	4(13)	1(3)	8(38)	16	7(11)	9(18)	d.f.=1
D/KNOW	-	1(3)	-	-	1	1(2)	-	$P < .35$ N.S.
TOTAL	32	30	30	21	113	62	51	

SCHOOL D - 3rd year.

YES	33(100)	22(74)	25(84)	17(90)	97	55(88)	42(86)	$X^2 = .1777$
NO	-	6(20)	5(16)	2(10)	13	6(9)	7(14)	d.f.=1
D/KNOW	-	2(6)	-	-	2	2(3)	-	$P < .35$ N.S.
TOTAL	33	30	30	19	112	63	49	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F - 3rd year.</u>								
YES	26(76)	21(72)	21(96)	17(90)	85	47(74)	38(93)	
NO	6(18)	2(7)	-	-	8	8(13)	-	
D/KNOW	2(6)	6(21)	1(4)	2(10)	11	8(13)	3(7)	N.S.O.W.
TOTAL	34	29	22	19	104	63	41	

<u>SCHOOL H - 3rd year.</u>								
YES	27(85)	24(77)	20(84)		71	51(82)	20(84)	
NO	2(6)	3(10)	3(12)		8	5(8)	3(12)	
D/KNOW	3(9)	4(13)	1(4)		8	7(11)	1(4)	N.S.O.W.
TOTAL	32	31	24		87	63	24	

WHOLE SAMPLE 3rd year : N.S.O.W.

<u>SCHOOL A 4th year.</u>								
YES	26(79)	25(81)	23(58)		74	51(80)	23(58)	$X^2=4.871$
NO	6(18)	6(18)	11(27)		23	12(18)	11(27)	d.f.=1
D/KNOW	1(3)	-	6(15)		7	1(2)	6(15)	$P < .025$
TOTAL	33	31	40		104	64	40	

<u>SCHOOL B - 4th year.</u>								
YES	30(88)	28(91)	29(80)	15(47)	102	58(90)	44(65)	$X^2=12.39$
NO	4(12)	-	6(17)	17(53)	27	4(6)	23(34)	d.f.=1
D/KNOW	-	3(9)	1(3)	-	4	3(4)	1(1)	$P < .0005$
TOTAL	34	31	36	32	133	65	68	

<u>SCHOOL C - 4th year.</u>								
YES	30(88)	20(78)	19(67)	22(100)	91	50(84)	41(80)	$X^2=.02304$
NO	2(6)	3(11)	6(20)	-	11	5(8)	6(12)	d.f.=1
D/KNOW	2(6)	3(11)	4(13)	-	9	5(8)	4(8)	$P < .45$ N.S.
TOTAL	34	26	29	22	111	60	51	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D - 4th year.</u>								
YES	25(76)	23(80)	22(76)	19(76)	89	48(78)	41(76)	$X^2 = .0009228$
NO	1(3)	3(10)	6(21)	6(24)	16	4(6)	12(22)	d.f.=1
D/KNOW	7(21)	3(10)	1(3)	-	11	10(16)	1(2)	$P < .1$ N.S.
TOTAL	33	29	29	25	116	62	54	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F - 4th year.</u>								
YES	25(84)	20(91)	10(53)	18(90)	73	45(86)	28(72)	$X^2 = 2.185$
NO	3(10)	2(9)	9(47)	2(10)	16	5(10)	11(28)	d.f.=1
D/KNOW	2(6)	-	-	-	2	2(4)	-	$P < .1$ N.S.
TOTAL	30	22	19	20	91	52	39	

WHOLE SAMPLE 4th year  $X^2 = 12.38$  d.f.=1  $P < .0005$

TABLE 27 - Desire for more Homework - Schools Collectively.

Qu.36 'I should like more homework than I am set.'

Year 3 4.3 % of 'A' & 'B' streams desired more homework.  
20 % of 'C' & 'D' streams desired more homework.

Year 4 6.9 % of 'A' & 'B' streams desired more homework.  
15.5 % of 'C' & 'D' streams desired more homework.

**TABLE 28 - Truancy.**

Qu.12 'I sometimes stay away from school without good reason.'

Ho. Truancy is not stream related.

H1. Fewer higher stream pupils, than lower stream pupils, truant.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year</u>								
YES	7(27)	10(38)	13(59)		30	17(33)	13(59)	$X^2=3.441$
NO	18(69)	16(62)	5(23)		39	34(65)	5(23)	d.f.=1
D/KNOW	1(4)	-	4(18)		5	1(2)	4(18)	$P < .05$
TOTAL	26	26	22		74	52	22	Y v N + D.K.

SCHOOL B - 3rd year.

YES	1(4)	4(19)	9(39)	13(46)	27	5(11)	22(43)	$X^2=10.6$
NO	23(96)	16(76)	14(61)	15(54)	68	39(87)	29(57)	d.f.=1
D/KNOW	-	1(5)	-	-	1	1(2)	-	$P < .005$
TOTAL	24	21	23	28	96	45	51	

SCHOOL C - 3rd year.

YES	2(6)	6(20)	5(10)	8(38)	21	8(13)	13(26)	$X^2=2.157$
NO	29(91)	24(80)	22(74)	11(52)	86	53(85)	33(64)	d.f.=1
D/KNOW	1(3)	-	3(10)	2(10)	6	1(2)	5(10)	$P < .1$ N.S.
TOTAL	32	30	30	21	113	62	51	

SCHOOL D - 3rd year.

YES	2(6)	4(13)	5(16)	4(21)	15	6(9)	9(18)	$X^2=1.174$
NO	31(94)	25(84)	25(84)	14(74)	95	56(89)	39(80)	d.f.=1
D/KNOW	-	1(3)	-	1(5)	2	1(2)	1(2)	$P < .15$ N.S.
TOTAL	33	30	30	19	112	63	49	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F- 3rd year.</u>								
YES	10(29)	4(13)	7(32)	7(32)	28	14(22)	14(34)	$X^2=1.24$
NO	24(71)	24(84)	15(68)	11(58)	74	48(76)	26(64)	d.f.=1
D/KNOW	-	1(3)	-	1(5)	2	1(2)	1(2)	$P < .15$ N.S.
TOTAL	34	29	22	19	104	63	41	

<u>SCHOOL H - 3rd year.</u>								
YES	3(9)	4(13)	8(33)		15	7(11)	8(33)	$X^2=5.712$
NO	27(85)	27(87)	14(59)		68	54(86)	14(59)	d.f.=1
D/KNOW	2(6)	-	2(8)		4	2(3)	2(8)	$P < .01$
TOTAL	32	31	24		87	63	24	

WHOLE SAMPLE 3rd year  $P < .0005$

<u>SCHOOLS C+D+F</u>								
YES					167	28	36	$X^2=5.202$
NO					263	159	104	d.f.=1
D/KNOW								
TOTAL					327	187	140	$P < .025$

<u>SCHOOL A - 4th year.</u>								
YES	7(21)	6(19)	26(65)		39	13(20)	26(65)	$X^2=19.1$
NO	26(79)	25(81)	14(35)		65	51(80)	14(35)	d.f.=1
D/KNOW	-	-	-		-	-	-	$P < .0005$
TOTAL	33	31	40		104	64	40	

<u>SCHOOL B - 4th year.</u>								
YES	9(25)	3(9)	10(27)	10(31)	32	12(18)	20(29)	$X^2=1.619$
NO	25(73)	28(91)	26(73)	22(69)	101	53(82)	48(71)	d.f.=1
D/KNOW	-	-	-	-	-	-	-	$P < .15$ N.S.
TOTAL	34	31	36	32	133	65	68	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL C - 4th year.</u>								
YES	3( 9)	1( 3)	11(38)	3(13)	18	4( 6)	14(28)	$X^2=7.286$
NO	31(91)	24(94)	16(56)	19(87)	90	55(92)	35(68)	d.f.=1
D/KNOW	-	1( 3)	2( 6)	-	3	1( 2)	2( 4)	$P < .005$
TOTAL	34	26	29	22	111	60	51	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D - 4th year.</u>								
YES	5(15)	4(14)	4(14)	10(40)	23	9(14)	14(26)	$X^2=3.111$
NO	28(85)	24(83)	24(83)	15(60)	91	52(84)	39(72)	d.f.=1
D/KNOW	-	1( 3)	1( 3)	-	2	1( 2)	1( 2)	$P < .05$
TOTAL	33	29	29	25	116	62	54	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F - 4th year.</u>								
YES	5(17)	3(13)	6(32)	6(30)	20	8(15)	12(31)	$X^2=1.904$
NO	23(77)	19(87)	13(68)	14(70)	69	42(81)	27(69)	d.f.=1
D/KNOW	2(6)	-	-	-	2	2( 4)	-	$P < .1$ N.S.
TOTAL	30	22	19	20	91	52	39	

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 29 - School Orientation test.

Ho. There is no difference between the median scores of the groups.

H1. The median of the upper streams is higher than that of the lower streams.

Statistical Test.

Nonparametric - 1. The data does not meet the conditions laid down in Siegal (60) P.19. for use of the 't' test.

2. Siegal gives the following warning: 'The properties of an ordinal scale are not isomorphic to the numerical system known as

arithmetic. When only the rank order of scores is known, means and standard deviations found on the scores themselves are in error to the extent that the successive intervals (distances between classes) on the scale are not equal. When parametric techniques are used with such data, any decisions about hypotheses are doubtful.'

The ratings constitute ordinal measures at best; thus a nonparametric test is appropriate.

Test chosen - Median Test.

Formula: 
$$X^2 = \frac{N(|AD - BC| - N/2)^2}{(A+B)(C+D)(A+C)(B+D)}$$
 incorporating a correction for continuity, as in Table 1. (60.P 114).

since

'  $n_1 + n_2$  is larger than 40 '.

Since scores fall at the combined median the scores have been dichotomized as: those scores which exceed the median and those which do not.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
EXCEEDED M	15(58)	14(54)	8(36)		37	29(56)	8(36)	$X^2=1.617$
M & BELOW	11(42)	12(46)	14(64)		37	23(44)	14(64)	d.f.=1
TOTAL	26	26	22		74	52	22	$P < .15$ N.S.

By Mann-Whitney U test -  $P < .0048$

SCHOOL B - 3rd year.

EXCEEDED M	22(91)	8(38)	7(30)	7(25)	44	30(67)	14(27)	$X^2=13.26$
M & BELOW	2(9)	13(62)	16(70)	21(75)	52	15(33)	37(73)	d.f.=1
TOTAL	24	21	23	28	96	45	51	$P < .0005$

SCHOOL C - 3rd year.

EXCEEDED M	20(63)	12(40)	16(53)	6(28)	54	36(58)	18(35)	$X^2=4.929$
M & BELOW	12(37)	14(47)	18(60)	15(72)	59	26(42)	33(65)	d.f.=1
TOTAL	32	30	30	21	113	62	51	$P < .025$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D - 3rd year.</u>								
EXCEED M	20(61)	16(53)	9(30)	7(37)	52	36(57)	16(33)	$X^2=5.698$
M & BELOW	13(39)	14(47)	21(70)	12(63)	60	27(43)	33(67)	d.f.=1
TOTAL	33	30	30	19	112	63	49	$P < .01$

<u>SCHOOL F 3rd year.</u>								
EXCEED M	21(62)	12(41)	10(45)	7(37)	50	33(53)	17(42)	$X^2=.7886$
M & BELOW	13(38)	17(59)	12(55)	12(63)	54	30(47)	24(58)	d.f.=1
TOTAL	34	29	22	19	104	63	41	$P < .25$ N.S.

A V B+C+D  $X^2=3.020$   $P < .05$

<u>SCHOOL H - 3rd year.</u>								
EXCEED M	18(56)	18(58)	6(25)		42	36(57)	6(25)	$X^2=5.962$
M & BELOW	14(44)	13(42)	18(75)		45	27(43)	18(75)	d.f.=1
TOTAL	32	31	24		87	63	24	$P < .01$

WHOLE SAMPLE 3rd year  $P < .0005$

<u>SCHOOL A - 4th year.</u>								
EXCEED M	24(73)	17(55)	8(20)		49	41(64)	8(20)	$X^2=17.45$
M & BELOW	9(27)	14(45)	32(80)		55	23(36)	32(80)	d.f.=1
TOTAL	33	31	40		104	64	40	$P < .0005$

<u>SCHOOL B - 4th year.</u>								
EXCEED M	27(79)	19(61)	13(36)	4(13)	63	46(71)	17(25)	$X^2=26.1$
M & BELOW	7(21)	12(39)	23(64)	28(87)	70	19(29)	51(75)	d.f.=1
TOTAL	34	31	36	32	133	65	68	$P < .0005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL C - 4th year.</u>								
EXCEED M	24(71)	13(50)	11(38)	7(32)	55	37(62)	18(36)	$X^2=6.648$
M & BELOW	10(29)	13(50)	18(62)	15(68)	56	23(38)	33(64)	d.f.=1
TOTAL	34	26	29	22	111	60	51	$P < .01$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D - 4th year.</u>								
EXCEED M	25(76)	18(62)	10(34)	3(12)	56	43(69)	13(24)	$X^2=19.98$
M & BELOW	8(24)	11(38)	19(66)	22(88)	60	19(31)	41(76)	d.f.=1
TOTAL	33	29	29	25	116	62	54	$P < .0005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F - 4th year.</u>								
EXCEED M	20(66)	12(55)	8(42)	4(20)	44	32(62)	12(31)	$X^2=7.276$
M & BELOW	10(34)	10(45)	11(58)	16(80)	47	20(38)	27(69)	d.f.=1
TOTAL	30	22	19	20	91	52	39	$P < .005$

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 30 - Attitude to Class Work. (Qu. 5 - 10).

Ho. There is no difference between the median scores of the two groups.

H1. The median score of the upper streams is higher than that of the lower streams.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
EXCEED M	19(73)	11(42)	6(27)		36	30(58)	6(27)	$X^2=4.574$
M & BELOW	7(27)	15(58)	16(73)		38	22(42)	16(73)	d.f.=1
TOTAL	26	26	22		74	52	22	$P < .025$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL B - 3rd year.</u>								
EXCEED M	15(62)	12(57)	9(39)	9(32)	45	27(60)	18(35)	$X^2=4.91$
M & BELOW	9(38)	9(43)	14(61)	19(68)	51	18(40)	33(65)	d.f.=1
TOTAL	24	21	23	28	96	45	51	$P < .025$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL C - 3rd year.</u>								
EXCEED M	24(75)	14(47)	12(40)	5(24)	55	38(61)	17(33)	$X^2=7.661$
M & BELOW	8(25)	16(53)	18(60)	16(76)	58	24(39)	34(67)	d.f.=1
TOTAL	32	30	30	21	113	62	51	$P < .005$

<u>SCHOOL D - 3rd year.</u>								
EXCEED M	21(64)	21(70)	8(26)	3(16)	53	42(67)	11(22)	$X^2=19.86$
M & BELOW	12(36)	9(30)	22(74)	16(94)	59	21(33)	38(78)	d.f.=1
TOTAL	33	30	30	19	112	63	49	$P < .0005$

<u>SCHOOL F - 3rd year.</u>								
EXCEED M	20(59)	13(45)	9(41)	10(53)	52	33(41)	19(47)	$X^2=.1610$
M & BELOW	14(41)	16(55)	13(59)	9(47)	52	30(47)	22(53)	d.f.=1
TOTAL	34	29	22	19	104	63	41	$P < .35$ N.S.

<u>SCHOOL H - 3rd year.</u>								
EXCEED M	19(59)	16(52)	8(33)		43	35(55)	8(33)	$X^2=2.661$
M & BELOW	13(41)	15(48)	16(67)		44	28(45)	16(67)	d.f.=1
TOTAL	32	31	24		87	63	24	$P < .1$ N.S.

Using Kolmogorov - Smirnov test for large samples (1 tailed)

If  $X^2$  approximation used with smaller samples then conservative (and  $n_1$  need not equal  $n_2$ )

$$X^2 = 4D^2 \frac{n_1 n_2}{n_1 + n_2} \quad X^2 = 7.34 \quad d.f. = 2 \quad P < .05$$

WHOLE SAMPLE 3rd year  $P < .0005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A</u> - 4th year.								
EXCEED M	21(64)	19(61)	12(30)		52	40(63)	12(30)	$X^2=9.139$
M & BELOW	12(36)	12(39)	28(70)		52	24(37)	28(70)	d.f.=1
TOTAL	33	31	40		104	64	40	$P < .005$

<u>SCHOOL B</u> - 4th year.								
EXCEED M	23(67)	16(52)	19(53)	8(25)	66	39(60)	27(40)	$X^2=3.83$
M & BELOW	11(33)	15(48)	17(47)	24(75)	67	26(40)	41(60)	d.f.=1
TOTAL	34	31	36	32	133	65	68	$P < .05$

<u>SCHOOL C</u> - 4th year.								
EXCEED M	22(65)	12(46)	9(31)	3(13)	47	34(58)	12(24)	$X^2=11.14$
M & BELOW	12(35)	14(54)	20(69)	19(87)	65	26(42)	39(76)	d.f.=1
TOTAL	34	26	29	22	111	60	51	$P < .0005$

<u>SCHOOL D</u> - 4th year.								
EXCEED M	26(79)	15(53)	11(38)	2(8)	54	41(66)	13(24)	$X^2=18.86$
M & BELOW	7(21)	14(47)	18(62)	23(92)	62	21(34)	41(76)	d.f.=1
TOTAL	33	29	29	25	116	62	54	$P < .0005$

<u>SCHOOL F</u> - 4th year.								
EXCEED M	23(77)	13(57)	5(26)	4(20)	45	36(69)	9(23)	$X^2=17.18$
M & BELOW	7(23)	9(43)	14(74)	16(80)	46	16(31)	30(77)	d.f.=1
TOTAL	30	22	19	20	91	52	39	$P < .0005$

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 31 - Attachment to School - Desire to Leave. (Qu. 11 - 16).

Ho. There is no difference between the median scores of the two groups.

H1. The median score of the upper streams is higher than that of the lower streams.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
EXCEED M	18(69)	11(42)	6(27)		35	29(56)	6(27)	$X^2=4.05$
M & BELOW	8(31)	15(58)	16(73)		39	23(44)	16(73)	d.f.=1
TOTAL	26	26	22		74	52	22	$P < .025$
<u>SCHOOL B - 3rd year.</u>								
EXCEED M	21(87)	13(62)	6(26)	8(29)	48	34(76)	14(27)	$X^2=20.24$
M & BELOW	3(13)	8(38)	17(74)	20(71)	48	11(24)	37(73)	d.f.=1
TOTAL	24	21	23	28	96	45	51	$P < .0005$
<u>SCHOOL C - 3rd year.</u>								
EXCEED M	23(72)	14(47)	13(43)	6(24)	56	37(60)	19(38)	$X^2=3.258$
M & BELOW	9(28)	16(53)	17(57)	15(76)	57	25(40)	32(62)	d.f.=1
TOTAL	32	30	30	21	113	62	51	$P < .05$
<u>SCHOOL D - 3rd year.</u>								
EXCEED M	21(64)	14(47)	10(34)	5(26)	50	35(56)	15(31)	$X^2=5.967$
M & BELOW	12(36)	16(53)	20(66)	14(74)	62	28(44)	34(69)	d.f.=1
TOTAL	33	30	30	19	112	63	49	$P < .01$
<u>SCHOOL F - 3rd year.</u>								
EXCEED M	18(53)	13(45)	10(45)	7(37)	48	31(49)	17(41)	$X^2=.3282$
M & BELOW	16(47)	16(55)	12(55)	12(63)	56	32(51)	24(59)	d.f.=1
TOTAL	34	29	22	19	104	63	41	$P < .35$
<u>SCHOOL H - 3rd year.</u>								
EXCEED M	19(59)	13(42)	7(29)		39	32(51)	7(29)	$X^2=2.471$
M & BELOW	13(41)	18(58)	17(71)		48	31(49)	17(71)	d.f.=1
TOTAL	32	31	24		87	63	24	$P < .1$ N.S.
A V B + C	$X^2=3.436$		$P < .05$				223	

WHOLE SAMPLE 3rd year  $P < .0005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 4th year.</u>								
EXCEED M	21(64)	15(48)	7(17)		43	36(56)	7(17)	$X^2=13.68$
M & BELOW	12(36)	16(52)	33(83)		61	28(44)	33(83)	d.f.=1
TOTAL	33	31	40		104	64	40	$P < .0005$

<u>SCHOOL B - 4th year.</u>								
EXCEED M	26(76)	22(71)	11(30)	5(16)	64	48(74)	16(23)	$X^2=31.71$
M & BELOW	8(24)	9(29)	25(70)	27(84)	69	17(26)	52(77)	d.f.=1
TOTAL	34	31	36	32	133	65	68	$P < .0005$

<u>SCHOOL C - 4th year.</u>								
EXCEED M	25(73)	17(66)	6(21)	5(22)	53	42(70)	11(22)	$X^2=24.01$
M & BELOW	9(27)	9(34)	23(79)	17(78)	58	18(30)	40(78)	d.f.=1
TOTAL	34	26	29	22	111	60	51	$P < .0005$

<u>SCHOOL D - 4th year.</u>								
EXCEED M	28(85)	16(55)	10(34)	4(16)	58	44(71)	14(26)	$X^2=21.66$
M & BELOW	5(15)	13(45)	19(66)	21(84)	58	18(29)	40(74)	d.f.=1
TOTAL	33	29	29	25	116	62	54	$P < .0005$

<u>SCHOOL F - 4th year.</u>								
EXCEED M	23(77)	16(73)	8(42)	3(15)	50	39(75)	11(28)	$X^2=17.86$
M & BELOW	7(23)	6(27)	11(58)	17(85)	41	13(25)	28(72)	d.f.=1
TOTAL	30	22	19	20	91	52	39	$P < .0005$

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 32 - Desire to Leave School.

Qu. 'I should like to leave school as soon as possible.'

Ho. Desire to leave school is not stream related.

H1. The lower streams have a greater desire to leave school than the upper streams.

<u>SCHOOL</u>	<u><math>\chi^2</math></u>	<u>P &lt;</u>
<u>3rd year.</u>		
A	9.679	.005
B	16.99	.0005
C	7.457	.005
D	15.34	.0005
F	11.0	.0005
H	N.S.O.W.	
<u>4th year.</u>		
A	3.509	.05
B	35.61	.0005
C	19.44	.0005
D	37.75	.0005
F	4.093	.05

---

TABLE 33 - Attitude to the minor disciplines of school. (Qu.17 - 22).

Ho. There is no difference between the median scores of the two groups.

H1. The median score of the upper streams is higher than that of the lower streams.

<u>SCHOOL</u>	<u><math>\chi^2</math></u>	<u>P &lt;</u>
<u>3rd year.</u>		
A	N.S.O.W.	
B	8.202	.005

<u>SCHOOL</u>	<u>X<sup>2</sup></u>	<u>P &lt;</u>
<u>3rd year.</u>		
C	4.168	.025
D	.02349	.45 N.S.
F	N.S.O.W.	
H	.03017	.45 N.S.

<u>4th year.</u>		
A	10.7	.005
B	6.288	.01
C	N.S.O.W.	
D	14.19	.0005
F	N.S.O.W.	

WHOLE SAMPLE 3rd year  $X^2=1.134$   $P < .15$

WHOLE SAMPLE 4th year  $X^2=14.92$   $P < .0005$

TABLE 34 = Summary of Attitude and Participation Results.

<u>3rd year</u>							
<u>SCHOOL</u>	Table 29	Table 30	Table 31	Table 33	Table 47	Table 48	
A	P < N.S. *.0048	.025	.025	N.S.	.47	.05	N.S.O.W.
B	P < .0048	.025	.0005	.005	.0005		N.S. .1
C	P < .025	.005	.05	.025	.005		N.S. .47
D	P < .01	.0005	.0005	N.S.	.45	.0005	.025
F	P < N.S.*.05	N.S.	N.S.	.35	N.S.O.W.	.0005	N.S.O.W.
H	P < .01	***.05	N.S.*.05	N.S.	.45	.025	.05

4th year.

<u>SCHOOL</u>	Table 29	Table 30	Table 31	Table 33	Table 47	Table 48
A	P < .0005	.005	.0005	.005	.0005	.01
B	P < .0005	.05	.0005	.01	.0005	N.S. .1
C	P < .01	.0005	.0005	N.S.O.W.	.005	N.S. .4
D	P < .0005	.0005	.0005	.0005	.005	N.S. .25
F	P < .005	.0005	.0005	N.S.O.W.	.025	N.S.O.W.
H	No fourth form streams in this school.					

Notes.

1. \* means significant if 'A' stream is compared with the other streams.
  2. \*\* Means significant by Mann-Whitney U Test, (for large samples) .
  3. \*\*\* means significant by Kolmogorov - Smirnov Test.
-

DOWNSTREAM PUPILS V UPSTREAM PUPILS.

The 229 pupils involved in mobility (see Table 22) are analysed in two groups i.e. 3rd year and 4th year.

They are compared by means of 1. The School Orientation Test.

2. Attitude to Class Work (Qu's 5 - 10).

3. Attachment to School (Qu.'s 11 - 16).

H0. Scores in the two populations will have the same distribution.

H1. That the pupils promoted are (stochastically) higher than pupils who are demoted in 1. school orientation.

2. attitudes to class work.

3. attachment to school.

Test used:

Mann-Whitney U Test (for large samples - not corrected for ties and therefore conservative).

'This is one of the most powerful of the nonparametric tests, and it is a most powerful alternative to the parametric 't' test when one wishes to avoid the 't' test's assumptions, or when the measurement in the research is weaker than interval scaling.' (60.P 116).

Formula.  $U = n_1 n_2 + \frac{n_1(n_1 + 1)}{2} - R_1$

$$z = \frac{U - n_1 n_2}{\sqrt{\frac{(n_1)(n_2)(n_1 + n_2 + 1)}{12}}}$$

$$\frac{\frac{2}{(n_1)(n_2)(n_1 + n_2 + 1)}}{12}$$

(60.P 123).

TABLE 35 \* School Orientation Test.

3rd year

67 upstream 40 downstreams.

$$U = 2260$$

$$z = 5.926$$

$$P < .00003$$

4th year.

66 upstream 56 downstream

$$U = 1391$$

$$z = 7.145$$

$$P < .00003$$

TABLE 36 - Attitude to Class Work.

3rd year.

$$U = 1959$$

$$z = 3.988$$

$$P < .00005$$

4th year.

$$U = 2928$$

$$z = 5.547$$

$$P < .00003$$

TABLE 37 - Attachment to School

3rd year.

$$U = 1993$$

$$z = 4.205$$

$$P < .00003$$

4th year.

$$U = 2950$$

$$z = 5.661$$

$$P < .00003$$

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The 229 pupils have now been analysed in their individual schools.

Test used: Mann-Whitney U Test; the appropriate method and statistical tables have been used according to whether  $n_2$  is 8 or less -

$n_2$  is between 9 and 20 -

$n_2$  is larger than 20.

The results are summarized below:

<u>3rd year.</u>			<u>TABLE 38</u>		<u>TABLE 39</u>		<u>TABLE 40</u>	
<u>SCHOOL</u>			<u>SCHOOL ORIENTATION</u>		<u>ATTITUDE TO CL. WORK.</u>		<u>ATTACHMENT TO SCH.</u>	
	<u>DOWN</u>	<u>UP</u>						
A	7	10	U = 3.5	P < .001	U = 9	P < .01	U = 13	P < .025
B	5	7	U = 6	P < .037	U = 13	P < .265 N.S.	U = 9	P < .101 N.S.
C	6	10	U = 17	N.S.	U = 14	P < .05	U = 20	N.S.
D	2	6	U = 4	N.S.	U = 3	N.S.	U = 4	N.S.
F	10	17	U = 10.5	P < .001	U = 12	P < .001	U = 20	P < .001
H	10	17	U = 34	P < .01	U = 50	P < .05	N.S.	

4th year.

SCHOOL.

	<u>DOWN</u>	<u>UP</u>						
A	16	13	U = 41.5	P < .01	U = 63	P < .05	U = 46	P < .01
B	17	25	U = 364	P < .00007	U = 318	P < .0034	U = 311	P < .0057
			z = 3.896		z = 2.716		z = 2.537	
C			NO MOBILITY FIGURES.					
D	15	18	U = 40.5	P < .001	U = 38	P < .001	U = 83.5	P < .05
F	8	10	U = 6.5	P < .01	U = 12.5	P < .01	U = 6.5	P < .01
H			SMALL FOURTH YEAR - UNSTREAMED.					

TABLE 41 - Attachment to present form.

Qu. 37' Do you like being in your present form?'

Ho. Satisfaction with one's form is not stream related.

H1. The upper streams will be more satisfied with their form than the lower streams.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
YES	24(93)	22(85)	7(32)		53	46(89)	7(32)	$X^2=21.7$
NO	2(7)	4(15)	15(68)		21	6(11)	15(68)	d.f.=1
D/KNOW								$P < .0005$
TOTAL	26	26	22		74	52	22	Y V N+D.K.

<u>SCHOOL B - 3rd year.</u>								
YES	24(100)	16(76)	17(74)	24(85)	81	40(89)	41(80)	$X^2=.7439$
NO	-	2(10)	5(22)	3(11)	10	2(5)	8(16)	d.f.=1
D/KNOW	-	3(14)	1(4)	1(4)	5	3(6)	2(4)	$P < .25$
TOTAL	24	21	23	28	96	45	51	N.S.

<u>SCHOOL C - 3rd year.</u>								
YES	27(85)	25(84)	23(81)	14(67)	89	52(84)	37(72)	$X^2=1.515$
NO	4(12)	2(6)	5(16)	4(19)	15	6(10)	9(18)	d.f.=1
D/KNOW	1(3)	3(10)	2(6)	3(14)	9	4(6)	5(10)	$P < .15$
TOTAL	32	30	30	21	113	62	51	N.S.

<u>SCHOOL D - 3rd year.</u>								
YES	30(91)	24(80)	14(47)	8(42)	76	54(86)	22(45)	$X^2=19.23$
NO	3(9)	6(20)	15(50)	8(42)	32	9(14)	23(47)	d.f.=1
D/KNOW	-	-	1(3)	3(16)	4	-	4(8)	$P < .0005$
TOTAL	33	30	30	19	112	63	49	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F</u> - 3rd year.								
YES	31(91)	28(97)	21(96)	15(79)	95	59(94)	36(88)	
NO	3( 9)	1( 3)	1( 4)	3(16)	8	4( 6)	4(10)	d.f.=1
D/KNOW	-	-	-	1( 5)	1	0-	1( 2)	N.S.
TOTAL	34	29	29	19	104	63	41	f.e.<5

WHOLE SAMPLE 3rd year  $P < .0005$

<u>SCHOOL H</u> - 3rd year.								
YES	31(97)	22(71)	20(83)		73	53(84)	20(83)	
NO	1( 3)	2( 6)	4(17)		7	3( 4)	4(17)	
D/KNOW	-	7(23)	-		7	7(12)	-	N.S.
TOTAL	32	31	24		87	63	24	

<u>SCHOOL A</u> - 4th year.								
YES	28(85)	27(87)	25(63)		80	55(87)	25(63)	$X^2 = .003825$
NO	3( 9)	3(10)	10(25)		16	6( 9)	10(25)	d.f.=1
D/KNOW	2( 6)	1( 3)	5(12)		8	3( 4)	5(12)	$R = .49$
TOTAL	33	31	40		104	64	40	N.S.

<u>SCHOOL B</u> - 4th year.								
YES	32(94)	30(97)	32(89)	25(78)	119	62(95)	57(84)	$X^2 = 4.797$
NO	1( 3)	1( 3)	4(11)	5(16)	11	2( 3)	9(13)	d.f.=1
D/KNOW	1(3)	-	-	2( 6)	3	1( 2)	2( 3)	$P < .025$
TOTAL	34	31	36	32	133	65	68	

<u>SCHOOL C</u> - 4th year.								
YES	31(91)	24(93)	18(63)	15(68)	88	55(92)	33(64)	$X^2 = 3.612$
NO	-	-	6(20)	2( 9)	8	-	8(16)	d.f.=1
D/KNOW	3( 9)	2( 7)	5(17)	5(23)	15	5( 8)	10(20)	$P < .05$
TOTAL	34	26	29	22	111	60	51	

a	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D</u> - 4th year.								
YES	31(94)	27(94)	27(94)	20(80)	105	58(94)	47(87)	$X^2 = .6735$
NO	2(6)	1(3)	2(6)	5(20)	10	3(4)	7(13)	d.f.=1
D/KNOW	-	1(3)	-	-	1	1(2)	-	$P < .25$
TOTAL	33	29	29	25	116	62	54	N.S.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F</u> - 4th year.								
YES	21(70)	17(77)	16(85)	15(75)	69	38(73)	31(80)	
NO	8(27)	2(9)	2(10)	4(20)	16	10(19)	6(15)	
D/KNOW	1(3)	3(14)	1(5)	1(5)	6	4(8)	2(5)	N.S.O.W.
TOTAL	30	22	19	20	91	52	39	

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 42 - Progress in one's present form.

Qu. 'Would you do better in another form?'

Ho. The feeling that one would do better in another form is not stream related.

H1. More lower stream pupils feel that they would do better in another form than higher stream pupils.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A</u> - 3rd year.								
YES	1(4)	6(23)	12(54)		19	7(13)	12(54)	$X^2 = 12.73$
NO	22(85)	17(66)	8(36)		47	39(76)	8(36)	d.f.=1
D/KNOW	3(11)	3(11)	2(10)		8	6(11)	2(10)	$P < .0005$
TOTAL	26	26	22		74	52	22	Y V N+D.K.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL B - 3rd year.</u>								
YES	1(4)	5(24)	6(26)	6(22)	18	6(13)	12(23)	$X^2 = .1030$
NO	17(71)	10(48)	10(44)	13(46)	50	27(60)	23(45)	d.f.=1
D/KNOW	6(25)	6(28)	7(30)	9(32)	28	12(27)	16(32)	$P < .4$
TOTAL	24	21	23	28	96	45	51	N.S.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL C - 3rd year.</u>								
YES	5(15)	2(6)	8(26)	10(48)	25	7(11)	18(35)	$X^2 = 8.004$
NO	14(44)	11(37)	11(37)	7(33)	43	25(40)	18(35)	d.f.=1
D/KNOW	13(41)	17(57)	11(37)	4(19)	45	30(49)	15(30)	$P < .005$
TOTAL	32	30	30	21	113	62	51	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D - 3rd year.</u>								
YES	2(6)	4(13)	12(40)	9(46)	27	6(9)	21(43)	$X^2 = 14.96$
NO	31(94)	26(87)	15(50)	5(27)	77	57(91)	20(41)	d.f.=1
D/KNOW	-	-	3(10)	5(27)	8	-	8(16)	$P < .0005$
TOTAL	33	30	30	19	112	63	49	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F - 3rd year.</u>								
YES	2(6)	4(14)	4(18)	6(32)	16	6(9)	10(25)	$X^2 = 4.21$
NO	23(68)	20(69)	12(55)	9(47)	64	43(68)	21(51)	d.f.=1
D/KNOW	9(26)	5(17)	6(27)	4(21)	24	14(23)	10(24)	$P < .05$
TOTAL	34	29	22	19	104	63	41	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL H - 3rd year.</u>								
YES	-	6(19)	7(29)		13	6(9)	7(29)	$X^2 = 20.23$
NO	26(81)	14(45)	3(12)		43	40(63)	3(12)	d.f.=1
D/KNOW	6(19)	11(36)	14(59)		31	17(28)	14(59)	$P = .0005$
TOTAL	32	31	24		87	63	24	

Y + D.K. v N FOR fe. to be > 5.

WHOLE SAMPLE 3rd year P <.0005

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 4th year.</u>								
YES	2(6)	6(19)	7(17)		15	8(12)	7(17)	$X^2 = .9458$
NO	23(70)	14(45)	21(53)		58	37(58)	21(53)	d.f.=1
D/KNOW	8(24)	11(36)	12(30)		31	19(30)	12(30)	$P < .25$
TOTAL	33	31	40		104	64	40	N.S.

<u>SCHOOL B - 4th year.</u>								
YES	-	2(6)	6(16)	2(6)	10	2(3)	8(11)	$X^2 = 2.46$
NO	29(85)	23(75)	22(62)	24(75)	98	52(80)	46(68)	d.f.=1
D/KNOW	5(15)	6(19)	8(22)	6(19)	25	11(17)	14(21)	$P < .1$ N.S.
TOTAL	34	31	36	32	133	65	68	not fe. =5 in all cells.

<u>SCHOOL C - 4th year.</u>								
YES	3(9)	2(7)	4(13)	6(27)	15	5(8)	10(20)	$X^2 = 2.103$
NO	21(62)	19(74)	20(70)	11(50)	71	40(66)	31(61)	d.f.=1
D/KNOW	10(29)	5(19)	5(17)	5(23)	25	15(26)	10(19)	$P < .1$
TOTAL	34	26	29	22	111	60	51	N.S.

<u>SCHOOL D - 4th year.</u>								
YES	3(9)	5(17)	5(17)	2(8)	15	8(13)	7(13)	
NO	28(85)	16(56)	17(59)	16(64)	77	44(71)	33(61)	
D/KNOW	2(6)	8(27)	7(24)	7(28)	25	10(16)	14(26)	N.S.
TOTAL	33	29	29	25	116	62	54	

<u>SCHOOL F - 3rd year.</u>								
YES	3(10)	1(4)	6(32)	6(30)	16	4(8)	12(31)	$X^2 = 5.206$
NO	24(80)	10(46)	9(47)	9(45)	52	34(65)	18(46)	d.f.=1
D/KNOW	3(10)	11(50)	4(21)	5(25)	23	14(27)	9(23)	$P < .025$
TOTAL	30	22	19	20	91	52	39	

WHOLE SAMPLE 4th year P <.005

TABLE 43 - Representing the school at games.

Qu. 31 'I play for a school team at games....never / sometimes / often.'

Ho. Representing the school at games is not stream related.

H1. More upper stream pupils than lower stream pupils represent the school at games.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
NEVER	11(43)	14(54)	15(68)		40	25(48)	15(68)	$X^2=1.813$
S/TIMES	5(19)	5(19)	3(14)		13	10(19)	3(14)	d.f.=1
OFTEN	10(38)	7(27)	4(18)		21	17(33)	4(18)	$P < .1$
TOTAL	26	26	22		74	52	22	N.S.

N V S + O

<u>SCHOOL B - 3rd year.</u>								
NEVER	11(46)	12(57)	14(61)	19(68)	56	23(51)	33(64)	$X^2=1.301$
S/TIMES	4(17)	7(33)	5(22)	5(18)	21	11(24)	10(20)	d.f.=1
OFTEN	9(37)	2(10)	4(17)	4(14)	19	11(25)	8(16)	$P < .15$
TOTAL	24	21	23	28	96	45	51	N.S.

<u>SCHOOL C - 3rd year.</u>								
NEVER	11(32)	12(40)	12(40)	13(62)	48	23(37)	25(49)	$X^2=1.175$
S/TIMES	13(43)	12(40)	13(44)	6(28)	44	25(40)	19(37)	d.f.=1
OFTEN	8(25)	6(20)	5(16)	2(10)	21	14(23)	7(14)	$P < .15$
TOTAL	32	30	30	21	113	62	51	N.S.

<u>SCHOOL D - 3rd year.</u>								
NEVER	2(6)	10(33)	14(47)	13(68)	49	12(19)	27(55)	$X^2=14.23$
S/TIMES	12(36)	17(57)	12(40)	5(27)	46	29(46)	17(35)	d.f.=1
OFTEN	19(58)	3(10)	4(13)	1(5)	27	22(35)	5(10)	$P < .0005$
TOTAL	33	30	30	19	112	63	49	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F</u> - 3rd year.								
NEVER	5(15)	9(31)	8(37)	11(58)	33	14(22)	19(46)	$X^2=7.483$
S/TIMES	16(47)	17(59)	6(27)	7(37)	46	33(53)	13(32)	d.f.=1
OFTEN	13(38)	3(10)	8(36)	1(5)	25	16(25)	9(22)	$P < .005$
TOTAL	34	29	22	19	104	63	41	

<u>SCHOOL H</u> - 3rd year.								
NEVER	8(25)	14(45)	15(62)		37	22(35)	15(62)	$X^2=6.539$
S/TIMES	16(50)	8(26)	5(21)		29	24(38)	5(21)	d.f.=1
OFTEN	8(25)	9(29)	4(17)		21	17(27)	4(17)	$P < .01$
TOTAL	32	31	24		87	63	24	

<u>SCHOOLS A+B+C</u> 3rd year.								
NEVER					144	71	73	$X^2=5.079$
S/TIMES					139	88	51	d.f.=1
OFTEN								$P < .025$
TOTAL					283	159	124	

WHOLE SAMPLE 3rd year.  $P < .0005$

<u>SCHOOL A</u> - 4th year.								
NEVER	9(28)	9(29)	24(60)		42	18(28)	24(60)	$X^2=6.897$
S/TIMES	12(36)	10(32)	10(25)		32	22(34)	10(25)	d.f.=1
OFTEN	12(36)	12(39)	6(15)		30	24(38)	6(15)	$P < .005$
TOTAL	33	31	40		104	64	40	

<u>SCHOOL B</u> - 4th year.								
NEVER	13(39)	11(35)	24(67)	23(72)	71	24(37)	47(70)	$X^2=10.77$
S/TIMES	10(29)	8(26)	10(27)	8(25)	36	18(28)	18(26)	d.f.=1
OFTEN	11(32)	12(39)	2(6)	1(3)	26	23(35)	3(4)	$P < .005$
TOTAL	34	31	36	32	133	65	68	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL C</u> - 4th year.								
NEVER	14(41)	8(31)	11(38)	10(45)	43	22(37)	21(41)	$X^2=4.532$
S/TIMES	11(32)	10(38)	14(49)	12(55)	47	21(35)	26(51)	d.f.=1
OFTEN	9(27)	8(31)	4(13)	-	21	17(28)	4(8)	$P < .025$
TOTAL	34	26	29	22	111	60	51	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D</u> - 4th year.								
NEVER	10(30)	15(52)	17(58)	13(52)	55	25(40)	30(56)	$X^2=2.10$
S/TIMES	6(18)	8(27)	6(21)	7(28)	27	14(22)	13(24)	d.f.=1
OFTEN	17(52)	6(21)	6(21)	5(20)	34	23(38)	11(20)	$P < .1$
TOTAL	33	29	29	25	116	62	54	N.S.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F</u> - 4th year.								
NEVER	8(26)	6(27)	4(21)	11(55)	29	14(27)	15(38)	$X^2=4.786$
S/TIMES	8(27)	9(41)	11(58)	8(40)	36	17(33)	19(49)	d.f.=1
OFTEN	14(47)	7(32)	4(21)	1(5)	26	21(40)	5(13)	$P < .025$
TOTAL	30	22	19	20	91	52	39	

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 44 - Participation in school concerts.

- Qu. 28 'Have you ever taken part in a school play or concert?'.  
 Ho. Participation in school plays and concerts is <sup>not</sup> stream related.  
 H1. More upper stream pupils than lower stream pupils participate in school plays and concerts.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A</u> - 3rd year.								
YES	23(89)	14(54)	10(45)	-	47	37(71)	10(45)	$X^2=3.666$
NO	3(11)	12(46)	11(50)	-	26	15(29)	11(50)	d.f.=1
D/KNOW	-	-	1(5)	-	1	-	1(5)	$P < .05$
TOTAL	26	26	22	-	74	52	22	Y V N+D.K.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL B</u> - 3rd year.								
YES	16(67)	20(95)	11(48)	19(69)	66	36(80)	30(59)	$X^2=4.149$
NO	8(33)	1(5)	12(52)	9(32)	30	9(20)	21(41)	d.f.=1
D/KNOW								$P < .025$
TOTAL	24	21	23	28	96	45	51	

<u>SCHOOL C</u> - 3rd year.								
YES	20(60)	16(53)	14(47)	5(24)	55	36(58)	19(37)	$X^2=4.054$
NO	12(40)	14(47)	16(53)	15(71)	57	26(42)	31(61)	d.f.=1
D/KNOW	-	-	-	1(5)	1	-	1(2)	$P < .025$
TOTAL	32	30	30	21	113	62	51	

<u>SCHOOL D</u> - 3rd year.								
YES	16(48)	12(40)	8(26)	4(21)	40	28(44)	12(25)	$X^2=3.951$
NO	17(52)	18(60)	22(74)	15(79)	72	35(56)	37(75)	d.f.=1
D/KNOW								$P < .025$
TOTAL	33	30	30	19	112	63	49	

<u>SCHOOL F</u> - 3rd year.								
YES	20(59)	26(90)	2(9)	4(21)	52	46(73)	6(14)	$X^2=31.56$
NO	14(41)	3(10)	20(91)	15(79)	52	17(27)	35(86)	d.f.=1
D/KNOW								$P < .0005$
TOTAL	34	29	22	19	104	63	41	

<u>SCHOOL H</u> - 3rd year.								
YES	32(100)	22(81)	17(71)		69	54(86)	17(71)	$X^2=2.101$
NO	-	9(29)	7(29)		18	9(14)	7(29)	d.f.=1
D/KNOW								$P < .1$
TOTAL	32	31	24		87	63	24	N.S.

WHOLE SAMPLE 3rd year  $P < .0005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A</u> - 4th year.								
YES	19(57)	29(94)	6(15)		54	48(75)	6(15)	$X^2=33.13$
NO	13(39)	2(6)	26(65)		41	15(23)	26(65)	d.f.=1
D/KNOW	1(4)	-	8(20)		9	1(2)	8(20)	$P < .0005$
TOTAL	33	31	40		104	64	40	

<u>SCHOOL B</u> - 4th year.								
YES	33(97)	26(84)	18(50)	13(41)	90	59(91)	31(45)	$X^2=29.29$
NO	1(3)	5(16)	18(50)	19(59)	43	6(9)	37(55)	d.f.=1
D/KNOW								$P < .0005$
TOTAL	34	31	36	32	133	65	68	

<u>SCHOOL C</u> - 4th year.								
YES	12(35)	6(23)	6(20)	6(17)	30	18(30)	12(24)	$X^2=.3031$
NO	22(65)	20(77)	23(80)	14(74)	79	42(70)	37(72)	d.f.=1
D/KNOW	-	-	-	2(9)	2	-	2(4)	$P < .35$
TOTAL	34	26	29	22	111	60	51	N.S.

<u>SCHOOL D</u> - 4th year.								
YES	20(61)	20(69)	15(52)	7(28)	62	40(64)	22(41)	$X^2=5.637$
NO	13(39)	9(31)	14(48)	18(72)	54	22(36)	32(59)	d.f.=1
D/KNOW								$P < .01$
TOTAL	33	29	29	25	116	62	54	

<u>SCHOOL F</u> - 4th year.								
YES	11(37)	5(23)	6(32)	6(30)	28	16(31)	12(31)	
NO	19(63)	17(77)	13(68)	14(70)	63	36(69)	27(69)	
D/KNOW								
TOTAL	30	22	19	20	91	52	39	N.S.

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 4.5 - Work on show.

Qu. 30 'Has any of your work been put on show in your present school?'

Ho. Display of work is not stream related.

H1. More upper stream pupils than lower stream pupils will have work displayed.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
YES	22(85)	16(62)	17(77)		53	38(73)	17(77)	
NO	14(15)	8(31)	4(18)		26	22(23)	4(18)	
D/KNOW	-	2(7)	1(5)		3	2(4)	1(5)	N.S.O.W.
TOTAL	<u>26</u>	<u>26</u>	<u>22</u>		74	52	22	F V N+D.K.
<u>SCHOOL B - 3rd year.</u>								
YES	12(50)	11(52)	9(39)	10(36)	42	23(51)	19(37)	$X^2=1.345$
NO	10(42)	9(43)	13(56)	15(53)	47	19(42)	28(55)	d.f.=1
D/KNOW	2(8)	1(5)	1(5)	3(11)	7	3(7)	4(8)	$P < .15$
TOTAL	<u>24</u>	<u>21</u>	<u>23</u>	<u>28</u>	96	45	51	N.S.
<u>SCHOOL C - 3rd year.</u>								
YES	23(72)	9(30)	23(78)	13(62)	68	32(52)	36(70)	
NO	6(19)	14(47)	5(16)	6(28)	31	20(32)	11(22)	
D/KNOW	3(9)	7(23)	2(6)	2(10)	14	10(16)	4(8)	N.S.O.W.
TOTAL	<u>32</u>	<u>30</u>	<u>30</u>	<u>21</u>	113	62	51	
<u>SCHOOL D - 3rd year.</u>								
YES	25(76)	20(67)	15(50)	10(53)	70	45(71)	25(51)	$X^2=7.578$
NO	8(24)	9(30)	11(37)	9(47)	37	17(27)	20(41)	d.f.=1
D/KNOW	-	1(3)	4(13)	-	5	1(2)	4(8)	$P < .005$
TOTAL	<u>33</u>	<u>30</u>	<u>30</u>	<u>19</u>	112	63	49	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F</u> - 3rd year.								
YES	23(68)	20(69)	12(55)	8(42)	63	43(68)	20(49)	$X^2=3.171$
NO	10(29)	8(28)	10(45)	9(48)	37	18(28)	19(46)	d.f.=1
D/KNOW	1(3)	1(3)	-	2(10)	4	2(3)	2(5)	$P < .05$
TOTAL	34	29	22	19	104	63	41	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL H</u> - 3rd year.								
YES	28(88)	25(81)	21(88)		74	53(84)	21(88)	
NO	4(12)	5(16)	3(12)		12	9(14)	3(12)	
D/KNOW	-	1(3)	-		1	1(2)	-	N.S.O.W.
TOTAL	32	31	24		87	63	24	

WHOLE SAMPLE 3rd year  $P < .025$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A</u> - 4th year.								
YES	29(88)	23(74)	21(53)		73	52(81)	21(53)	$X^2=7.838$
NO	3(9)	8(26)	16(40)		27	11(17)	16(40)	d.f.=1
D/KNOW	1(3)	-	3(7)		4	1(2)	3(7)	$P < .005$
TOTAL	33	31	40		104	64	40	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL B</u> - 4th year.								
YES	22(65)	20(65)	18(50)	15(47)	75	42(65)	33(49)	$X^2=3.436$
NO	12(35)	11(35)	18(50)	16(50)	57	23(35)	34(50)	d.f.=1
D/KNOW	-	-	-	1(3)	1	-	1(1)	$P < .05$
TOTAL	34	31	36	32	133	65	68	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL C</u> - 4th year.								
YES	27(79)	19(73)	20(59)	15(68)	81	46(77)	35(68)	$X^2=.5389$
NO	4(12)	7(27)	5(27)	5(23)	21	11(18)	10(20)	d.f.=1
D/KNOW	3(9)	-	4(14)	2(9)	9	3(5)	6(12)	$P < .25$
TOTAL	34	26	29	22	111	60	51	N.S.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D - 4th year.</u>								
YES	26(79)	24(83)	18(63)	11(44)	79	50(81)	29(54)	$X^2=8.443$
NO	5(15)	5(17)	9(31)	13(52)	32	10(16)	22(41)	d.f.=1
D/KNOW	2(6)	-	2(6)	1(4)	5	2(3)	3(5)	$P < .005$
TOTAL	33	29	29	25	116	62	54	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F - 4th year.</u>								
YES	26(87)	14(64)	9(47)	10(50)	59	40(77)	19(49)	$X^2=6.579$
NO	4(13)	8(36)	10(53)	10(50)	32	12(23)	20(51)	d.f.=1
D/KNOW								$P < .01$
TOTAL	30	22	19	20	91	52	39	

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 46 - Helping at school functions.

Qu. 29 'Have you ever been asked to help at a parents' night or when the school has been open to the public?'

Ho. Helping at school functions is not stream related.

H1. More upper stream pupils than lower stream pupils will be asked to help at school functions.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
YES	11(42)	7(26)	1(5)		19	18(34)	1(5)	$X^2=5.833$
NO	15(58)	19(74)	20(90)		54	34(66)	20(90)	d.f.=1
D/KNOW	-	-	1(5)		1	-	1(5)	$P < .01$
TOTAL	26	26	22		74	52	22	Y V N+D.K.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL B</u> - 3rd year.								
YES	13(54)	8(38)	6(26)	3(11)	30	21(47)	9(18)	$X^2=8.073$
NO	11(46)	13(62)	17(74)	25(89)	66	24(53)	42(82)	d.f.=1
D/KNOW								$P < .005$
TOTAL	24	21	23	28	96	45	51	

<u>SCHOOL C</u> - 3rd year.								
YES	30(94)	25(84)	15(50)	9(43)	79	55(88)	24(47)	$X^2=21.19$
NO	2(6)	4(13)	15(50)	12(57)	33	6(10)	27(53)	d.f.=1
D/KNOW	-	1(3)	-	-	1	1(2)	-	$P < .0005$
TOTAL	32	30	30	21	113	62	51	

<u>SCHOOL D</u> - 3rd year.								
YES	23(70)	18(60)	13(43)	4(21)	58	41(65)	17(35)	$X^2=6.753$
NO	8(24)	12(40)	17(57)	15(79)	52	20(32)	32(65)	d.f.=1
D/KNOW	2(6)	-	-	-	2	2(3)	-	$P < .01$
TOTAL	33	30	30	19	112	63	49	

<u>SCHOOL F</u> - 3rd year.								
YES	27(79)	23(80)	15(68)	7(37)	72	50(79)	22(54)	$X^2=6.548$
NO	3(9)	4(13)	4(18)	12(63)	23	7(11)	16(39)	d.f.=1
D/KNOW	4(12)	2(7)	3(14)	-	9	6(10)	3(7)	$P < .01$
TOTAL	34	29	22	19	104	63	41	

<u>SCHOOL H</u> - 3rd year.								
YES	14(44)	8(26)	4(17)		26	22(35)	4(17)	$X^2=2.469$
NO	17(53)	22(71)	20(83)		59	39(62)	20(83)	d.f.=1
D/KNOW	1(3)	1(3)	-		2	2(3)	-	$P < .1$
TOTAL	32	31	24		87	63	24	N.S.

WHOLE SAMPLE 3rd year  $P < .0005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 4th year.</u>								
YES	25(76)	22(71)	16(40)		63	47(72)	16(40)	$X^2=10.16$
NO	8(24)	9(29)	24(60)		41	17(28)	24(60)	d.f.=1
D/KNOW								$P < .005$
TOTAL	33	31	40		104	64	40	

<u>SCHOOL B - 4th year.</u>								
YES	17(50)	15(48)	19(53)	9(28)	60	32(49)	28(41)	$X^2=.5319$
NO	17(50)	16(52)	17(47)	23(72)	73	33(51)	40(59)	d.f.=1
D/KNOW								$P < .25$
TOTAL	34	31	36	32	133	65	68	N.S.

<u>SCHOOL C - 4th year.</u>								
YES	33(97)	26(100)	16(56)	15(68)	90	59(98)	31(61)	$X^2=22.93$
NO	1(3)	-	12(41)	-7(32)	20	1(2)	19(37)	d.f.=1
D/KNOW	-	-	1(3)	-	1	-	1(2)	$P < .0005$
TOTAL	34	26	29	22	111	60	51	

<u>SCHOOL D - 4th year.</u>								
YES	27(82)	19(66)	17(58)	9(36)	72	46(74)	26(48)	$X^2=7.246$
NO	6(18)	9(31)	12(42)	16(64)	43	15(24)	28(52)	d.f.=1
D/KNOW	-	1(3)	-	-	1	1(2)	-	$P < .005$
TOTAL	33	29	29	25	116	62	54	

<u>SCHOOL F - 4th year.</u>								
YES	28(93)	15(68)	8(42)	8(40)	59	43(82)	16(41)	$X^2=15.17$
NO	2(7)	7(32)	11(58)	12(60)	32	9(18)	23(59)	d.f.=1
D/KNOW								$P < .0005$
TOTAL	30	22	19	20	91	52	39	

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 47 - Participation in school activities in general(Qu.28 - 31).

Ho. There is no difference between the median scores of the two groups.

H1. The median score of the upper streams is higher than that of the lower streams.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
EXCEED M	16(62)	12(46)	6(27)		34	28(54)	26(27)	$X^2=3.39$
M & BELOW	10(38)	14(54)	16(73)		40	24(46)	16(73)	d.f.=1
TOTAL	26	26	22		74	52	22	$P < .05$
<u>SCHOOL B - 3rd year.</u>								
EXCEED M	18(75)	13(62)	6(26)	6(22)	43	31(69)	12(23)	$X^2=18.09$
M & BELOW	6(25)	8(38)	17(74)	22(78)	53	14(31)	39(77)	d.f.=1
TOTAL	24	21	23	28	96	45	51	$P < .0005$
<u>SCHOOL C - 3rd year.</u>								
EXCEED M	25(78)	11(27)	13(43)	5(24)	54	36(58)	18(35)	$X^2=7.268$
M & BELOW	7(22)	19(63)	17(57)	16(76)	69	26(42)	33(65)	d.f.=1
TOTAL	32	30	30	21	113	62	51	$P < .005$
<u>SCHOOL D - 3rd year.</u>								
EXCEED M	24(73)	17(55)	12(40)	3(16)	56	41(65)	15(31)	$X^2=11.75$
M & BELOW	9(27)	13(45)	18(60)	16(84)	56	22(35)	34(69)	d.f.=1
TOTAL	33	30	30	19	112	63	49	$P < .0005$
<u>SCHOOL F - 3rd year.</u>								
EXCEED M	19(56)	19(65)	7(32)	2(10)	47	38(61)	9(21)	$X^2=13.25$
M & BELOW	15(44)	10(35)	15(68)	17(90)	55	25(39)	32(79)	d.f.=1
TOTAL	34	29	22	19	104	63	41	$P < .0005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL H</u> - 3rd year.								
EXCEED M	17(53)	16(52)	7(29)		40	33(53)	7(29)	$X^2=2.894$
M & BELOW	15(47)	15(48)	17(71)		47	30(47)	17(71)	d.f.=1
TOTAL	32	31	24		87	63	24	$P < .05$

WHOLE SAMPLE 3rd year  $P < .005$

<u>SCHOOL A</u> - 4th year.								
EXCEED M	26(79)	17(55)	7(18)		50	43(67)	7(18)	$X^2=22.4$
M & BELOW	7(21)	14(45)	33(82)		54	21(33)	33(82)	d.f.=1
TOTAL	33	31	40		104	64	40	$P < .0005$

<u>SCHOOL B</u> - 4th year.								
EXCEED M	23(67)	19(61)	13(36)	9(28)	64	42(65)	22(32)	$X^2=12.59$
M & BELOW	11(33)	12(39)	23(64)	23(72)	69	23(35)	46(68)	d.f.=1
TOTAL	34	31	36	32	133	65	68	$P < .0005$

<u>SCHOOL C</u> - 4th year.								
EXCEED M	21(62)	16(62)	9(31)	8(36)	54	37(62)	17(34)	$X^2=7.759$
M & BELOW	13(38)	10(38)	20(69)	14(64)	67	23(38)	34(66)	d.f.=1
TOTAL	34	26	29	22	111	60	51	$P < .005$

<u>SCHOOL D</u> - 4th year.								
EXCEED M	23(70)	16(55)	14(48)	3(12)	56	39(63)	17(32)	$X^2=10.19$
M & BELOW	10(30)	13(45)	15(52)	22(88)	60	23(37)	37(68)	d.f.=1
TOTAL	33	29	29	25	116	62	54	$P < .005$

<u>SCHOOL F</u> - 4th year.								
EXCEED M	17(57)	8(36)	4(21)	5(25)	34	25(48)	9(23)	$X^2=4.930$
M & BELOW	13(43)	14(64)	15(79)	15(75)	57	27(52)	30(77)	d.f.=1
TOTAL	30	22	19	20	91	52	39	$P < .025$

WHOLE SAMPLE 4th year  $P < .0005$

TABLE 48 - Desire to participate in school activities. (Qu. 25 - 27).

Ho. There is no difference between the median scores of the two groups.

H1. The median score of the upper streams is higher than that of the lower streams.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
EXCEED M	16(62)	6(23)	12(55)		34	22(42)	12(55)	
M & BELOW	10(38)	20(77)	10(45)		40	30(58)	10(45)	
TOTAL	26	26	22		74	52	22	N.S.O.W.

<u>SCHOOL B - 3rd year.</u>								
EXCEED M	18(75)	14(66)	12(52)	14(50)	58	32(71)	26(51)	$X^2=1.871$
M & BELOW	6(25)	7(34)	11(48)	14(50)	38	13(29)	25(49)	d.f.=1
TOTAL	24	21	23	28	96	45	51	$P < .1$ N.S.

<u>SCHOOL C - 3rd year.</u>								
EXCEED M	18(56)	12(40)	14(47)	11(52)	55	30(48)	25(49)	
M & BELOW	14(44)	18(60)	16(53)	10(48)	58	32(52)	26(51)	
TOTAL	32	30	30	21	113	62	51	N.S.O.W.

<u>SCHOOL D - 3rd year.</u>								
EXCEED M	23(70)	15(50)	13(43)	5(26)	56	38(60)	18(37)	$X^2=5.225$
M & BELOW	10(30)	15(50)	17(57)	14(74)	56	25(40)	31(63)	d.f.=1
TOTAL	33	30	30	19	112	63	49	$P < .025$

<u>SCHOOL F - 3rd year.</u>								
EXCEED M	21(62)	10(35)	9(41)	12(63)	52	31(49)	21(51)	
M & BELOW	13(38)	19(65)	13(59)	7(37)	52	32(51)	20(49)	
TOTAL	34	29	22	19	104	63	41	N.S.O.W.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL H</u> - 3rd year.								
EXCEED M	17(53)	16(52)	7(29)		40	33(53)	7(29)	$X^2=2.894$
M & BELOW	15(47)	15(48)	17(71)		47	30(47)	17(71)	d.f.=1
TOTAL	32	31	24		87	63	24	$P < .05$

<u>SCHOOL A</u> - 4th year.								
EXCEED M	16(48)	20(65)	11(32)		49	36(56)	13(32)	$X^2=4.659$
M & BELOW	17(52)	11(35)	21(68)		55	28(44)	27(68)	d.f.=1
TOTAL	33	31	40		104	64	40	$P < .025$

<u>SCHOOL B</u> - 4th year.								
EXCEED M	15(44)	21(68)	17(47)	12(38)	65	36(55)	29(42)	$X^2=1.682$
M & BELOW	19(56)	10(32)	19(53)	20(62)	68	29(45)	39(58)	d.f.=1
TOTAL	34	31	36	32	133	65	68	$P < .1$ N.S.

<u>SCHOOL C</u> - 4th year.								
EXCEED M	21(62)	10(38)	13(45)	11(50)	55	31(52)	24(47)	$X^2=.08608$
M & BELOW	13(38)	16(62)	16(55)	11(50)	56	29(48)	27(53)	d.f.=1
TOTAL	34	26	29	22	111	60	51	$P < .4$ N.S.

<u>SCHOOL D</u> - 4th year.								
EXCEED M	21(64)	8(27)	19(66)	12(48)	60	29(47)	31(58)	
M & BELOW	12(36)	21(73)	10(34)	13(52)	56	33(53)	23(42)	
TOTAL	33	29	29	25	116	62	54	N.S.O.W.

<u>SCHOOL F</u> - 4th year.								
EXCEED M	16(53)	9(41)	10(53)	9(45)	48	25(48)	19(49)	
M & BELOW	14(47)	13(59)	9(47)	11(55)	47	27(52)	20(51)	
TOTAL	30	22	19	20	91	52	39	N.S.O.W.

TABLE 49 - Membership of school clubs.

Qu. 42 'Are you a member of any school club.'

Ho. Membership of school clubs is not stream related.

H1. More upper stream than lower stream pupils are members of school clubs.

	A	B	C	D	TOTAL	A+B	G+D	
<u>SCHOOL A - 3rd year.</u>								
YES	8(31)	3(11)	3(14)		14	11(21)	3(14)	$X^2 = 18.49$
NO	18(69)	23(89)	19(86)		60	41(79)	19(86)	d.f.=1
D/KNOW								$P < .35$
TOTAL	26	26	22		74	52	22	N.S.
								Y V N + D.K.

<u>SCHOOL B - 3rd year.</u>								
YES	13(54)	7(33)	9(39)	5(18)	34	20(44)	14(28)	$X^2 = 2.32$
NO	11(46)	14(67)	14(61)	23(82)	62	25(56)	37(72)	d.f.=1
D/KNOW								$P < .1$
TOTAL	24	21	23	28	96	45	51	N.S.

<u>SCHOOL C - 3rd year.</u>								
YES	25(78)	13(43)	9(30)	7(33)	54	38(61)	16(31)	$X^2 = 11.27$
NO	7(22)	16(54)	21(70)	14(67)	58	23(37)	35(69)	d.f.=1
D/KNOW	-	1(3)	-	-	1	1(2)	-	$P < .0005$
TOTAL	32	30	30	21	113	62	51	

<u>SCHOOL D - 3rd year.</u>								
YES	20(61)	9(30)	12(40)	10(53)	51	29(46)	22(45)	
NO	12(36)	21(70)	17(57)	19(47)	59	33(52)	26(53)	
D/KNOW	1(3)	-	1(3)	-	2	1(2)	1(2)	N.S.
TOTAL	33	30	30	19	112	63	49	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F</u> - 3rd year.								
YES	14(41)	2(7)	4(18)	-	20	16(25)	4(10)	$X^2=2.969$
NO	19(56)	27(93)	18(82)	19(100)	93	46(73)	37(90)	d.f.=1
D/KNOW	1(3)	-	-	-	1	1(2)	-	$P < .05$
TOTAL	34	29	22	19	104	63	41	

<u>SCHOOL H</u> - 3rd year.								
YES	26(81)	15(48)	6(25)		47	41(65)	6(25)	$X^2=12.19$
NO	6(19)	15(49)	18(75)		39	21(33)	18(75)	d.f.=11
D/KNOW	-	1(3)	-		1	1(2)	-	$P < .0005$
TOTAL	32	31	24		87	63	24	

WHOLE SAMPLE 3rd year  $< .0005$

<u>SCHOOL A</u> - 4th year.								
YES	10(30)	4(13)	8(20)		22	14(22)	8(20)	$X^2=..00036$
NO	23(70)	27(87)	32(80)		82	50(78)	32(80)	d.f.=1
D/KNOW								$P < .49$
TOTAL	33	31	40		104	64	40	N.S.

<u>SCHOOL B</u> - 4th year.								
YES	23(68)	25(81)	18(50)	13(41)	79	48(74)	31(46)	$X^2=9.402$
NO	11(32)	6(19)	18(50)	19(59)	54	17(26)	37(54)	d.f.=1
D/KNOW								$P < .005$
TOTAL	34	31	36	32	133	65	68	

<u>SCHOOL C</u> - 4th year.								
YES	26(76)	13(50)	7(24)	3(13)	49	39(65)	10(20)	$X^2=21.24$
NO	7(21)	13(50)	21(63)	19(87)	60	20(33)	40(78)	d.f.=1
D/KNOW	1(3)	-	1(3)	-	2	1(2)	1(2)	$P < .0005$
TOTAL	34	26	29	22	111	60	51	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D - 4th year.</u>								
YES	15(46)	4(14)	8(27)	10(40)	37	19(31)	18(33)	
NO	16(48)	24(83)	21(73)	15(60)	76	40(64)	36(67)	
D/KNOW	2(6)	1(3)	-	-	3	3(5)		N.S.O.W.
TOTAL	33	29	29	25	116	62	54	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F - 4th year.</u>								
YES	13(43)	11(50)	8(42)	5(25)	37	24(46)	13(34)	$X^2 = 1.518$
NO	17(57)	11(50)	11(58)	15(75)	54	28(54)	26(66)	d.f.=1
D/KNOW								$P < .15$
TOTAL	30	22	19	20	91	52	39	N.S.

WHOLE SAMPLE 4th year  $P < .025$

TABLE 50 - Allocation of school prizes.

Qu.41: 'Have you ever received a school prize.'

Ho. Prize winning is not related to streams.

H1. More upper stream than lower stream pupils are awarded school prizes.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
YES	10(38)	8(31)	6(27)		24	18(35)	6(27)	$X^2 = .1299$
NO	16(62)	18(69)	10(46)		44	34(65)	10(46)	d.f.=1
D/KNOW	-	-	6(27)		6	-	6(27)	$P < .4$
TOTAL	26	26	22		74	52	22	N.S.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL B</u> - 3rd year.								
YES	9(37)	5(24)	4(17)	8(29)	26	13(31)	12(24)	$X^2 = .365$
NO	15(63)	16(76)	19(83)	20(71)	70	31(69)	39(76)	d.f. = 1
D/KNOW								$P < .35$
TOTAL	24	21	23	28	96	45	51	N.S.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL C</u> - 3rd year.								
YES	29(28)	14(13)	8(26)	1(5)	22	13(21)	9(18)	$X^2 = .04199$
NO	23(72)	25(84)	22(74)	19(90)	89	48(77)	41(80)	d.f. = 1
D/KNOW	-	1(3)	0	1(5)	2	1(2)	1(2)	$P < .45$
TOTAL	32	30	30	21	113	62	51	N.S.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D</u> - 3rd year.								
YES	5(15)	7(23)	4(13)	3(16)	19	12(19)	7(14)	$X^2 = .1114$
NO	28(85)	23(77)	26(87)	16(84)	93	51(81)	42(86)	d.f. = 1
D/KNOW								$P < .4$
TOTAL	33	30	30	19	112	63	49	N.S.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F</u> - 3rd year.								
YES	11(32)	12(41)	3(13)	4(21)	30	23(36)	7(17)	$X^2 = 3.673$
NO	23(68)	16(56)	18(83)	15(79)	72	39(62)	33(81)	d.f. = 1
D/KNOW	0	1(3)	1(4)	-	2	1(2)	1(2)	$P < .05$
TOTAL	34	29	22	19	104	63	41	

SCHOOL H - 3rd year. NO PRIZES AWARDED IN THIS SCHOOL.

WHOLE SAMPLE 3rd year  $P < .005$

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A</u> - 4th year.								
YES	118(55)	10(32)	16(40)		44	28(44)	16(40)	$X^2 = .029$
NO	15(45)	21(68)	20(50)		56	36(56)	20(50)	d.f.=1
D/KNOW	-	-	4(10)		4	-	4(10)	$P < .45$
TOTAL	33	31	40		104	64	40	N.S.

<u>SCHOOL B</u> - 4th year.								
YES	15(44)	7(22)	14(39)	12(34)	48	22(34)	26(38)	
NO	19(56)	24(78)	22(61)	20(66)	85	43(66)	42(62)	
D/KNOW								
TOTAL	34	31	36	32	133	65	68	N.S.O.W.

<u>SCHOOL C</u> - 4th year.								
YES	13(38)	5(19)	9(31)	3(13)	30	18(30)	12(24)	$X^2 = .3009$
NO	21(62)	21(81)	18(63)	19(87)	79	42(70)	37(72)	d.f.=1
D/KNOW	-	-	2(6)	-	2	-	2(4)	$P < .35$
TOTAL	34	26	29	22	111	60	51	N.S.

<u>SCHOOL D</u> - 4th year.								
YES	14(42)	7(24)	9(31)	5(20)	35	21(34)	14(26)	$X^2 = .6642$
NO	19(58)	22(76)	20(69)	20(80)	81	41(66)	40(74)	d.f.=1
D/KNOW								$P < .25$
TOTAL	33	29	29	25	116	62	54	N.S.

<u>SCHOOL F</u> - 4th year.								
YES	9(30)	3(13)	7(37)	4(20)	23	12(23)	11(28)	
NO	21(70)	19(87)	12(63)	16(80)	68	40(77)	28(72)	
D/KNOW								
TOTAL	30	22	19	20	91	52	39	N.S.O.W.

WHOLE SAMPLE 4th year  $X^2 = .1618$  N.S.

TABLE 51 - Attitude to school prize distributions.

Qu. 43 'I think school prize givings should be stopped.'

Ho. Attitude to school prize distributions is not stream related.

H1. The upper streams will have a greater desire than the lower streams for school prize givings to continue.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL A - 3rd year.</u>								
YES	3(11)	2( 7)	2( 9)		7	5( 9)	2( 9)	
NO	23(89)	24(93)	16(73)		63	47(91)	16(73)	
D/KNOW	-	-	4(18)		4	-	4(18)	N.S.
TOTAL	26	26	22		74	52	22	Y V N + D.K.

<u>SCHOOL B - 3rd year.</u>								
YES	1( 4)	1( 5)	3(13)	1( 4)	6	2( 5)	4( 8)	
NO	22(92)	20(95)	20(87)	25(89)	87	42(93)	45(88)	
D/KNOW	1( 4)	-	-	2( 7)	3	1( 2)	2( 4)	fe. < 5
TOTAL	24	21	23	28	96	45	51	N.S.

<u>SCHOOL C - 3rd year.</u>								
YES	4(12)	2( 6)	4(13)	2(10)	12	6(10)	6(12)	
NO	25(79)	26(88)	22(74)	16(76)	89	51(82)	38(74)	
D/KNOW	3( 9)	2( 6)	4(13)	3(14)	12	5( 8)	7(14)	
TOTAL	32	30	30	21	113	62	51	N.S.

<u>SCHOOL D - 3rd year.</u>								
YES	8(24)	6(20)	5(17)	5(26)	24	14(22)	10(20)	
NO	22(67)	22(74)	24(80)	14(74)	82	44(70)	38(78)	
D/KNOW	3( 9)	2( 6)	1( 3)	-	6	5( 8)	1( 2)	
TOTAL	33	30	30	19	112	63	49	N.S.O.W.

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL F</u> - 3rd year.								
YES	6(18)	4(13)	4(18)	2(10)	16	10(16)	6(14)	
NO	24(70)	25(87)	15(69)	14(74)	78	49(78)	29(72)	
D/KNOW	4(12)	-	3(13)	3(16)	10	4(6)	6(14)	
TOTAL	34	29	22	19	104	63	41	N.S.O.W.

<u>SCHOOL H</u> - 3rd year.								
YES	3(9)	8(26)	1(4)		12	11(17)	1(4)	
NO	27(85)	18(58)	20(84)		65	45(72)	20(84)	
D/KNOW	2(6)	5(16)	3(12)		10	7(11)	3(12)	
TOTAL	32	31	24		87	63	24	N.S.O.W.

WHOLE SAMPLE 3rd year N.S.O.W.

<u>SCHOOL A</u> - 4th year.								
YES	4(12)	1(3)	11(27)		16	5(8)	11(27)	$X^2=8.744$
NO	26(79)	30(97)	29(73)		85	56(88)	29(73)	d.f.=1
D/KNOW	3(9)	-	-		3	3(4)	-	$P < .005$
TOTAL	33	31	40		104	64	40	

<u>SCHOOL B</u> - 4th year.								
YES	8(24)	4(3)	3(8)	4(13)	16	9(14)	7(10)	
NO	24(70)	30(97)	33(92)	26(81)	113	54(83)	59(87)	
D/KNOW	2(6)	0	0	2(6)	4	2(3)	2(3)	
TOTAL	34	31	36	32	133	65	68	N.S.O.W.

<u>SCHOOL C</u> - 4th year.								
YES	4(12)	3(11)	7(24)	7(32)	21	7(11)	14(27)	$X^2=3.498$
NO	26(76)	18(70)	20(54)	12(55)	76	44(73)	32(63)	d.f.=1
D/KNOW	4(12)	5(19)	2(7)	3(13)	14	9(16)	5(10)	$P < .05$
TOTAL	34	26	29	22	111	60	51	

	A	B	C	D	TOTAL	A+B	C+D	
<u>SCHOOL D</u> - 4th year.								
YES	4(12)	2(6)	3(10)	3(12)	12	6(10)	6(11)	
NO	28(85)	25(88)	26(90)	21(84)	100	53(85)	47(87)	
D/KNOW	1(3)	2(6)	-	1(4)	4	3(5)	1(2)	
TOTAL	33	29	29	25	116	62	54	N.S.

<u>SCHOOL F</u> - 4th year.								
YES	6(20)	7(32)	3(16)	5(25)	21	13(25)	8(20)	
NO	22(73)	12(55)	14(74)	14(70)	62	34(65)	28(72)	
D/KNOW	2(7)	3(13)	2(10)	1(5)	8	5(10)	3(8)	
TOTAL	30	22	19	20	91	52	39	N.S.O.W.

WHOLE SAMPLE - 4th year  $P < .15$  N.S.

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APPENDIX THREE TABLES FOR SECTION 3 OF THE STUDY

ATTITUDES AND OPPORTUNITIES IN PERSPECTIVE.

LOWEST STREAM GRAMMAR SCHOOLS v 'A' STREAM SECONDARY MODERN SCHOOLS

(TABLES 52 - 55).

The lowest stream Grammar School pupils (N = 106) are compared with the 'A' stream Secondary Modern School pupils (N = 181).

Test: Mann-Whitney U Test for large samples not corrected for ties.

Two-tailed test as H<sub>1</sub> does not state direction.

H<sub>0</sub>. Scores in the two populations will have the same distribution.

H<sub>1</sub>. Scores in the two populations will not have the same distribution

1. in school orientation (Table 52); (Sch. Orientation Test).
2. in attitudes to class work (Table 53); (Qu. 5 - 10)
3. in attachment to school (Table 54); (Qu. 11 - 16)
4. in participation in school activities (Table 55). (Qu. 28 - 31)

TABLE 52.

U = 11590      z = 2.943      P < .0032      in favour of Sec. Mod. 'A' streams.

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TABLE 53.

U = 9641      z = .07073      P < .9442      N.S.

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TABLE 54.

U = 11406      z = 2.672      P < .0076      In favour of Sec. Mod. 'A' streams.

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TABLE 55.

U = 13535      z = 5.809      P < .00006      in favour of Sec. Mod. 'A' streams.

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'A' STREAM GRAMMAR SCHOOLS v 'A' STREAM SECONDARY MODERN SCHOOLS

TABLE 56 - School Orientation Test.

Test: Mann-Whitney U Test. Two-tailed.  $H_0$  and  $H_1$  as for Table 52.

Grammar Schools  $N = 110$

Secondary Modern Schools  $N = 181$

$U = 9910$        $z = .1413$        $P < .8886$       N.S. trend in favour of Gr. Schools.

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LOWEST STREAM GRAMMAR SCHOOLS v 'C' STREAM SECONDARY MODERN SCHOOLS.

TABLE 57 - School Orientation Test.

$H_0$  AND  $H_1$  as for Table 52.

Test: Mann-Whitney U Test. Two-tailed.

Grammar schools  $n = 106$

Secondary Modern Schools  $N = 151$

$U = 7515$        $z = .832$        $P < .4066$       N.S. trend in favour of Gr. Schools.

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LOWEST STREAM GRAMMAR SCHOOLS v 'A' STREAM SECONDARY MODERN SCHOOLS.

(Tables 58 - 63).

Ho. That involvement of pupils from the two groups will be to the same degree.

H1: That involvement of pupils from the two groups will not be to the same degree.

Test:  $X^2$  test. Two-tailed as H1 does not state direction. D.f. =1 in all cases. In Table 59 the combination of cells was not necessary but by combining 'sometimes' and 'often' the pattern of Section 2 is maintained.

TABLE 58 - Frequency of homework.

Qu. 34 'I do homework....never / sometimes / often.'

	NEVER	SOMETIMES	OFTEN	TOTAL	
L.S.G.S.	-	35(33)	71(67)	106	$X^2 = .11$
A.S.S.M.	-	55(30)	126(70)	181	d.f.=1
TOTAL	-	90	197	287	$P < .8$ N.S.
					$N + S > 0$

TABLE 59 - Representing the school at games.

QU. 'I play for a school team at games.....never / sometimes / often.'

	NEVER	SOMETIMES	OFTEN	TOTAL	
L.S.G.S	80(75)	14(14)	12(11)	106	$X^2 = 62.88$
A.S.S.M.	48(27)	66(36)	67(37)	181	d.f.=1
TOTAL	128	80	79	287	$P < .001$ in favour of
					$N > S + 0$ A.S.S.M.

TABLE 60 - Taking part in a school concert.

Qu. 28 'Have you ever taken part in a school play or concert?'

	Yes.	No.	Don't know.	Total.	
L.S.G.S.	53(50)	53(50)	-	106	$X^2=7.762$
A.S.S.M.	127(70)	54(30)	-	181	d.f.=1
TOTAL	180	107	-	287	$P < .01$ in favour of Y v N + D.K. A.S.S.M.

TABLE 61 - Work on Show.

Qu. 30 'Has any of your work been put on show in your present school?'

	Yes.	No.	Don't know.	Total.	
L.S.G.S.	51(48)	55(52)	-	106	$X^2=17.61$
A.S.S.M.	133(73)	42(24)	6(3)	181	d.f.=1
TOTAL	184	97	6	287	$P < .001$ in favour of Y v N + D.K. A.S.S.M.

TABLE 62x - Helping at school functions.

Qu. 29 'Have you ever been asked to help at a parents' night or when the school has been open to the public?'

	Yes.	No.	Don't know.	Total.	
L.S.G.S.	39(37)	67(63)	-	106	$X^2=20.63$
A.S.S.M.	118(65)	56(31)	7(4)	181	d.f.=1
TOTAL	157	123	7	287	$P < .001$ in favour of Y v N + D.K. A.S.S.M.

TABLE 63 - Membership of school clubs.

Qu. 42 'Are you a member of any school club?'

	Yes.	No.	Don't know.	Total.	
L.S.G.S.	50(47)	56(53)	-	106	$\chi^2=3.052$
A.S.S.M.	106(59)	73(40)	2(1)	181	d.f.=1
TOTAL.	156	129	2	287	$P < .1$ N.S.

Y v N + D.K.

GRAMMAR SCHOOLS v SECONDARY MODERN SCHOOLS - Tables 64 - 69.

The whole third year Grammar School sample (N = 363) is compared with the whole third year Secondary Modern School sample (N = 586).

Test:  $X^2$  test. Two-tailed as H1 does not state direction.

Ho. That involvement of pupils from the two groups will be to the same degree.

H1. That involvement of pupils from the two groups will not be to the same degree.

TABLE 64.- Frequency of homework.

Qu. 34. 'I do homework .....never / sometimes / often.'

	NEVER	SOMETIMES	OFTEN	TOTAL	
G.S.	-	66(18)	297(82)	363	$X^2=92.39$
S.M.S.	26(4)	264(45)	296(51)	586	d.f.=1 N +S v O
TOTAL	26	330	593	949	P <.001 in favour of Gr. Sch.

TABLE 65 - Representing the school at games.

Qu.31. 'I play for a school team at games.....never / sometimes / often.'

	NEVER	SOMETIMES	OFTEN	TOTAL	
G.S.	254(70)	60(16)	49(14)	363	$X^2=63.6$
S.M.S.	253(43)	199(34)	134(23)	586	d.f.=1 N v S + O
TOTAL	507	259	183	949	P <.001 in favour of S.M.S.

TABLE 66 - Taking part in a school concert.

Qu. 28. 'Have you ever taken part in a school play or concert?'

	Yes.	No.	Don't know.	Total.	
G.S.	178(49)	185(51)	-	363	$X^2=4.738$
S.M.S.	331(57)	255(43)	-	586	d.f.=1 Y v N + D.K.
TOTAL.	509	440	0	949	P <.05 in favour of S.M.S.

TABLE 67 - Work on show.

Qu. 30. 'Has any of your work been put on show in your present school?'

	Yes.	No.	Don't know.	Total.	
G.S.	176(48)	187(52)	-	363	$X^2=20.04$
S.M.S.	372(63)	180(31)	34(6)	586	d.f.=1 Y v N + D.K.
TOTAL.	548	367	34	949	P <.001 in favour of S.M.S.

TABLE 68 - Helping at school functions.

Qu. 29. 'Have you ever been asked to help at a parents' night or when the school has been open to the public?'

	Yes.	No.	Don't know.	Total.	
G.S.	117(32)	246(68)	-	363	$X^2=23.54$
S.M.S.	284(48)	287(49)	15(3)	586	d.f.=1 Y v N + D.K.
TOTAL.	401	533	15	949	P <.001 in favour of S.M.S.

TABLE 69 - Membership of school clubs.

Qu.42. 'Are you a member of any school club?'

	Yes.	No.	Don't know.	Total.		
G.S.	203(56)	160(44)	-	363	$X^2=29.9$	
S.M.S.	220(38)	361(61)	5(1)	586	d.f.=1	Y v N + D.K.
<b>TOTAL.</b>	<b>423</b>	<b>521</b>	<b>5</b>	<b>949</b>	<b>P &lt; .001</b>	<b>in favour of GR.SCH.</b>

TABLE 70 - Summary of opportunities in the Grammar / Secondary Modern

Schools.

PERCENTAGES.

	GRAMMAR	SEC. MOD.
Homework often.	82	51
Games for the school - sometimes or often.	30	57
School concert.	49	57
Work on show.	48	63
Helping at school functions.	32	48
Membership of clubs.	56	38

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APPENDIX FOUR INTERNAL CONSISTENCY CHECK FOR THE ORIENTATION TESTS.

TABLE 71 - Internal consistency of the School Orientation Test and the sub-groups.

The responses to the twenty questions retained in the above were as follows: H.S. = High scorers. L.S. = Low scorers.

<u>Question.</u>	5		6		7		8		9		10	
	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	
YES	41	26	32	22	1	13	37	20	1	12	4	31
NO	0	13	6	17	34	23	2	13	37	26	32	9
DON'T KNOW	1	3	4	3	6	6	3	9	4	4	6	2

<u>Question.</u>	11		12		13		14		15		16	
	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	
YES	7	36	4	26	38	6	2	30	40	30	37	23
NO	31	6	38	16	3	34	39	9	0	10	2	15
DON'T KNOW	4	0	0	0	1	2	1	3	2	2	3	4

<u>Question.</u>	17		18		19		20		21		22	
	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.	
YES	30	4	34	4	10	37	17	39	40	24	12	25
NO	7	36	7	36	19	3	20	2	2	17	27	15
DON'T KNOW	5	2	1	2	13	2	5	1	0	1	3	2

<u>Question.</u>	23		24	
	H.S./L.S.	H.S./L.S.	H.S./L.S.	H.S./L.S.
YES	37	8	2	29
NO	3	29	39	12
DON'T KNOW	2	5	1	1

Scoring pro-school responses 3, uncertain responses 2 and anti-school responses 1, the following results are obtained.

<u>Question.</u>	5	6	7	8	9	10	11
High scorers.	125	110	117	119	120	112	108
Low scorers.	97	89	94	91	98	62	54
Difference.	28	21	23	28	22	50	54

<u>Question.</u>	12	13	14	15	16	17	18
High scorers.	118	119	121	124	119	107	111
Low scorers.	74	56	63	104	92	52	52
Difference.	44	63	58	20	27	55	59

<u>Question.</u>	19	20	21	22	23	24
High scorers.	93	87	122	99	118	121
Low scorers.	50	47	91	74	83	67
Difference.	43	40	31	25	35	54

Applying the Chi-square test to each question, 'Don't know' responses being combined with the smaller of the Yes / No rows in order to test a directional H<sub>1</sub>, the following results were obtained.

H<sub>0</sub>. That there will be no difference between the scores of the two groups in individual questions.

H<sub>1</sub>. That the 'high scorers' will achieve higher scores than the 'low scorers' in the individual questions.

<u>Question.</u>	5	6	7	8	9	10	11
X <sup>2</sup> =	14.46	4.202	5.458	13.97	6.409	19.06	27.83

<u>Question.</u>	12	13	14	15	16	17	18
$\chi^2 =$	22.88	40.41	33.75	6.945	9.86	25.72	34.81

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<u>Question.</u>	19	20	21	22	23	24
$\chi^2 =$	9.86	15.33	14.77	3.867	25.61	31.56

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$\chi^2 > 2.71$  in all cases and therefore the differences are significant beyond the .05 level.

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