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## Abstract

### Student Teaching Success

The study is in three parts.

Part One looks at background. It briefly covers historical concepts of education, of what was and is thought to constitute good teaching; it goes on to look at the people who enter teaching and why they have chosen it as a career. Lastly part one looks at the hurdles they have to negotiate before being offered a place in a college of education.

Part Two looks at some of the variables which affect student teaching performance - personality, flexibility and how these have been shown to relate to measured teaching performance. It also looks at those variables external to the student which research has shown are likely to affect the marks a student will get for teaching practice. Finally section two looks at the relationship between teaching practice performance and future performance as a qualified teacher.

Part Three is the empirical research. Five year groups of students already in colleges of education and one further group interviewed for a place at Bede College, Durham, constitute the research sample. Measures of academic performance, interview grades, I.Q. and flexibility scores were used as predictors of student teaching marks.

Consistently the I.Q. score and flexibility score in multiple battery produced the best first order multiple prediction of teaching practice marks. Also consistently, G.C.E. and Interview grades produced the worst multiple prediction of teaching practice marks. The test of flexibility was shown by multiple regression analysis to consistently provide the significant predictive contribution to those multiple batteries in which it was present. The women students obtained very significantly higher scores on the test of flexibility than did the men students. One unexpected finding was that students who would have preferred to go to university were regarded as significantly poorer classroom performers than the rest.

The appendices deal with the various predictors used in the empirical study, in particular with the development of the test of flexibility. The hypothesis that a test of verbal flexibility would predict the marks awarded to students for their teaching practice performance was accepted.

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## STUDENT TEACHING SUCCESS

An enquiry into the predictability  
of teaching practice marks, with special reference  
to those awarded to students attending  
a college of education

Presented to the  
University of Durham  
for the degree of  
Doctor of Philosophy

by

A. C. Crocker M.Ed.

APRIL 1973

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Introduction

This thesis is presented in three parts.

Part one is, in effect, background. Teachers work in a social context. Their roles and tasks at any particular time in history are defined by the educational beliefs of that time. Prior to the 20th Century the teacher's task appears to have been to inculcate knowledge and obedience. During the last half century or so educators have increasingly believed that learning should be for its own sake and so the teacher's role has been seen as changing towards that of guide. From America there is some evidence that the pendulum is swinging back. Parents tend to be more interested in product than process. There extrinsic rewards have recently been demonstrated to produce faster pupil learning than intrinsic rewards and parents are more interested in pupil academic gain<sup>690</sup> than philosophical argument.

Teachers chose teaching as a career against the background of their own schooling, social position and their concepts of the teacher's role and status in society. The college at which they prepare for their chosen career depends in part on their previously acquired academic qualifications, partly on the advice they are given by friends, parents and careers advisors, and partly on the level of rapport established at the time of interview.

Part one therefore attempts to look at these variables because they are largely uncontrolled factors which nevertheless must have affected many of the research findings reported in parts two and three.

Part two examines research findings where the relationship between teaching success, however defined, and student teaching success; or between teaching success and the measured attributes of the teacher.

Firstly, research findings about the personality of teachers and student teachers. Specifically this is broken down into 'personality', 'attitudes' and 'flexibility'. Much has been written, and still is, about the teacher's personality and 'the right personality for the job' despite overwhelming evidence that teachers represent a normal sample of the population in as far as most personality traits are concerned. (The N.A.S.<sup>691</sup> has just urged the James Committee to start a job analysis which should concentrate on "the personal characteristics a teacher should have".)

Secondly, (chapters eight and nine respectively) look at factors which are external to a student but which are known to affect his performance on teaching practice and also to affect the rating he receives. The rating that the student gets for his teaching performance frequently has a bearing on the ease with which he gets his first appointment, and yet subsequent promotion is virtually non-related to his performance at college. Many argue that performance on teaching practice has little relationship with the student's subsequent classroom skill.

Part three is concerned with my own empirical research. Phillips<sup>412</sup> in the introduction to his Ph.D. thesis complained

bitterly about the lack of cooperation he received when he attempted to set up his study. Cortis<sup>114</sup> also mentioned this lack of willingness, by principals, to commit their students to a process of investigation. Partly this can be explained (and explains my own lack of success when I approached twelve principals with a request to test their students) by the general excuse I received, that tutors internal to colleges are already subjecting students to questionnaires, tests, profiles and many other research instruments. This research 'got off the ground' because of the willingness of Mr. K. G. Collier, the Principal of Bede College, Durham, to support it and also to personally approach other principals on my behalf. Eventually four colleges were (hopefully) — to be my sources of students. Bede College of Education provided the main samples, from the students who arrived in 1961 to the students who left in 1970. Sunderland College of Education provided the other viable sample.

The other two colleges proved to be of little practical value. At one the head of the psychology department forgot to tell the students I was coming to test them. At the other the assigned testing time of 8.30 a.m. proved too early for all but thirteen out of four hundred students. This second small group nevertheless provided valuable information about the general administration of the tests and possible sources of misunderstanding.

The purpose of this investigation has been to see whether a variety of tools, singly or in battery, can predict the marks tutors

give to student teachers for their teaching practice performance. In particular a test of flexibility was developed to examine the hypothesis "that teachers need to be flexible if they are to be successful". It was hoped that classroom flexibility might be predicted by a written test of verbal flexibility.

Despite the many suggestions to the effect that teaching practice marks are at best dubious predictors of future teaching success, it remains a fact, as Professor Eaglesham has said, that "At the colleges we assess student teaching and then accept that these assessments are valid in as far as passing or failing student teachers is concerned." Currently that assessment is applied to some 100,000 British students every year.

Part One

Chapter One

A brief history of the developing aims of  
and demand for education, teacher preparation  
and concepts of teaching

Education throughout the history of mankind has always been purposive. The purpose has often changed from time to time. In almost every era at least one voice has been heard querying the contemporary educational beliefs and practices:

"As things are ... mankind is by no means agreed about the things to be taught, whether we look to virtue or the best life. Neither is it clear whether education is more concerned with intellectual or moral virtue. The existing practice is perplexing: no one knowing on what principle we should proceed - should the useful in life, or should virtue, or should the higher knowledge be the aim of our training; all three opinions have been entertained. Again, about the means there is no agreement: for different persons, starting with different ideas about the nature of virtue, naturally disagree about the practice of it."

Since Aristotle wrote the original words in Book VIII of Politics, concepts of what should be taught and to whom and why it should be taught have altered many times. Inevitably, as these concepts have altered so have ideas of "how" and "when" things should be taught; leading, through the ages, to different ideas of what constitutes the good teacher and good teaching.

Our beliefs about education and our educational practices have not just happened. They have developed out of our past.

It is therefore worth spending a few pages covering the many years of 'education' which preceded the opening of the first English training college.

The Spartans saw education as primarily a physical education leading to strengthened group membership, recreation and, the obvious one for their community, increased physical efficiency for war. As a result their concept of excellence in education coincided with military excellence.

The Athenians also believed that education for the total person involved considerable quantities of physical activity but for them the purpose was reduction of flabbiness and increased beauty not only of the body but also of performance.<sup>568</sup>

The Ancient Greeks laid down at least a part of the educational philosophy which lasted for the next two thousand years - education for citizenship was for the elite. Both Aristotle and Plato believed, and taught, that the slaves and producing classes should have nothing to do with ruling whilst the ruling classes must not work.<sup>198</sup>

The Romans too saw education as the process through which boys passed in order to become toughened for the arduous tasks of warfare and Empire building. An extra function of education was to produce orderly, disciplined citizens with orderly, disciplined minds, another early aim which survived in education for the next two thousand years.

### Early English Aims

The main provisions of education in the eleventh to fifteenth

centuries amongst the nobility and knights were still, as in Roman times, to meet the needs of war and contest. Between 1200 and 1500, the Church and the Monarchy felt an increased need for literate administrators brought up to respect and show loyalty to the established Church and to the nobility. The majority of the population however still received only that education needed for their life's trade.<sup>568</sup>

Vives in the early years of the sixteenth century was probably one of the earliest thinkers to become more concerned with the learner than with what is learned, arguing that the learning process is determined by the nature of the learner's mind<sup>56</sup>, a belief which made little headway with most educators for the next three hundred years. Cordano and Mercurialis<sup>568</sup> two sixteenth century doctors reintroduced physical education to society. They saw the major aim of education as the development of the whole body, an aim developed by another Italian doctor, Madame Montessori, over 300 years later. In England, C. A. Hoole<sup>198</sup> in 1659 laid a foundation stone for colleges of education which lasts to the present day, when he said: "I think it is one thing to be a good schoolmaster and another thing to be a good scholar, though the former cannot well do his duty as he ought, except he be also the latter."

By the time of the Reformation major changes had occurred in the aims of education. Knowledge only becomes wisdom, according to Bacon, if it is useful, whilst Mulcaster was pointing out that

the aim of education should be to enable a man to live with others, not alone.<sup>568</sup> Undoubtedly these earlier reasonings helped Locke to his beliefs in the seventeenth century that good health was essential for mental education, which was not just the acquisition of a stock of knowledge but rather the ability to think and reason. Education that achieved this purpose would lead young gentlemen along the pathway towards the highest character and refinement. Locke saw a need for education of the poor but again his concept of a school for the poor was of a place where a trade could be learned.<sup>41</sup>

Although Locke and Rousseau disagreed as to the fundamental nature of man, in their thinking we can find some of the earliest beliefs that education should be for the sake of the child. Rousseau believed that education was a means for protecting children's essential goodness from the evil influences of society but like most of his contemporaries he saw no need, in "Emile", for education for the poor to go beyond what they got via nature and daily work.<sup>41</sup> & 568.

Pauperism in the eighteenth century was still believed to be due to a lack of character and self respect. To right this the S.P.C.K. started to increase the number of Charity Schools, hoping as they did so that education via piety would lead to industrious uprightness. A breadth of the widening concept of the 'school-

master' can be seen in their 1706 requirement for teachers to be more than members of the Church of England who were able to pass an examination in the principles of the Christian religion. They wanted, besides, men with "an aptitude for teaching".<sup>41</sup> It is perhaps noteworthy that only two years earlier Franke<sup>587</sup> opened what was probably the first teachers' college in Europe at Halle.

As the Charity Schools continued to expand their aims altered but little. Robert Raikes' Sunday School in Gloucester was opened because he felt it was desirable that the coarse, undisciplined children should learn self control, feel Christian influence and, a giant step forward, learn the elements of reading. A sentiment not entirely shared by C. B. Manderville who wrote in 1772: "...if parents are so miserably poor that they cannot afford their children the first elements of learning (reading and writing) it is imprudent to aspire any further." By 1795 he was further claiming that the quality of teachers in the Charity Schools was abysmal.<sup>41</sup> It was still generally accepted however that the Charity Schools were able to provide all the education that was needed for children of low status, the public and grammar schools being the source of education for those children destined to become gentlemen.

By the close of the 18th century the person destined to have a major effect upon world educational beliefs and practices was only just starting upon that phase of his career due to earn him world acclaim as a teacher, although already in his fifties. Pestalozzi, influenced enormously by the teachings of Rousseau, believed in

universal education as a means to social regeneration. This belief was often ignored by the world's visitors to his village community for poor children. Not so however his skill at pedagogy, and ideas of developmental learning. 'Go from the simple to the complex' was copied (and miscopied) throughout Europe, as were his geography walks and insistence on observation being a part of the learning process.

In Germany Fichte<sup>56</sup> saw in Pestalozzi's ideas the need for a national education and was one of the few to attempt to put his philosophy into practice. His enthusiasm was such that Hanboldt was appointed to the task of reorganising education. A new university was established interested in research rather than in just teaching and examining what was already known. The appointed professors had to prove their capacity for original work. Within the school system teaching became separated from a career in the clergy. Hamboldt moved too fast for some. His efforts to improve primary education for all earned the distrust of the king and upper classes.

Herbart, after visiting Pestalozzi and seeing him teaching, asked many questions that might well have come from today's advocate of child centred discovery learning.

"But why does Pestalozzi give so much to be learned by heart? Why does he seem to have chosen the subjects of instruction with so little consideration for the natural inclinations of children? Why does

he only allow learning, never talks himself with the children, never chats, jokes, tells stories to them? Why is everything which might mitigate the seriousness of school life here scornfully banished? How is it that he, at the first glance such a friendly, lovable man, he who greets everything human with such gentleness, whose first word to the stranger seems to say 'here he who deserves it will find a heart' - how is it that he, amongst the children who possess his whole heart, no longer pours forth joy, no longer combines the pleasant with the useful?"

Herbart believed that morality was the whole point of education, being the highest aim of humanity. He also believed that no person currently lived who was perfect enough to serve as a model for boys to strive to imitate, only in the heroes of Greek mythology did such a pattern exist. Initially boys had no 'will' of their own and so were incapable of moral decision, therefore the wild impetuosity of youth must be subdued, by force if needs be, until the true moral will appears. Small wonder that having asked the questions of Pestalozzi's techniques Herbart should conclude that because knowledge is the key to morality it is too serious to be side-tracked by lightheartedness and diversions and so Pestalozzi was exactly right in his approach to the learning situation.<sup>257</sup>

#### English Education begins to emerge

In England the opposition to popular education came not only

from the clergy and gentry but also from the new 'middle class' factory owners.<sup>56</sup> Frightened perhaps by the new philosophies of the French revolutionaries they saw education for their hired hands as a threat in part because it would make them less dependent on their employers. Parliamentary action in 1802 with the first factory act "The health and morals of apprentices" limited working hours in the mills to twelve hours a day for apprentices and included a demand for two of those hours to be given over to instruction in the three R's. It was probably one of the main reasons for the enthusiasm with which Lancaster's claim, to be able to educate 1000 children per teacher, was received. The working population too were in the main opposed to their children receiving schooling instead of bringing money into the home. However, working class opposition to the 1833 act, which prohibited all work by children under nine years of age, was muted by the discovery that the withdrawal of young labour increased their own negotiating position in wage demands.

By the start of the first third of the nineteenth century Van Dalen<sup>56</sup> feels that the aims behind educational policy in most European countries was the production of literate, loyal, submissive, God-fearing citizens who were well satisfied with their position in life. In America, he claims, the major aim was for all people to be numerate and literate. In the work of Robert Owen, Bell and Lancaster many of these aims can be seen to have been carried well into the nineteenth century in Britain.

Robert Owen in 1816 was one of many who still believed that social misery was due to a lack of right character.<sup>41</sup> However, basing his philosophy on the work of John Locke, he moved contemporary thought a long way forward by suggesting that man is not responsible for his character but becomes what he is because of his early upbringing. Not surprisingly he advocated that learning for living should be a part of school life, and that the setting up of a national system of education would provide a better governed state.

Both Bell and Lancaster were deeply religious and are usually remembered for their efforts to get mass education inexpensively off the ground.

Bell's ideas had led to the founding of Barrington School in Durham.<sup>288</sup> Monitors 'learned the job' of teaching by doing it. They were not to receive too much education themselves as Bell believed it to be dangerous to educate teachers beyond their place in society. Teachers were formed by "attending school, seeing what goes on there, and taking a share in the office of tuition..."  
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Lancaster<sup>288</sup> opened a residential department at Borough Road in 1805 where monitors were responsible for passing on the elements of literacy. Educational principles and the study of the child were ignored. Teaching techniques developed from the sheer necessity of passing on information as quickly as possible to the masses of children under each teacher. The monitorial system

although initiated as a means of raising the basic level of literacy of the masses was copied to financial advantage by some of the private sector of education. Charterhouse instituted a system whereby a boy had to satisfactorily teach a younger form for six weeks in order to earn his own promotion and so further his own learning.<sup>41</sup>

Although their methods were found eventually to be unacceptable their contribution to basic principles of teaching and teacher education should not be lightly dismissed if only because of the aversion they caused in Robert Stow. He condemned the system saying that the whole child should be educated, not just his memory, via the interaction of mature and immature minds. He opened the first Normal Seminary for teacher training in 1826. The course rapidly expanded from purely professional training to include the further education of the students.<sup>288</sup>

Owen, Stow, Bell and Lancaster amongst many others can be seen to have provided the means whereby the number of children at school doubled between 1818 and 1828 and although the schemes of Bell and Lancaster eventually failed they did leave England with a network of schools available for more viable movements. Unfortunately quackery, charlatanism and incompetence, rife both in the monitorial system and private schools, had brought the career of schoolmaster into social disrepute and become a considerable stumbling block for recruiters trying to improve teaching and teacher training.

The poor quality of teaching in the private sector was particularly brought to public notice by the work of a group of <sup>20</sup> Manchester men. In 1834 their desire for social improvement led them to form the Manchester 'Statistical Society', with the aim of collecting accurate information. Their reports were published between 1834 and 1837. They found that the Dames' schools were staffed by people whose main aim was often "to keep a bit of quietness, it's as much as I can do, and as much as I'm paid for." The dames usually supplemented their teaching income with shop keeping, sewing, taking in washing, or selling milk. The common day schools, which charged a little more and were in the society's opinion a little better than the dames' schools, were characterised by dirty rooms, bad air, incompetent teachers, disorderly ways, no books, no apparatus and a floating population of boys and girls who learned, or failed to learn, the elements of the three R's to the constant accompaniment of the birch. Perhaps the worst example was a school in Liverpool, where a garret measuring 10 feet by 9 feet contained one master, one cook, two hens, three black terriers and forty children. In general the masters had a high opinion of their own skill and knowledge. <sup>639</sup>

In both types of school the common aim was to earn a living, in effect, by child minding.

#### The Start of the English Training Colleges

The ideas of Bell and Lancaster can be seen to have lived on and been practiced in Coleridge's philosophy of teacher training at Borough Road College where

practical teaching was seen as the only purpose of training. At St. Mark's Canon Daniels held differently that "you can't train them as school masters until you have first educated them as men..." and so instituted an extremely academic approach. Kay Shuttleworth at St. John's Battersea was the first to seek a balance between the two views, striving to practise the relationships in his college which he hoped would be shown by teachers and pupils in school<sup>588</sup> whilst at the same time aiming to insulate teachers from the evils of intellectual pride, superiority and selfish ambition.<sup>554</sup>

Birchenough, writing in 1937, believed that Kay Shuttleworth's ideas were unfortunately based on the false psychology of breaking units of knowledge down into smaller units, which were presented in order of simplicity to the children.<sup>41</sup> Her attitude can be clearly seen to be affected by the current Gestalt theories of seeing things as wholes from the start. Interestingly many of today's writers, including Robert Gagne, would once again agree in general with Kay Shuttleworth.

Shuttleworth had been heavily influenced by Stow's aims, which were radically different from those held by the Churches, "redeeming by education the mischief wrought by generations of a vicious parentage" and he embodied them in the philosophy of St. John's. The nation at this time was noting that the outbreaks of violence in industrial and mining areas was inversely proportional to the amount of education available there. As a result in 1843 St. John's College became specifically geared to training schoolmasters

for manufacturing and mining districts and can be regarded as the first official recognition of the influence of education on the future destiny of the nation.<sup>587</sup>

By 1846 the government took another step towards recognising the need for quality teachers when the Inspectors were given the power to recommend quality teachers for extra salary and the Queen's scholarship was introduced for pupil teachers to compete for in order to obtain a place at a training college. In 1847 the powerful Lord Macaulay clearly saw education as the means of producing orderly, law abiding citizens when he spoke in favour of the Government's request for £100,000 for the education of the people:

"I believe, Sir, that it is the right and the duty of the State to provide means of education for the common people. ... (All) unanimously acknowledge that it is the duty of every government to take order for giving security to the persons and property of the members of the community.

This being admitted can it be denied that education of the common people is a most effectual means of securing our persons and our property?"

He went on to point out how Adam Smith's prophecy of dreadful disorder if the multitude were left uninstructed was borne out in the 'No Popery' riots of 1780 when:

"Without a shadow of a grievance, at the summons of a madman, a hundred thousand people rise in insurrection."

Parliament was besieged, the peers pulled from their coaches, Bishops forced to flee, the Chapels of foreign ambassadors destroyed, the prisons thrown open, fires started on thirty-six sites. Inevitably retribution followed with more being hanged, shot, crushed and drowned than have at times been lost in battle. Similar uprising arose in Nottingham, Bristol, Yorkshire, Kent and Wales.

"Could such things have happened in a country in which the mind of a labourer had been opened by education, in which he had been taught to find pleasure in the exercise of his intellect, taught to Revere his Maker, taught to respect legitimate authority, and taught at the same time to seek redress of real wrongs by peaceful and constitutional means?"

He further pointed out that nearly one third of the men and half of the women married in 1844 could not even sign their names in the register, whilst those who could were often taught by the rejected refuse of other callings, none of whom would be 'trusted with the keys of our cellars'. The £100,000 was approved by 372 votes to 47<sup>641</sup>.

Within this same year of 1846, the College of Preceptors was formed, committed to raising the standards of teachers; by 1847 there were over 2000 members feverishly demanding books. Pupil teachers rose from 3,580 in 1849 to 15,224 in 1859.<sup>554</sup> Many people were, however, still disturbed by the poor quality of the teachers now pouring out of the colleges. H.M.I.s commented that the students at St. Mark's lacked the ability

to command the attention of a class.<sup>587</sup> Dickens<sup>640</sup> saw them as a typical product of the industrial age when he described Mr. Choakumchild:

"He and some hundred and forty other schoolmasters had been lately turned out at the same time in the same factory, on the same principles, like so many pianoforte legs... He knew all about the watersheds of the world, all the histories of all the peoples, all the names of all the rivers and mountains, and all the productions, manners and customs of all the countries, and all their boundaries and bearings on the two and thirty points of the compass... If only he had learned a little less, how infinitely better he might have taught much more."

Many writers of that time mention the belief that a good teacher was regarded as being the one who had learned most off by heart and succeeded in getting his pupils to do likewise. Teaching, however, continued to improve and by the 1860's housewifery, woodwork and gardening were being taught in many elementary schools.<sup>145</sup> However by 1860 only one in eight children of school leaving age could read and very few of these stayed on at school after they were eleven years old. The Newcastle Commission in 1861 noted particularly the superiority of the trained teachers compared with the untrained. In their survey they had compared the teaching in 470 schools staffed by trained teachers with that in 215 staffed by untrained teachers. The

two types of school were described as follows:-

	good	fair	inferior
470 schools with trained staff	24%	49%	27%
215 schools with untrained staff	3%	39%	58%

They also found, however, that many of the allegations of poor instruction in state schools were true but usually because of poor methods, extreme youth of many teachers, the early school leaving age, truancy and teacher shortage, rather than the neglect of duties which had been prevalent in the 1830's.<sup>554 & 41</sup>

The "payment by results" Revised Code of 1861 had an immediate adverse effect on the widening school curriculum. The number of pupil teachers fell rapidly and the colleges soon became little more than crammers scrambling for results with noticeably increased artificiality in the practice schools. By 1867 the money allocated to the colleges had dropped leading to a drop in the quantity and quality of students.<sup>554 & 588</sup> Once again a cry was heard against the wooden teaching of the new generation leaving the colleges, this time from Miss Beale of Cheltenham Ladies College, who complained 'that certified teachers began to teach before they began to think. They often had notebooks full of model lessons on topics they'd never read for themselves.' At that time too there was much opposition to training by the students themselves based on the belief that teachers are born not made. The very fact that theories of education were altering made them, for some, not worth learning; although this excuse often hid a sullen contempt for all theory.<sup>198</sup>

Physical education perhaps more obviously than any other subject

reflects the rapidly changing attitudes towards children which have occurred between 1860 and the present time. The first P.E. teachers were trained in 1861. They were all Army N.C.O.'s who attended a six month course at Oxford University Gymnasium. The method of instruction was for the instructor to perform an exercise as perfectly as possible and then the pupil would copy it.

At the end of the six months at Oxford the Army Physical Training Corps came into being at Aldershot and gymnastics spread rapidly through the Army and the country. It became officially recognised for schools in the 1870 Education Act and the Revised Code of 1871 allowed attendance at "Drill" to count as school attendance for payment of grant purposes. The aim in the Physical Education "Squad, recruit and Company Book" was to provide sufficient drill 'to ensure habits of sharp obedience, smartness, order and cleanliness'. Teachers had to pass the Army Volunteers Sergeant's Examination to be placed in charge of school drill. Not until 1877 did the first town, Sheffield, insist that P.E. teachers should wear non-military uniforms.<sup>331</sup>

The 1870 Education Act and its revised code made no actual reference to the training of teachers, however, the increased school population brought demands for more and better teachers. School boards took action to improve the education of pupil teachers and to press for more college places outside the control of the voluntary societies.<sup>638</sup> As a result colleges expanded rapidly in the immediate years following the Act and were soon being criticised

again because of the excessive working hours, large numbers of old students on the staff (several of whom never left the college to teach) which led to narrowness of vision and the fact that too much was done for, rather than by, the students.<sup>41</sup>

A noteworthy happening inside the profession of teaching, in the same year as the first Education Act, was the formation of the N.U.E.T. which started teachers along the path towards becoming united.<sup>554</sup>

By 1886 the standard of pupil teachers was again falling off. Dr. Crosskey reported that in that year one third of the applicants to training colleges failed to qualify. By 1891 the figure was 40%. Despite the pressure from school boards for training colleges free from religious ties, by 1888 the various Churches owned 30 out of the 34 colleges.<sup>587</sup> Their hold was destroyed by the advent of the day training colleges in 1890 which brought in its wake a wealth of more enlightened teaching methods. Many of the earlier changes were to meet the reputed needs for scientists and technicians. Pupils were subjected to long hours of progressive analysis of data and material on the assumption it would improve their powers of observation. However the turn of the century brought recognition of the functional value of play and an insistence by the Froebelians that teachers should be aware of the principles and values implied in their teaching.<sup>330</sup> Others still measured teaching skill by the speed at which the contents of a book could be poured into a learner. Strong support too for the belief that learning should be disagree-

able as that provided exercise for a child's will power<sup>198</sup> made the Froebelians task an uphill affair.

In 1893 a measure of the improved status of the elementary teachers can be seen in the promotion of the first from their ranks to become a full H.M.I. The vast majority, however, by 1900 were still ex Oxford and Cambridge graduates.<sup>554</sup> Just as the inspectorate was firmly in the hands of the middle classes, so by now were the key teaching and school board positions. Men entering teaching from the London colleges found that they were not judged on their qualifications or teaching ability but on how well they conformed to the existing pattern set by the ordained Oxbridge classicists.<sup>334</sup>

#### Twentieth Century Change

By 1900 there were 4085 student elementary teachers at 61 training colleges and 1355 students at university day colleges. According to J. H. Yoxall, an H.M.I. of the time, the most important entry requirement at the 35 church colleges was active membership of the appropriate church.<sup>477</sup>

The inspectorate by this time was coming in for its share of criticism, drawing as it did its members almost exclusively from the ranks of the Oxford and Cambridge graduates. Thring<sup>328</sup> in 1899 asked: "How can those who've never taught a child be authorities on teaching? Is teaching the only subject in which ignorance is knowledge?"

The 1902 Education Act was in effect the first to successfully

get all children into school. New municipal schools were built and the inspectorate brought considerable pressure to bear in an effort to break the atmosphere of rigid discipline and teaching based on repetition.<sup>36</sup> They had a heavy task for still:

"The cane was the most dreaded instrument in those days. There was always a store of them in the cupboard and many of them were split on boys. Fights with masters used to take place in the classrooms, the masters being pelted with inkwells, books or anything that came to hand. Some of the masters were rather brutal. They probably had good cause, but they were unable to control their tempers."<sup>481</sup>

Attitudes amongst the upper working classes were fast altering toward education. Now at the beginning of the twentieth century success came to depend more and more on experienced judgement and training. The increased demand for skilled mechanics, engineers, executives and clerks made the advantages of further schooling apparent to a growing number of parents.<sup>36</sup> Growing incomes meant that for the first time society could support more than a handful of highly educated people who by virtue of being educated would inevitably become non productive. The clerks, who had benefitted from the expansion of the elementary schools following the 1870 Act, were especially quick to see the advantages of education for their own sons and to demand access to secondary education which was still exclusively middle class.<sup>36</sup> (A parallel today is the complaint that

the partially educated lower middle classes, rather than the working classes are the ones who attend W.E.A. courses and have flocked to sign for courses with the Open University.) The large masses of working class parents were however still untouched by these aspirations and indeed could be said to have a similar long term aim to the middle class parents - namely to keep their children in their own class. This led to the middle class parents chasing after secondary education and the working class parents in general spurning it.<sup>24</sup>

The secondary education so desired by upper working class and possessed by middle classes was at the time rapidly changing. Besides the inevitable classics; modern languages, literature, history, geography and sciences were introduced to the curriculum often against the will of the school. Grants from the Charities Commission, however, were frequently tied to new men being appointed to the school governing body and scientists being appointed to the school staff. The science teachers were not welcome. They tended to come from the non-Oxbridge universities, to prepare their work methodically and no classicist or geographer could easily step in to take their place. For the first time headmasters could not teach everything covered by their assistants. H.M.I.'s by 1907 were still, however, criticising the majority of teaching in grammar schools for the lack of understanding of teaching principles which was shown. Most of the teachers were untrained and indifferent to a training which made no difference to promotion chances.

In 1904 for the first time the Board of Education - under Sir Robert Morant - stated its aims for education in the elementary school. These were to form and strengthen the child's character, to develop his intelligence, and to fit children both practically and intellectually for life via habits of observation and reasoning. To familiarise them with man's ideals and achievements, literature and history, to provide power over language for thought and expression, develop a desire to increase knowledge via the child's own efforts and to produce healthy bodies.<sup>41</sup>

This last came out of the knowledge that the physical health of children in industrial Britain was worse than it had been in the past. Many children were poorly fed and in poor physical shape. Physical education became linked with physical health with the resulting obscuring of its potential contribution to social and mental development. Citizenship and obedience to law can be seen to be educational aims in the Board of Education's agreement in 1906 to one hour per week of games where besides learning to play the game children would learn:-

"to give and take, to devote themselves to a common cause, to feel pride in the achievements of others, to accept victory with becoming modesty and defeat with due composure and ... to acquire the spirit of discipline."

The 1904 Act had at last provided a channel for gifted children attending elementary schools to be selected for secondary education but unfortunately this soon became a prime function inhibiting the

school curriculum which had only just begun to broaden again following the 'Payment by Results' of the 1860's. In 1907 the Board of Education laid down that 25% of grammar school places must go free to elementary children. As a result middle class parents started to send their children to the elementary school for at least the last few months prior to selection in order to have a chance of saving the fees. Typically the London County Council in its building programme to meet the increased demand for secondary places built its new grammar schools in areas where an abundance of middle class families meant that the 75% of paying pupils were assured.<sup>36</sup>

In 1906 there were 11,018 recruits to pupil teaching but in 1907 the Board of Education began to abandon its attempts to educate them part-time and instead of wages offered bursaries to sixteen year olds who signed a declaration of commitment to teaching. By 1909 this resulted in only 1,115 pupil teacher recruits coming forward. However, this shortage was balanced in part by the central government's agreement to pay 75% of the cost of new colleges. By 1914 twenty two new ones had been built.<sup>477</sup>

Gradually education became abstracted from the pressures of living and in America John Dewey protested vigorously against this change, believing that education should have a definite useable purpose. He was one of the people who believed that the belief that children see the world as a whole and so to break knowledge down into "subjects" was wrong. Professor Bantock<sup>24</sup> believes that Dewey held

pragmatic motives for education where these motives no longer applied. Bantock feels that Dewey had failed to take full measure of the industrial-bureaucratic state which already existed at the turn of the century and which had led to an essentially meritocratic society. Dewey did, however, make enormous contributions to the growing group of educators who were pressing for child centred education. Nancy Catty's writing would suggest that in 1913 Dewey's democratic influence had yet to be felt in English schools. Her first appointment had been to a school run by an 'enlightened' head teacher. All teaching was from the front to the entire class. Anyone who thought children should learn in any other way was viewed with suspicion. Once the timetable had been signed by the H.M.I. adherence to it, and to the bell were unflinching. The other essential was an absolutely correct register.<sup>84</sup>

Griffiths, writing in 1913, felt that "two rival concepts of education are struggling. The one, objective and materialistic regards education as something external to the pupil, it set out to manufacture the standard man. Education is imbibing facts docilely. The other sees education as the continuous development of the personality, it is a self active process. The school curriculum is not a collection of subjects but a means of helping pupils to realise themselves."<sup>41</sup>

A concept the second may have been to educators, but teachers, according to Nancy Catty, still totally ignored the fact that children progressed differentially.

During the years of the first World War the demand for secondary education roughly doubled from 190,000 in 1914 to 337,000 in 1920 by which time roughly one in ten elementary children aged eleven was transferring to the secondary schools. Lloyd George's desire to raise the school leaving age was successfully fought by industrialists who stood to lose a source of cheap labour<sup>36</sup> (30% of the Lancashire cotton workers were under 18 years of age.)

The 1920's saw the sweeping influence of many educators - Montessori, who believed that in conventional class teaching up to that time "the word education has been almost synonymous with the word punishment". Percy Nunn in 1920 wrote that even the cautious observer would find it hard to remain a sceptic when comparing the old type of bondage with the calm happy Montessorian classes. Yet her methods met fierce opposition in England. The conventional teachers argued that hers was a 'go as you please system' which meant the teacher resigned the authority she ought to exert. The progressives, like Neill, argued against her system because of the lack of freedom, with teachers showing the "unfortunate habit of waiting for guidance from the fountain head". Margaret Macmillan felt that Montessori had forgotten that children have imaginations and Charlotte Mason believed that it was wrong to isolate the 'children's environment' from the educational value of the natural home. Susan Isaacs too had no use for the planned sequence of

experiences. She based her educational beliefs on a use of the child's curiosity. Teaching success depended on the quick wits of the teacher. In Neill's and Isaacs' beliefs in the free development of the child educational theory can be said to have arrived at the point where 'education is made for man, not man for education'.<sup>512</sup>

Whilst the work of Isaacs, Neill, Montessori, Froebel, Hason, Macmillan and many others have had considerable effect on the educational beliefs of this century, without a doubt the name Piaget will be remembered as the Educator of the twentieth century. His work more than any other has emphasised the need to study the child as a developing organism, developing along predictable lines of mental growth. The fact that children develop at differing rates which must be taken into account when planning an educational programme is now a common facet of child development theory in colleges of education courses even if it is still commonly ignored in classroom practice. One problem of the enthusiasm with which Piaget's work has been greeted has been the tendency of some teachers to "teach" his developmental models rather than use them as descriptive or diagnostic tools. It is unfortunately quite a common sight to see children being taught to pour water into different sized beakers.

Ballard in 1925 found that a profound change in the relations between young and old had occurred with 'flogging teachers' becoming a thing of the past. Object lessons too had vanished because the colleges no longer saw teaching as the mere imparting

of information. The pupil should find out whilst the teacher fades into the background. However, a total freedom to find out without the guidance is, he says, too slow. He also noted the claims that teaching was something which depended on the personality of the teacher and stated categorically that this was just not true. Not one teacher ever failed from lack of personality, instead it was always lack of efficiency.<sup>21</sup>

Educational expansion in the late 1920's suffered from the belief held by Chamberlain that Conservative voters would prefer to see money spend on health and housing rather than on education, a view no doubt reinforced by Churchill's unwillingness to spend money on 'half naked children rolling in the dust'.<sup>36</sup> Progress, however, was still going on. In 1927 the Board of Education dropped its tables of gymnastic exercises from the reference book of gymnastic training and in 1930 authorities were encouraged to experiment with new methods intended to bring enjoyment and activity to lessons.<sup>331</sup>

By 1926 only one in every thousand children leaving the elementary schools could expect to go to university but the working class children were slowly getting more grammar school places because the middle class families were moving out of the city centres to the suburbs.<sup>36</sup> By 1928 the pupil teacher had almost vanished with only 92 left in the country.<sup>477</sup> The colleges were being told that there was too much in the curriculum whilst the growing complexity of the education course could be traced to the influence of educational psychology. Freud, Froebel, James and Dewey all helped to emphasise the need for teachers to study the child.<sup>252</sup> Dent, however, felt that the majority of teachers leaving the colleges had become dull, docile, examination passing sheep, who worked hardest

at correcting their pupils' manners.<sup>145</sup> Group work by the 1930's had become easier, at least in the infant schools, with the advent of light moveable furniture. Plowden's findings were anticipated by the discovery that children coming from 'cultured' homes with a variety of books came to school with an interest in reading and a strong desire to learn. Children from homes with few books had greater difficulty.<sup>84</sup> Dent felt that although many teachers in the inter-war years had adopted direct, practical formal, or informal breezy method of teaching there was no getting away from their continued worship of 'facts' learning. He saw many curious things in the 1920's such as enthusiasts believing that 'activity'-learning meant the children should always be on the move and 'discovery' learning meaning that the teacher should refuse to tell a child anything. The nursery schools he felt had become the first genuine educational institution where "school is no longer a place for instruction in traditional skills but a place where children may experience a many sided life and... (gradually) develop attitudes, acquire knowledge and learn skills which will enable them to live happily, purposefully and creatively, both at the time, and in the future."<sup>145</sup>

The underlining is merely to bring emphasis to the growing belief of many educators that school should be of itself a complete and happy social experience.

By 1937 the Board of Education had also become aware of the changing trend towards child centred education. It had also unfortunately entered an era of glib, high sounding, but almost meaningless cliches.

"The characteristics of a good school... (is where children) will show the energy which comes from the natural flow of vitality, knowledge which results from the free play of intelligence, the evident care and thoroughness which arise from a sense of values and the happiness which accompanies the feeling that they are doing things worth doing and doing them well."

Perhaps I should not be surprised that they neglect to say how their aim is to be achieved or measured. Infant teachers should "avoid aiming for results which though superficially attractive, do nothing to represent genuine progress."<sup>52</sup> Once again teachers received no help toward deciding what was superficial and what was genuine progress. Small wonder that educational policy statements are frequently attacked for being slogans<sup>57</sup> rather than workable ideas.

A 1941 review of education suggested that one serious drawback was the numbers of unqualified teachers in the school. Another was that the financial status of the parents rather than the child's ability was still the strongest factor affecting that child's future.<sup>36</sup> By this time, too, it was generally agreed that two years at college was not long enough to prepare student teachers.

Many authorities were becoming worried at the number of students who opted for teaching merely to get the better grants to pay for their university studies.<sup>58</sup>

The second world war seemed to bring together the ideals, demands and evidence which crystallised in the 1944 Education Act. At last secondary education was to be everyone's right, free to the poorest and the richest. However, it soon became obvious that the grammar school was remaining the avenue of access to higher education. The secondary modern became the poor cousin; staffed mainly by non graduates and often unable to offer education beyond the age of fifteen. Whilst examinations could be seen to have reduced the advantages of heredity in the career rat-race, they had also restricted the schools' opportunity to revolutionise society by emphasising competition rather than cooperation.<sup>25</sup> Now education had become a privilege reserved in the public schools for those with high socio-economic and ability claims and in the grammar schools for another group of pupils privileged because of their ability.<sup>171</sup>

Rapidly education was moving from being regarded as a luxury to being regarded as an essential. Halsey, Floud and Anderson<sup>240</sup> saw in 1958 that a plentiful supply of highly educated people was essential to national survival. They pointed out that roughly 4% of the National Budget was being committed to education compared with 1% in 1900. Standards of living had risen some 10% since 1938. They have argued in favour of comprehensive education on the grounds that intelligence is randomly distributed throughout the population and

so 60% of grammar school and university places should go to working class children. Burt argues that this is nonsense because, allowing for the existence of wide error, the lower working classes and upper middle classes as groups have not become that just by chance but by generations of gradual drift towards the correct socio-ability group for their ability level. Bantock too feels that there is something radically wrong with their attempt to provide one single aim for education - a trip to the university - as the correct one for everyone.

During the post-war years education has expanded rapidly, the school leaving age was soon raised to fifteen, and is shortly to rise again to sixteen. Training colleges were renamed Colleges of Education as part of the widening concept of teacher preparation and changed to the desired three year course in 1960 with the dreamed of degree level teaching following only five short years behind. Today they are seen as part of the higher education spectrum with an entry of 38,000 new students each year forming part of the predicted 850,000 in higher education by the early 1970's. Universities have suggested that it would be better for the Colleges of Education to expand and become degree granting liberal arts colleges rather than have the universities themselves face the repeated trauma of another rapid increase in size, whilst Malcolm Skilbeck<sup>644</sup> points to the demonstrated capacity of the colleges to expand and improve over the past ten years as one argument for

graduates to undergo professional preparation (he still uses the word training) in the colleges rather than the university departments as a means of overcoming the pressure of recent governmental legislation whereby, at last, a degree alone will not be sufficient for someone to teach in the state sector of education.

Modern aims for education are still very varied. Equality of opportunity; a means to breaking down social barriers;<sup>240</sup> ability to cooperate is stressed in large industrial urban areas; ability to compete, show individualism and initiative is stressed in small communities; if we accept society as it is an aim is to continue it via education; if we are dissatisfied with society education is seen as a corrective.<sup>63</sup> Peterson<sup>410</sup> believes that increasingly education for work must be replaced by education for social adjustment and leisure, whilst Scheffler believes that teaching should lead to beliefs based on the 'exercise of free rational judgement by the student'.<sup>348</sup> Leiberman<sup>333</sup> is unhappy about the aim of social adjustment as he feels it has never been sanctioned by the public, it over commits the schools and tends to lead to undue emphasis upon the current but superficial needs of children.<sup>333</sup> Peterson<sup>410</sup> is equally unhappy about education being seen as the "development of each individual person's capacity to understand, modify enjoy and judge his continually changing environment", asking "If the acquisition of knowledge isn't the point of the process is 'life' not just

as good an education as school?" He further wonders whether those who believe that life adjustment is the educational aim are not really just keeping children out of the way until they are old enough to work.

Whilst the aims of society and of educational theorists appear to have moved towards the child centred concepts, what of the man on the shop floor - the teacher? For him often status and promotion still depend upon his pupils' examination results - so he sets out to get them. His pupils are taught 'facts' and also how to pour them out in a three hour examination. The grammar school particularly is committed to this concept.<sup>410</sup> There, the teacher has no time for the high ideals of "training (pupils) how to learn, to think to discover, to understand to appreciate, to make use of knowledge and to discover the value of it", he is pressured by the task of getting them through the G.C.E.<sup>234</sup>

Particularly suited to this form of instruction are the graduates with their wealth of specialised knowledge described by Kob as type "B" teachers. Mostly they have come from middle class homes. The type "A" teachers are typically non-graduates, from upper working class homes who consider academic training is subordinate to pedagogic training. Type "A" teachers were frequently active in extra-curricular activities and also frequently admitted to being lazy at college but felt this had not affected their skill as a teacher.<sup>240</sup> They still believe it is their personality which makes for success. Unfortunately for many of these teachers the

end of their college course heralds the end of their education rather than the beginning of a much longer period of study and reflection.<sup>529</sup> Perhaps the current scramble of teachers to enrol for Open University courses and release courses leading to B.Ed. (usually for career reasons), is the best thing to happen to the non-graduate teacher since the colleges first opened. The extra salary and promotional chances the degree will bring can only come at the end of a lengthy period of education.

Whilst the grammar school teacher has G.C.E. as a major aim, until recently examinations were not the secondary modern goal and this led H.V.C. Jeffreys to say 'the most serious weakness of modern education is its lack of clear purpose',<sup>328</sup> which Richmond<sup>445</sup> takes a step further when he says that to take children at five years old and release them from education anywhere between fifteen and twenty-one, claiming we cannot actually measure the effects, is tantamount to admitting we do not know what we are trying to do. But teachers claim they do know what they are trying to do. Wehling and Charters<sup>589</sup> as recently as January 1969 reported that 'learning of subject matter' was still seen as an essential educative task being an end in itself which could best be achieved if social distance was maintained between pupil and teacher. The need for good order and decorum in the classroom stemmed more from the needs of the teacher's own personality than from a basic belief that the elimination of nonsense, noise and destruction coupled with quick punishment for rule breakers, would really improve the learning process. Small wonder that Blishen,<sup>48</sup> after reading through 1000

comments by pupils on the teaching they had received, wrote that their verdict was devastating! They were 'bored', 'irritated' and 'drearied' by being taught at. They wanted to do things and be involved in their own education. In spite of all the talk about the integrated day it was not happening, teachers were often insulting, rude, cruel, impatient, lacking in enthusiasm and got worse as they grew older. He summed up: "My basic criticism of school is that pupils don't like it."

And yet it has often been said that nothing matters in education as much as the quality of the teachers. H.M.I.'s, local inspectors, advisors, head teachers and heads of departments are all responsible for seeing that teaching is effective. Amazingly in this chain of control there is almost total permissiveness,<sup>410</sup> every teacher is considered king of his own classroom. The teachers themselves through the N.U.T., students through the N.A.S. and more recently the National Association of Head Teachers<sup>642</sup> have demanded a review of the College of Education courses of teacher preparation. The N.A.H.T. specifically demanding that the probationary year should be regarded as a full year of training under the control of the headmasters. Forgetting, it seems, that this is precisely what it is supposed to be the situation, if the N.U.T. and A.T.C.D.E. joint publication mean anything. It is on the head teacher's recommendation that the period of probation is deemed satisfactory, perhaps too often this has been decided at the end of a period during which any signs of classroom conflict

have suggested the probationer was gradually gaining control.

What are some of the complaints about post war courses in Colleges of Education? In 1954 the N.A.S.<sup>252</sup> claimed that at least 2000 students with less than minimum entry qualifications entered the colleges. In 1970 the N.A.H.T. declared that entry qualifications are too low. At three Birmingham Colleges in 1959 Hayling<sup>252</sup> found that the most commonly used educational text book was "Hughes and Hughes" written over twenty years earlier, whilst students would only read anything that was specifically and strongly recommended by their tutor. Professor Davies<sup>138</sup> in 1966 talking specifically about P.E. said that the correct title should still be P.T. because too often the specialist teachers failed to consciously apply educational theory to their subject. They were not genuine educationists, educating through P.E. Lewis Leary<sup>323</sup> feels that part of the problem is the still current image of the scholar being an inefficient 'young Mr. Chips', whereas evidence shows that, in fact, almost invariably the best teachers are gifted scholars.

Messer<sup>356</sup> in 1967 suggested that one of the reasons there is so little suicide at Colleges of Education compared with university is the difficulty of failing, it is easy to "get by" with work which is obviously below standard. Part of this is undoubtedly due to the fear colleges have of a Department of Education enquiry into why their particular college failed so many students, part is no doubt due to the individual tutor's lack of desire to be identified with

a decision which would 'finish the student's career' and perhaps too part is due to an acceptance (at least by non-education department tutors) of Koerner's<sup>311</sup> accusation that education course work is often puerile, repetitious, dull and ambiguous, hampered by pseudo-intellectual jargon and thriving on slogans. Perhaps this is why the young teachers are described by Tyrell Burgess<sup>643</sup> as

"Often surprisingly unaware of what is being discovered in education. Parents are often puzzled to find that they (the teachers) can often give very little convincing explanation for what they do, ..."

However, he adds a ray of sunshine when he goes on to write:

"What is so astonishing is that with the great expansion of numbers entering teaching so many of them are so very good."

Brief Summary of Chapter I

If we apply Professor Wilson's<sup>601</sup> descriptions of educational techniques to what has happened during most of the past 2,300 years, then very little can be described as 'teaching'. Instead it appears better described by the Wilson definitions:-

a) Instruction, which is the transmission of information and method. It is dogmatic and the teacher's success is the degree to which the pupil can repeat the master's knowledge.

or

b) Training, which is akin to instruction. At its crudest it is the conditioning of a person to respond to a stimulus, at best the relationship between master craftsman and apprentice. Training does not require the teacher to critically assess the objectives of an exercise.

From the time of Aristotle until the turn of the sixteenth century the aims of education were in the main, to develop loyalty to the state, obedience to superiors (including God), readiness for war and ability to carry out life's allotted work. The last three hundred years have seen major changes in the concepts of man's right to an education; emphasis has moved somewhat from the acquisition of information to ability to handle knowledge in the light of the student's own judgement. Whilst one hundred years ago only one in eight teenagers could read, today we worry about

the one in eight who leave school as poor or non readers. Subject centred education has been partially replaced in the infant and nursery schools by child centred education and in the Colleges of Education the aim (of teacher preparation) has moved from the instilling of 'method' to an attempt to get the student to understand the concepts which underlie method. Throughout the history of English teachers' colleges the need to improve the student's personal education, has been a parallel aim.

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Chapter Two

"Why become a teacher?"

Number of applicants per place

In 1899 there were 12,120 candidates for the "Queen's scholarship" which had to be passed before a student could enter one of the 61 training colleges. 10,128 passed the examination, only 2732 places were available.<sup>477</sup> Today almost every person who applies for a place at a College of Education is virtually certain of one somewhere, provided he or she is a) minimally qualified both academically with five passes at Ordinary Level of the General Certificate of Education or as a special case with less, b) minimally fit physically, and c) willing to accept a place at any college anywhere in the country. To quote Edith Cope<sup>110</sup>, "A --- puzzling feature of research into selection for teaching in the 1950's is that ... entry into teaching by those with minimum qualifications was virtually by the student's own choice."

There is no reason to suppose the situation had altered during the 1960's to judge from Department of Education and Science figures<sup>146</sup> and <sup>147</sup> for just two typical years. In 1966 Colleges of Education took 33,000 new students, only 140 "acceptable"\* students failed to gain a place. In 1967 some 36,000 new students commenced their course of study, 239 were described as "acceptable" but unplaced. No figures exist to show how many of the 140 unplaced applicants of 1966 managed to obtain one in 1967.

Several reports during the last few weeks of 1969 and the first

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\* The D.E.S. did not define their term "acceptable".

few of 1970 point to a massive drop in applicants for places at Colleges of Education for the session commencing in September 1970. A typical example is the report by David Mercer<sup>354</sup> in the Sunday Times, April 5th 1970. He quotes the N.U.T. figures of 16% fewer men applicants and 12% less women applicants than in the corresponding month of 1968. (The Times Educational Supplement of 10.4.70 puts the figures at 14% and 9%.) See below (1). Various reasons for this new trend - there were 1500 fewer applicants for 1969 vacancies than for 1968 vacancies (see below (2)) - have been suggested. The N.U.T. noisily claimed it was due to the low starting salary. Another hypothesis was that young people are showing increased reluctance to commit themselves to a specific career at the beginning of their higher education. Support for the latter can certainly be seen in the nursing profession<sup>544</sup> and <sup>545</sup> where to maintain the flow of entrants it has been necessary to allow entry standards to fall. Today approximately one third of entering nurses have less than two passes at the Ordinary Level of the General Certificate of Education. Even the London teaching hospitals can no longer pick and choose from a long queue of applicants. It has also been argued, however, that unlike law and medicine neither nursing nor teaching carries high status or high financial return and this may be the reason for the falling number of recruits.

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- (1) Eventually 565 less students entered colleges of education in 1970 than entered in 1969.<sup>673</sup>
- (2) and 2,373 less applied for 1970 vacancies than for 1969 vacancies.<sup>673</sup>

By March 1971 the seriousness of the trend towards fewer applicants in 1969 and 1970 was still being reported.<sup>686</sup> However this trend was shown to have abruptly reversed by September 1971. Registrations with Clearing House were 1,708 more than in 1970 and the number of students accepting places increased from 37,384 to 38,751; without any drop in academic standards, according to the A.T.C.D.E.<sup>692</sup> Early figures for the 1972 entry suggest that numbers will again be up. By December 8th 1971 there were 37.8% more applications from graduates for courses of preparation for teaching starting in 1972 than by the same date in 1970, and many Colleges of Education were also reporting heavier than usual applications.<sup>693</sup>

The reason for the low rate of rejection by Colleges of Education is, and has been, the acute shortage of teachers. It was not until the mid 1950's<sup>58</sup> that recruitment began to exceed losses due to retirement; without the raised school leaving age, increased pupil numbers and the earlier child bearing age of women teachers leading to shorter pre family careers, adding to the problem. Only the least qualified are likely to have figured in the 0.04% "acceptable" but unplaced for 1966. The 1970 figure for unplaced "acceptable" applicants was 152.

To talk of selection, at least to talk of it at the national level, would be clearly ludicrous. "A place for everyone" is very nearly a fact. (Even if this were not the case it would still

be of value to look at the young people who choose to enter colleges of education if only to see whether unsatisfactory reasons linked with subsequent unsatisfactory teaching performance exist.)

### Choice made for "poor" reasons

Hori<sup>365</sup> in a survey of literature published prior to 1965 found that a large proportion of people choosing teaching as a career did so for irrelevant or unclear reasons. More generally Valentine and Ritchie<sup>448</sup> as long ago as 1927 found that 80% of girls and 50% of boys gave 'wrong' reasons for choosing a career. Three years later Ritchie<sup>516</sup> (married and called Austin) again found that 80% of the girls in a Midlands secondary school made career choices for 'trivial' or 'unsatisfactory' reasons.

Some 35 years later Currie<sup>96</sup> reported in 1966 that 80% of the potential teachers, in a college sample of 801 students, scored high marks on an index comparing their concept of 'the teacher' with the characteristics which they claimed to possess. Particularly important were 'intellectualism' and 'culture'.

Nisbet and Grant<sup>393</sup> in 1965 followed up 137 students who had entered the Aberdeen Faculty of Arts in 1953. 58 had

subsequently become teachers and were still teaching. Many were seen to have had 'inadequate' knowledge of their chosen career at the time they made their choice and often - I would suspect as a result of their inadequate knowledge - 'inadequate' reasons for their choice. For many the only reason was "I've always wanted to teach." The implications of this finding are considerable when we remember that Jardine<sup>516</sup> in 1948 found that children knew more about teaching as a career than they did about any other profession.

The students in Nisbet's study and most of those quoted by Mori were at least twenty before they made the final decision to enter teaching. In America 85% of teachers by 1960<sup>478</sup> were coming from Liberal Arts Colleges or Universities rather than Teachers' Colleges and so not needing to commit themselves absolutely to any career usually until they entered the third year of their four year degree course. Students entering Colleges of Education typically (I exclude mature students, although growing in numbers, from the majority of my generalisations as they are still a small proportion of those entering Colleges of Education) make application during their seventeenth or eighteenth year. How much more likely is it that they, with presumably less information available, will choose their career for 'unclear' or 'wrong' reasons? Do 38,000 young men and women really enter colleges, irrevocably committed to only one choice of career for largely

irrelevant reasons? If they do, does it matter?

Leiderman, Hilton and Levin<sup>327</sup> had found in 1957 that the fewer the number of career choices open to a student, which were capable of giving him or her satisfaction, then the higher was his ego involvement in that career likely to be. What could be less in terms of career choice than one at the end of a period of higher education? And yet quite clearly this situation does not give the student body satisfaction as the lack of alternative career outlets has for years been a source of complaint amongst non-graduate student teachers.

#### Choice not the result of chance decision

Nisbet<sup>393</sup> had found with the 58 graduates he studied twelve years after they entered Aberdeen University that there was no evidence of a difference in talent as teachers between those who had already decided to teach on entry to university, those who decided in their final year and those who decided after they got their degree results. A piece of evidence which appears to counter the prejudice in the profession against late (with the inference - reluctant) entrants. Contrary evidence comes from America where Stewart<sup>512</sup> in 1958 found that students showing early desire to enter teaching often displayed the higher levels of dedication; Leiderman<sup>327</sup> who found in 1957 that the greater the ego involvement the less likely was it that that person would leave teaching; and

Hilton<sup>263</sup> who in 1960 found a high correlation between being rated 'a good teacher' and the amount of interest in teaching that person had shown whilst a student. One fact which may be important is that Nisbet's 58 graduates in teaching do not include those who since leaving Aberdeen sampled teaching and decided 'not for me'.

Cohen<sup>96</sup> clearly does not accept that people become teachers by chance. He cites Erikson; Super; Beardy and O'Dowd; Galinsky and Fast; Currie; Box; and Fast again as all showing evidence that individuals choose certain occupations in order to provide themselves with an identity. He further claims that in general student teachers knew what was expected of them when they made their career decision.

Hilton<sup>263</sup> would certainly agree with Cohen. In 1960 he gave a questionnaire to students in the graduate school at Harvard University. They had all completed four years of study in Liberal Arts Colleges and were following a one year course of professional training similar to our own P.G.C.E. Hilton found three factors which had been of prime importance when making the decision to teach:

- a) The person's perception of the role of teacher
- b) His perception of the ideal role for himself
- c) His perception of his present role.

In short no role was absolute in its attractiveness. Rather the amount of satisfaction a chosen career could give depended on the person's current role and how close the chosen career came to the role he would eventually like to play.

Further support for Hilton comes from Ginsberg<sup>626</sup> and his colleagues in America, who suggest that as children grow older they become increasingly aware of a) their own potentialities b) their own limitations, and c) the occupational world. They see the choice of a career as the culmination of a series of stages each of which, according to Butler<sup>626</sup> makes complete revisions of career choice less and less likely. Their key point of their arguments is that occupational choice is the outcome of a process which occurs over a long period of time. Liam Hudson's<sup>274</sup> British findings certainly seem to support these arguments. Hudson gave gifted boys of various ages (see chapter on 'Flexibility' for fuller account), tests of convergent and divergent thinking ability. Less than a quarter of those with high 'divergent' scores went into the Science sixth whilst less than a quarter of those with high 'convergent' scores went into the Arts sixth. Clearly their abilities were leading them to make study decisions which, in our society, inevitably led to some restriction of career choice.

#### Society's concept of teacher

For Hilton's findings to have value it is necessary to assume that society has at any one time a fairly common view of the role

of the teacher, whilst bearing in mind that such a paradigm does not have to be accurate in order that it be accepted by society. Indeed as D. R. Thomas<sup>535</sup> has pointed out the very existence of a stereotype seems to reinforce itself by attracting people who match the stereotype. This he further claims has also placed a burden of orthodoxy on teachers and may well be the reason why research evidence shows that people in certain occupations move toward a common occupational personality: Philip Vernon<sup>576</sup> adds further weight to this argument for whilst rejecting the general hypothesis of a 'teacher' personality he agrees that teachers in the eyes of the public are believed to conform to a particular personality type and can see certain justification for this when we consider the older unmarried women who do often portray a common style of speech, dress, gesture and spare time activity. He also believes that the stereotyping is becoming less marked. Perhaps an additional reason for the fall off in applications to Colleges of Education is the lack of a clear concept of the teacher's role, accurate or otherwise, in our society at the moment.

Concepts of self in a particular role depend, at least in part, on the status accorded to that role by society. Teachers are afforded clearly different status in our society according to the type of educational establishment in which they work. Indeed the teaching profession itself seems to go along with this opinion to a large degree. A primary school teacher may have attended the

same college, studied the same main subject and passed the same examinations as his secondary modern counterpart, but he will be assumed to be a lower level teacher by society. Grammar school teachers are seen as superior to secondary modern teachers and university teachers as more superior still.<sup>627</sup> The Spens recommendation of equal pay for equal qualifications, service and responsibility does not seem to have led to the removal of this problem, which can be seen to affect the image of differing levels of teaching and so the attractiveness of the various levels, to different people, as a career. Bamford<sup>22</sup> wrote that apart from working with children teachers have little in common with each other ranging as they do from the G.P. to the specialist. He goes on to point out that the majority are trained in colleges where as recently as 1962 42% of the tutors were themselves non-graduates. The situation where a graduate is regarded as competent to teach without any training, he claims is another factor which makes the image of teaching as a career less acceptable.

Taking this a step further Edward King<sup>628</sup> points out that as people with a proper education can teach without training the inference must be that training is for inferior people.

### Career advice

The differing esteem with which graduates and non-graduates are viewed and, closely linked, the esteem accorded to the various

types of educational establishment has led to varied advice from, in the main, grammar school teachers. Many college of education students complain that their teachers see the "training college" as 'the best I could achieve' or increasingly as "an insurance policy if no place was available at university". Certainly there is considerable evidence to support these frequent subjective statements. Voness<sup>353</sup> found that girls chose training colleges because they were less optimistic about either their chances of getting a university place or their ability to manage a degree course, but they were also under less parental pressure than boys to try for a university place, as Stott and Chown<sup>353</sup> showed, partly because they saw less need for a career for their daughters and partly because careers like teaching were "alright for girls".

In her own researches Meldon<sup>353</sup> differentiated between grammar school teaching which she saw as a career in the group "Scientific/Academic/Professional" and non-graduate teaching which she classed as "working with people".

In America in 1951 Ken Cleeton<sup>161</sup> found that 91% of high school careers counsellors advised against Teachers' Colleges and in favour of Liberal Arts Colleges when approached by the more able students who claimed they wanted to be teachers.

Many of Clarke's<sup>90</sup> 96 science undergraduates who wanted to qualify as teachers mentioned that their own school teachers had specifically advised against teaching as a career. Tudhope<sup>58</sup>

reported that 56% of the men and 52% of the women in training in his sample said they had been advised to go to university rather than to training college. Only 13% of the women and 4% of the men had been advised to go to college in preference to university.

### Social source of teachers

Several studies have supported Hilton's suggestion that a person's concept of a role will depend on his current role. Ricky and Roberts<sup>282</sup> found that the degree of prestige accorded to teachers correlated negatively with the rater's own social class and status, a finding supported by Rettig and Pasamanick.<sup>436</sup> They found that the lowest status accorded to teachers was from people recognised as 'professionals'.

Stewart<sup>512</sup> studied the "occupational" concepts of 243 eleven year old fifth grade boys at six California schools. Their parents were employed in a wide range of occupations. He found that they had already developed definite ideas of how social class symbols were related to occupation. The boys' perceptions were remarkably similar whether they came from upper or lower class families.

Stinnett<sup>515</sup> has argued that the low economic and social status awarded to the American teacher throughout history and still affecting him today is a result of the custom in the past for the rich to buy teachers as well as slaves. Birkenshaw<sup>42</sup> argues similarly for the British situation where she feels status is

affected by the lowly level of the governess in times past. However she also wrote in the early 1930's that "It was obvious that a substantial portion of the community thinks disparagingly of the teaching profession ... which may be in part due to the world accepting the profession's own valuation".

Although the status of teachers is low in most countries Martin Mayer<sup>515</sup> reminds us that 'most teachers as individuals have moved up the social scale - and their children ... will move further". He goes on to point out, more exactly than most writers, that the majority of teachers come from the lower middle streams of society with fathers who are "farmers, skilled workers and clerks rather than ditch diggers or doctors".

That this might not be a new situation is illustrated by the story of Miss Angela Coult<sup>554</sup> who in 1860, (when 34 colleges were training 2388 students) was surprised to find how many student teachers came from the working classes. She tried to improve the situation by recruiting middle class girls and persuading them to enter the colleges but failed because, unlike the working class applicants, their education was too poor for them to pass the Queen's Scholarship examination, an essential prerequisite for a college place. Perhaps this is one reason why the Newcastle Commission in 1861 noted a certain amount of hostility from the middle classes (especially the lower middle class) towards "popular" education and a belief that teachers were over educated.

That upper working class families regard teaching as a step forward for their sons is seen by Langeveld<sup>282</sup> as the result of it being the only profession about which they have considerable knowledge. Certainly an enormous amount of evidence both American and British shows not only that this source of supply is the most common one but also that many women in teaching have come from a higher social level than the men, although by no means all of the researches have suggested this latter point. Keilly<sup>50</sup> found student teachers generally were more likely to come from non-professional homes than were students on liberal-arts courses. Viet<sup>569</sup> found a difference between boys and girls results. He compared high school pupils in the twelfth grade in two groups - those who chose teaching and those who did not. There was no difference in social class background for potential girl teachers and girls choosing other careers. Boys, however, who chose teaching as a career tended to come from slightly lower social levels than those who did not.

Greene and Scott<sup>228</sup> investigated 482 prospective women teachers at the University of Georgia. They found that older students and married students tended to be attracted by "classroom atmosphere" but once again it was a social step up for the working class girls who saw it as "a way of escaping the harsh realities of life".

In England Mary Birkinshaw<sup>42</sup> found that of the 3370 members of the Assistant Mistresses Association to whom she wrote in the

early 1930's (roughly one third replied), 26.9% claimed to have chosen teaching at least partly because it offered security. Significantly they fell into the three bottom groups on her five point overall scale, namely

- c) not quite satisfied with teaching as a career but had no alternative
- d) would prefer another career
- e) found teaching to be a wholly unsuitable career.

Champ<sup>85</sup> by 1948 found that 54 sixth form girls, 159 training college students, 35 university training department students, 47 emergency training college students, 103 grammar school teachers, 44 primary school teachers and 24 former teachers said that the security of an assured income and pension were viewed more or less neutrally as career incentives. Robinson,<sup>448</sup> however, as recently as 1969 found that 39% of the 365 students at his college of education mentioned security as one of the factors that had affected their decision. Although massive unemployment has been absent for many years now in Britain Robinson's finding suggests that fear of unemployment is still as strong a motivating force to today's working class parents as it was to the parents of Mary Birkinshaw's sample. Dent<sup>145</sup> writing at much the same time as Champ mentioned that the largest category of entrants to teaching were working-class children whose parents saw teaching as a heaven sent escape from manual labour, low wages, squalid living conditions and dread

of unemployment.

Today's teenagers experience poverty, squalor and low wages on a much smaller scale than existed 30 or more years ago. The average wage for a man in March 1970 was just over £24 per week. The N.U.T.<sup>629</sup> made much ground in their 1970 battle for higher salaries with their advertisement (and, of course, 'tough tactics') "Wanted young man or woman to teach between 30 and 200 children of varying ages ... starting salary £13 a week net." It may well be that in the present social conditions, the financial expectations of many young men suffered a severe reality-shock when they read this and this might account for a proportion of the 16% drop in male applicants for September 1970 places. (This drop, at Easter 1970 was compared with Easter 1969.)

Looking more directly at social class as a factor in choosing teaching as a career Evans<sup>180</sup> arrived at a correlation of  $-.13$  between the socio economic class of 211 post school certificate grammar school boys and girls and their interest in teaching as a career. As such it just fails to reach the required level of  $-.135$  for significance at the 0.05 level.

Kwan Yan-Oi<sup>401</sup> working from London University found that girls from grammar, technical or modern secondary schools showed a significant trend to choose a career of higher status than their father's, whilst girls from public schools showed a trend to choose

careers of lower status than their fathers. It is likely, however, that the two groups of fathers differed significantly with group I fathers absent from the state school sample and group V fathers absent from the public school sample. The public school fathers could be expected to lie almost exclusively in groups I and II of the Registrar General's listings. For girls starting in groups I and V it is impossible to obtain a more extreme ranking than father and so Kwan Yan-Oi's findings could well be explained as the result of regression to the mean.

If we look, briefly, at researches in the 1960's the pattern of teaching providing a valuable step out of the working classes seems still to exist. Shipman<sup>482</sup> in his study of students at Worcester College of Education between 1961 and 1965 found 45% of the male students and 35% of the female students came from homes where the father was employed in a 'manual' occupation. Cohen's<sup>96</sup> 59 potential teachers at Bradford University in 1966-68 are described as "more likely to have come from working-class homes, the social classes IIIb, IV and V being significantly over represented". Finally Professor William Taylor in his inaugural address at the University of Bristol pointed out that today's colleges of education provide an avenue for upward social mobility. Only one out of every twelve male students has at least one parent with a teacher's certificate or a degree. His finding and Perrone's<sup>634</sup> in America - that students in American colleges

of education in 1964-65, going on from high school to two year courses of higher education, were socioeconomically between those who left school by or before eighteen on the one hand and those who went on to study at four year colleges and universities - would seem to provide present day support for Martin Meyer's earlier findings, both American and British.

Overt reasons for career choice

Many researches have looked into the overt, or expressed reasons for choosing a career: Coxon<sup>118</sup> looking at the type of person entering the Anglican Church as an ordinand found that many chose it because, they were "people oriented". This desire to work with or for people is the most common reason given by student teachers or remembered by serving teachers as having been instrumental in helping them come to a career choice decision. Roughly one third of the 195 students returning a questionnaire to Haubrich<sup>250</sup> at the University of Utah College of Education in 1957 gave it as a reason. Jahoda<sup>516</sup> in Britain in 1952 obtained a slightly different variation, probably because of the way she worded her questionnaire. Meeting friendly people was one of the most important reasons stated by girls when they were asked why they had chosen teaching.

21.8% of Mary Birkinshaw's<sup>42</sup> sample claimed they had entered

teaching because they liked children. They were also very heavily represented in her category 'A', teachers claiming to be very satisfied with their choice of career.

Clarke's<sup>90</sup> finding that 115 girls in the sixth form of a grammar school gave as an overriding reason for choosing teaching as their future career 'Desire to work with and for others' was given considerable support by her parallel study of science undergraduates applying for places on a P.G.C.E. course when 95 out of the 96 similarly claimed a 'desire to work with and for others' had affected their decision.

Cohen<sup>96</sup> at Bradford University in 1966 found that 92 potential teacher freshmen were considerably more 'people oriented'—as measured by the Rosenberg Scale of Occupational Values than were the 710 'non-teacher' freshmen.

Evans<sup>181</sup> in 1965 used the Minnesota Teacher Attitude Inventory on samples of teachers, student teachers, student priests and student engineers and concluded, differently from Cohen, that the student teachers could not be distinguished from the other groups at the beginning of their course of study. However with a more representative sample of society - only 18 potential engineers were not in a clearly people oriented career - she might have drawn a different conclusion from the one she actually made, - that the young student teachers were a representative sample of all young people for this attribute.

Several researchers have hypothesised that the younger the age of children that a person desired to teach the more child oriented they would be. Hope's work in this area where he in fact obtained a significant difference between elementary and secondary teachers beyond the .005 level led Brown<sup>62</sup> and others to construct the Brown-Self-Report-Inventory and then use it to compare the child oriented responses of 96 prospective elementary teachers with the scores of 78 prospective secondary teachers. His hypothesis that prospective elementary teachers would be more child oriented than prospective secondary teachers was supported beyond the 0.00001 level of significance. Fox<sup>202</sup> at Illinois University found not only were 'desire to work with children' and 'desire to impart knowledge' the most frequently given reasons, but that the 75 potential elementary teachers listed the first of these significantly more often than the 98 potential secondary teachers.

Sister Zacharewican<sup>624</sup> with a sample of 263 student teachers got a similar result using the Minnesota Teacher Attitude Inventory but there was no difference for friendliness, tolerance, cheerfulness and emotional stability between the two groups.

Gerhard Lang<sup>320</sup> pours cold water on the 'more child oriented' syndrome shown by potential teachers. Inevitably, he points out, questions of the sort "Why do you want to teach?" elicit replies which are regarded as socially desirable. Haubrich<sup>250</sup> similarly asked "Who would be willing to admit he wants the easy life?" after finding his sample of student teachers apparently had not been

attracted at all by short hour and long holidays. Groff<sup>231</sup> concluded after studying a 10% sample from each of the ten previous years at one college of education that when it came to rating themselves and completing questionnaires student elementary teachers either:

- a) were not frank in their replies
  - b) didn't know themselves
- or
- c) failed, on teaching practice, to exhibit the characteristics they claimed to possess.

Covert reasons for choice of teaching as a career

Coxon<sup>118</sup> says that Rosenberg believes people claiming to be "people oriented" have in fact got a basically similar value structure to those who are "discipline oriented". Wall<sup>581</sup> on comparing Educational Advisors, Administrators and teachers found that the teachers were significantly more authoritarian than the other two groups. Dutton<sup>167</sup> found that 91 women studying to be teachers in elementary schools regarded youth more negatively than average, if they were anxious, as measured by the Pittsburg version of Taylor's Manifest Anxiety Scale.

Stagner<sup>50</sup> used the Bernreuter Personality Inventory and concluded that women in education tended to be more 'dominant' than men in education, women in physical education or students in science, letters, nursing and home economics faculties.

Garrison and Scott<sup>630</sup> had found that students with higher than average academic averages had less need for aggression, a similar finding to that of Sheldon, Coale and Copple<sup>480</sup> who had found that it was teachers with low I.Q.'s as measured by W.A.I.S. who showed the most hostility on the M.M.P.I.(K) Scale.

Garrison and Scott had also found that the older students at Georgia University College of Education showed considerable need for aggressive outlets as measured by the Edwards Personal Preference Schedule and that students planning to teach for only a short time showed the least need for dominance.

A converse finding to the above was that of Merwin and Da Vista<sup>355</sup> at Syracuse University in 1957. They gave a variety of need strength tests to 218 freshmen, 67 of whom claimed they wanted to teach. On this occasion the "non-teachers" showed significantly more ( $p < 0.01$ ) need for dominance than the "teachers".

In Britain Stocks<sup>516</sup> got a neutral result with the Edwards Personal Preference Schedule. It was administered to 475 fifth and sixth form girls in the Midlands. Those interested in teaching as a career did not differ from those who were not.

Perhaps these last two results can be explained by the work of Le Fevre<sup>96</sup> and Greene and Scott.<sup>229</sup> Le Fevre in 1964 having given Stern's Activities Index to 701 student teachers concluded that They showed much more need to deny feelings of hostility and aggression than did the normative college population. Similarly

Greene and Scott had found that 482 student teachers at Georgia University found difficulty in expressing hostility especially if they scored high on "desire to serve the community". This is the more interesting in the light of Smith's<sup>325</sup> 1965 finding that non-teachers believe teachers should be more aggressive.

"Aggression" is in our society a value loaded word. To be aggressive is disapproved of. But Anthony Storr<sup>631</sup> in his book "Human Aggression" makes a strong case in favour of the aggressive drive. Storr sees it as an essential part of human nature which only becomes dangerous if its expression is blocked. He has little sympathy with A. S. Neill's hope that education will eventually minimise aggression. Smolicz<sup>632</sup> believes that Storr over values aggression but appears to forget when pointing to the savagery of history that Storr's case concerns aggressive drives which are not blocked. Competition, leadership, dominance could well be healthy, sublimated aggressive drives which in Butler's<sup>626</sup> terms cause a substantial commitment to the general occupational area of being in charge of people. From this it would seem logical that a considerable proportion of people whose aggression is not in some way blocked would gravitate towards teaching. Partly because of social learning and partly because of social pressure this particular drive is expressed in the socially approved statement "I want to work with children". The same social learnings allow the person hoping to teach older children to admit that their

interest primarily is in 'helping others to learn'. This still includes the desired 'people orientation' but makes it that much more allowable for the person to also claim that interest in a particular subject was another prime reason for entering teaching, as Robinson's<sup>448</sup> 28.2% showed in 1969.

Reasons for avoiding teaching as a career

Many other reasons for choosing teaching as a career are frequently found: happiness as a school child by Evans<sup>180</sup> and Clarke<sup>90</sup> in Britain, ability to return to it after own children were at school, Moran<sup>364</sup>, or its convenience to married women, Greene and Scott<sup>229</sup>. But only a few have looked directly at reasons for rejecting teaching as a career although several studies have covered this area incidentally to another major investigation.

Champ<sup>85</sup> found that students (and young teachers!) believed teachers become narrow, authoritarian, frumpish and generally peculiar. Students believed that teachers were worried by fears of lack of discipline.

Clarke<sup>90</sup> found that most of the 877 sixth form boys she questionnaired rejected teaching as a career because the salary was too low. Other reasons often mentioned by the 1511 boys and girls were monotony, fear of lack of control, and dissuasion by both parents and teachers.

Ricky and Fox<sup>441</sup> in 1951 found that low salaries, poor

promotion prospects, too much responsibility and other careers more attractive were the main reasons that were given. Ten years later Fox<sup>202</sup> found that good salaries had become a reason for entering teaching whilst, for the first time, teaching was seen as a good stepping stone to other careers.

In 1962 Marvin Powell<sup>424</sup> asked 929 aged 14 to 19 year old Illinois children from varied socio economic backgrounds, two questions:

A) What occupation would you choose, assuming complete freedom of choice, money and ability?

None of the boys mentioned teaching! 15% of the girls did, however, list it as their desired career.

B) What occupation do you expect to enter?

Again none of the boys mentioned teaching, the percentage of girls mentioning teaching rose to 16.9.

Sorenson<sup>41</sup> investigated the career intentions of 67 ninth grade boys and 67 ninth grade girls. Those careers listed most frequently as desirable were also rejected most frequently by other children in the same group. Teaching was the most frequently rejected career choice. 35 children rejected it on grounds of monotony, poor promotion prospects, not enough patience, poor salary and, more frivolously 'too many teachers in the world already'. Doctor was the second most rejected career (N = 21)

whilst garbage collector only rated fourth. It may well be that this piece of research suffers a lack of validity due to many of the careers offering such remote life styles that they were not rejected vehemently because they were not considered seriously.

#### Poor academic calibre of student teachers

It is often suggested that students enter colleges of education, or more generally teaching, because they lack the calibre needed for a successful career as a university student or in another profession.

Herman and Holt<sup>50</sup> had studied 16,350 high school seniors in Wisconsin in 1947, the 18% who intended to enter teaching were found to be 'wanting for academic ability'. Learned<sup>50</sup> in Pennsylvania concluded that the educational background of student teachers was inferior to that of other students. Wellborn<sup>50</sup> examined the A.C.E. Psychology Examination results for freshmen entering a total of 243 colleges over a ten year period. The number of students in each year ranged from 3500 to 7200. Intending teachers scored slightly lower than liberal arts freshmen. Burnett and McMin<sup>69</sup> examined data collected at Ohio State University. They compared graduating seniors in the School of Education with all other graduating seniors. As entering freshmen in 1962 the "teachers" had been significantly inferior for

I.Q. (p .000001) and mathematics (p .000001). They were superior on tested English (p .04). Probably one of the largest samples ever studied was by Chauncey<sup>362</sup> in 1952. Roughly half a million young men had taken the "Selective Service College Qualification Test", usually as a means of avoiding immediate call up for National Service. A score of 70 was the minimum acceptable for exemption in order to go to university or college. It was exceeded by the following percentages of students opting for different major areas of study:

Education	28%
Business and Commerce	38%
Agriculture	40%
Humanities	52%
Social Sciences	56%
Biology	60%
Mathematics/Physics	66%
Engineering	68%

In Britain Evans<sup>424</sup> in 1946 found a negative correlation between the number of Credits gained in School Certificate and interest in teaching as a career. The same group of 211 grammar school sixth formers from eight different grammar schools showed also a similar but non significant correlation between Otis I.Q. score and interest in teaching.

Shipman's<sup>482</sup> findings at Worcester College of Education that

men students with high I.Q.s had come from working class homes but they had not done as well as the lower I.Q. group of middle class men at the Advanced Level of the General Certificate of Education. Middle class students of comparably high I.Q. had gone to university. However he also found that the proportion of students entering Worcester College who had also applied to university rose from 13% in 1962 to 26% in 1965. This would seem to support Krippner's<sup>634</sup> American finding in 1963 that the vocational preference among junior high school pupils were more closely associated with demonstrated achievement than with potential ability.

At the University of Florida when the entry qualification to the School of Education was raised the number of well qualified applicants rapidly rose very soon afterwards. Brent's<sup>58</sup> work suggests that lack of intellectual challenge in colleges of education may be one reason for low quality. He found that in final examinations for various professions in 1954 the failure rate was:-

Chartered Accountants Finals	69%
Library Association Finals	58%
Law Society Finals	46%
Chartered Institute of Secretaries Finals	65%
Teaching Finals	2% - 3%

Koerner<sup>311</sup> in 1964 concluded, after visiting over 100 universities, liberal arts colleges, and teachers colleges that probably the reason for the inferior quality of teachers and the biggest limitation on improvement was the inferior intellectual quality of the education faculty who often showed a strong strain of anti-intellectualism. He conceded, however, that the calibre of students was improving. Indeed one of the main reasons for American teachers' salaries increasing so rapidly, according to Shaplin and Olds<sup>478</sup>, is the fact that they are better qualified, most now having at least the bachelor's degree.

Although isolated cases such as Nisbet's<sup>393</sup> Aberdeen research found teachers no different to other graduates, and Mitzel and Dubnick's<sup>362</sup> women freshmen teachers were superior to other liberal arts students when they left high school, most researches point to teachers being academically inferior to other students. There is, happily, considerable evidence in Britain to support Koerner's American finding that academic standards on entry are improving.

#### Academic standards are continually rising

Since the work of Bell and Lancaster started to lose its grip on the British education scene, with Bell's assumption that anyone who could read the correct answer could teach, (Smith and Harrison<sup>491</sup> in 1939 argued that prepared lessons in teachers' journals are an unfortunate modern equivalent) standards have

steadily improved. The older entrants to the early normal colleges were soon pushed out by the younger, better taught pupil teachers who also proved quicker to learn once they were at college<sup>531</sup>. Entry standards continued to rise and the certificated acting teachers, instituted in 1847, began to dwindle in numbers after the 1909 school code limited headships to teachers who had been trained at a training college. The last examination for the acting teacher's certificate was held in 1927<sup>477</sup>. Professor William Taylor<sup>531</sup> in his book 'Society and the Education of Teachers' mentions that by the mid 1920's the entry qualifications of most student teachers was as good as the leaving qualifications of those leaving the training colleges shortly before the first World War. By 1944 almost every college entrant had achieved at least the School Certificate. 1967 saw only 9% of men and 7% of women entrants with the minimum of 5 passes at the ordinary level of General Certificate of Education. 63% had at least one advanced level pass and 38% of the men and 37% of women had the theoretical university entrance qualification of two 'A' levels. The students entering colleges in 1969 were better again<sup>152</sup> - 64.7% of women and 65.7% of men had at least one 'A' level whilst 38% of all students had two 'A' levels. It is, however, true that whilst the academic qualifications of entering student teachers has risen so has the general educational level of society. In 1850 teachers were amongst the minority who could read. Today as Stinnett<sup>515</sup>

points out the entry quality and amount of formal higher education of teachers is still below that required of most other professional groups. Perhaps the renewed interest shown by the N.U.T. and A.T.C.D.E. in colleges of education becoming a full part of the university world and the all graduate profession desired by the year 2000, if it happens, will help improve the teacher's status in society. Taylor's<sup>531</sup> evidence that the qualifications of college teaching staffs continue to improve will help to ease some minds on this issue. He has shown that by 1964 the proportion of college of education staffs with an honours degree was close to that existing in universities while 20% of the men and 12% of the women staff had higher degrees, this in spite of the rapid increase in the size of college staffs since 1954.<sup>479</sup> The governmental Select Committee on Education and Science<sup>633</sup> had no doubt in July 1969 that the three year trained teachers were markedly superior to the two year trained teachers, the academic gulf between graduate and non-graduate having narrowed enormously. Another possible source of improved status can be seen in the April 1970 decision by the National Union of Teachers to join the T.U.C. If an improved financial standing results from improved bargaining techniques this may lead to an increased number of applicants. If so career status will once again be shown to be closely linked with income and so provide extra evidence to support the Social Survey<sup>111</sup> finding that today's undergraduates who enter teaching are more interested in financial return than 'nominal' status.

## Brief Summary of Chapter Two

Because virtually every applicant to colleges of education gets a place it is illogical to write in terms of "selection" at the national level. Coupled with this the low failure rate means that most of those wishing to teach finish up qualified to do so.

It has been suggested that as many as 80% of young people choose their careers for illogical reasons. The evidence, however, suggests that whilst verbalised reasons for choosing a career are often poor, career choice is in fact the result of gradual shaping over many years. Concepts of own current role and that of the teacher affect choice. In many western countries the status of the teacher is low compared with other professions and so it is not surprising to find that the largest single source of young teachers is the upper working classes, where teaching is seen as "social promotion".

The commonest stated reason for wishing to teach is 'desire to work with children', in part probably due to its social acceptability as a statement. Many teachers and student teachers show a need to be dominant but also a need to hide this manifestation of their aggressive drive. Anthony Storr suggests that we should not be worried about aggression which is dissipated in such acceptable channels as leadership of children. Other common overt reasons

for choosing teaching are security, liking of a particular subject, advantages to married women and remembered happiness as a school child.

Fear of lack of discipline, poor salaries, low social status, too much responsibility and parental dissuasion were frequent reasons for not considering teaching as a career.

Young men and women entrants to teaching have improved academically at a steady rate ever since the first college opened but as a group they still lag behind today's university students in terms of the quality of their G.C.E. passes, although there now appears to be considerable overlap.

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## Chapter Three

### The Selection Process

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Although (as shown in the previous chapter) virtually every qualified applicant gets a place in some college, there is nevertheless an energetic and time consuming selection process in virtually every college of education in England and Wales. In Scotland any applicant who is academically qualified and passes a medical examination is regarded as entitled to a place at college if he or she wants one. Not so in England and Wales. As long ago as 1948 the Association of Teachers in Colleges and Departments of Education<sup>339</sup> circulated its members and found four main factors affected the offer of an interview:

- a) Sixth form study
- b) Head teachers confidential report
- c) Qualifications other than academic - sport, music, school office, etc.
- d) Examination qualifications

Halliwell's<sup>239</sup> research reported in 1965 would suggest that the pattern has not changed much today. He found that

- a) Satisfactory sixth form experience
- b) At least one pass at "A" level of the G.C.E.
- c) Head teachers prediction of teaching potential and scholastic ability
- d) Student's letter of application

and

e) referees' letters

were considered before a candidate was offered an interview.

In 1966 it was estimated by a senior civil servant at the D.E.S. that the cost, in staff wages alone, of the interviews was approximately three quarters of a million pounds. The result of this screening, as I mentioned in the last chapter, was the exclusion of only 140 qualified candidates.

Why do colleges go to the enormous expense both in time and money of operating a selection process when nationally all applicants get in? In America for the first time in many years selection would seem to make sense, if we accept Vernon and Parry's<sup>411</sup> contention that any selection process is of value provided the supply of candidates exceeds the demand. There, at the beginning of the 1969/70 academic year, the National Educational Association estimated that 16,000 elementary and 22,000 secondary teachers in excess of national needs left the colleges and universities. In England and Wales, apart from a few localised areas the shortage of teachers would seem to be very nearly at an end.

#### Comparison between Colleges

To get back to the question 'Why do colleges operate a selection process?' Many colleges receive a considerably larger number of applicants than they have places, and so are in a position to pick and choose. Martin Simons<sup>486</sup> found that many students

accepted by a college other than their first choice college were not academically inferior to those accepted by their first choice college. However although this was true for individuals there were some startling differences when the whole national intake of 1962 was examined college by college. Women, but not men, students were significantly (0.05) better qualified academically on entry to southern colleges than to Yorkshire or County Durham colleges. Welsh College of Education students were markedly deficient in General Certificate of Education passes at the Advanced level. Simons postulates that this may be due to the better qualified Welsh students applying to English colleges. An alternative explanation might be the better ratio of university places available in Wales. Men students in Church of England colleges were slightly below the national average academically, whilst Roman Catholic colleges had students who on average were considerably below average. The academic entry qualifications of the students at Methodist, Free Church and Undenominational colleges were all above the national average.

Of the sixty eight colleges which took men students, seven took the better than average, one having over 70% of its male intake possessing two passes at Advanced level of the G.C.E. Fifteen were below the national average with two of the colleges having 25.5% of their male students possessing only the minimum of five passes at the ordinary level of the General Certificate of Education.

One hundred and twenty eight colleges took women students. Of these thirty-three had a student body which was on average better academically qualified than the national average, whilst twenty-seven took students below the national average. Four of the 'superior' colleges had over 75% of their women students possessing two or more passes at the Advanced level of G.C.E. Four of the 'weak' colleges had 18.5% of their women students in possession of the minimum five passes at Ordinary level of the General Certificate of Education. Some colleges had 94% of their students in possession of at least one 'A' level, others had as few as 37%.

Of the six colleges studied in depth by Simons one was completely filled by 'first choice' candidates, whilst less than 50% of the student body in another college had made it their first choice. One interesting discovery he made was that average students were less likely to apply to colleges with a reputation for taking highly qualified students, and so improved their chance of a first time acceptance. Another factor affecting the decision to make a college first choice was the pressure from some head teachers to apply to a particular college, even going to the lengths of refusing to give a testimonial if a student made the "wrong" college her first choice.

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In the head teacher's reference, and often other references as well, he or she is frequently asked to predict how good a teacher

the candidate will be. In the words of S. M. Corey<sup>112</sup> "even more ridiculous (than asking them) is the fact that they do it". He concluded that the referee as well as the candidate should be called for interview in order to determine the closeness of acquaintance and so the subsequent value of reference statements. More rationally the head teacher is also often asked to predict future G.C.E. results. Burroughs<sup>245</sup> found that where the head teacher provided an estimate of the applicant's suitability for teaching it tended to be based on the candidate's social and athletic activities rather than academic or known teaching ability. Harvey<sup>245</sup> found that the head teacher's prediction of future teaching ability for ninety-six women entering college in 1961 correlated non significantly ( $r = 0.18$ ) with teaching practice marks, whilst for seventy-two men entering college the same year the correlation was even lower at  $+0.09$ .

#### What is the criterion for selection?

In considering academic attainment, evidence of sixth form study, activities other than academic, etc., what is it that the colleges are looking for? What are they trying to predict?

A. S. Phillips<sup>411</sup> brings us face to face with the colleges' problem when he asks "What are the criteria of success as a teacher?" Good classroom technique, extra curricular activities, good relations with pupils, good relations with colleagues, good relations with

parents, good discipline, sympathetic personality, or the examination success of his pupils? Virtually none of these can be measured directly in the young applicant to college as usually he or she has not tried their hand at teaching. As a result a considerable array of predictive techniques and instruments has been developed, each hopefully having a relationship with 'teaching technique', desirable 'teacher personality' or 'academic performance' at college. Hence the common practice of perusal of qualifications and references prior to inviting those who pass this first filter to attend for an interview.

#### The interview

In the 1950's when the college intake was much smaller it was common practice for principals, perhaps aided by one or two senior colleagues, to interview all of the candidates. Today the volume of administration and the sheer quantity of applicants has meant that many colleges have block interviewing days in which almost all members of staff take part. Typically, candidates see one tutor, two separate tutors, or a panel of two tutors together. Often the last two techniques involve one Education tutor and one Main Subject tutor.

Becoming a College of Education tutor is often treated as being sufficient qualification to enable that person to select wisely those applicants most suited to the courses at that particular

college. There is a singular lack of evidence that any college trains its academic staff in a standard interviewing technique, although many have a form which requires each section filling in and others place new staff with experienced staff for their initiation into the process. Perhaps this is why Cortis<sup>116</sup> complains that selection in England and Wales is haphazard, with the evidence suggesting "that colleges may be less clear than they might be about what 'suitability' and 'teaching' really imply. Corey<sup>112</sup> feels that provided an applicant's academic standing is good enough and his friends write sufficiently good references, then the interview is the only real hurdle. There the applicant will very likely talk for 15 to 20 minutes to someone with a great faith in interviewing, a person who prides himself on his ability to quickly recognise the symptoms of "character" - the firm handshake, strong jaw, steady gaze and kind expression. Certainly Corey sees the value of the interview limited to an opportunity to check the candidates record. The reliance on misleading new perceptual information may well be the reason for Ebel's<sup>169</sup> conclusion in America. (After investigating 785 institutions engaged in teacher preparation and finding that five out of six of the staffs believed in the selection process.) He says that most people recognise two broad facets to teaching, the "intellectual" and the "human" and yet over and over again it is in the human aspects that teachers do their failing. Perhaps the

selection tool of the interview tends to pick those with a facade of 'desirable character' which by its very nature is more obvious than the true nature it is being used to hide.

The many misleading cues available in the interviewing situation are a major reason for its low reputation amongst psychologists. Fleming, Vernon and Parry<sup>411</sup> found it to be both unreliable and of poor validity. Lawton<sup>411</sup> showed that the interview is unreliable unless it followed a period of long acquaintance (when it is obviously not the only source of person to person data). Wood and Weinstock<sup>26</sup> concluded (after finding great disagreement between various panels interviewing the same person) that the interview is almost useless. It might appear to "be a convenient administrative device", they wrote, "but has nothing else to commend it". Martin<sup>26</sup> in 1944 certainly supported their statement in as far as selection for teaching is concerned. Shannon<sup>26</sup> took the argument a stage further when he persuaded ten educational experts to inspect photographs and then interview a group of newly arrived freshmen. Neither method enabled the best and worst teachers on practice teaching to be identified.

Baranyay<sup>26</sup> found for 127 housecraft students and 71 general training college students that the relationship between interview data and proficiency on teaching practice supported Vernon's contention that interviews are both unreliable and invalid.

N. D. Walters<sup>584</sup> in 1957 reported the entering data for 55 women students at college from 1950 to 1952, and for 54 women

students at college from 1951 to 1953. He compared their interview marks with teaching practice and unlike earlier workers got the following significant results:

1950-1952:  $r = +.32$  (sig. beyond the .05 level)

1951-1953:  $r = +.35$  (sig. beyond the .01 level).

Halliwell<sup>239</sup> found the very high figure for Kendall's coefficient of concordance of 0.91 when he examined the results of interviews for ten mature students. Each was interviewed twice by four tutors shortly after completing their first teaching practice. The figure of .91 was a measure of the amount of agreement between the judges and according to Halliwell suggests a high degree of reliability. However as a figure it is almost certainly spuriously high as half the readings are for each examiner comparing his current decision with his own earlier decision. It is also a matter of conjecture as to how much halo affected the mark given by the various tutors when we remember that both students and tutors lived together, at least during the day time, and that extreme students for any trait, good or bad, get discussed freely in most staff rooms.

More generally Halliwell found that the college interview best predicted success in Educational course work,  $r = +.295$  (sig. beyond the .01 level), Final Educational Theory Examination

mark,  $r = +.283$  (sig. beyond the .01 level) and teaching practice marks,  $r = +.262$  (sig. beyond the .01 level), for slightly less than 100 students. Halliwell also found that the women applicants got better marks at interview than the men applicants and concluded that this was due to their interview dress being more conventional than the men's. With another sample at a later date he once again got a significant correlation of .298 between interview and subsequent teaching practice marks. As a result he decided that the interview was the best single guide to classroom potential.

Bowden<sup>55</sup> shortly after the Second World War looked at the various predictors of teaching ability available for 100 Northern Irish student teachers. Each student had had two interviews, one by a college representative and one by a grant awarding representative of the Ministry of Education. Although he gives no figure for the total 100 students his correlations for men and women were as follows:-

- 1) Correlation between teaching practice mark  
and Ministry interview for 35 men:  $r = +0.121$
- 2) Correlation between teaching practice mark  
and College interview for 35 men:  $r = +0.030$

Neither was significant.

- 3) Correlation between teaching practice mark

and Ministry interview for 65 women:  $r = +0.255$

4) Correlation between teaching practice mark

and College interview for 65 women:  $r = +0.265$

Both were significant beyond the 0.05 level.

At Birmingham University Burroughs<sup>70</sup> looked at three groups of students who were interviewed between 1949 and 1955 for places to train as teachers in the Department of Education between 1952 and 1955. A total of 861 students were interviewed, usually by a panel of two persons. For the academic year 1952/53 fifty-two places were awarded, in 1953/54 seventy were awarded and in 1954/55 ninety-one were awarded. The interviewers completed a check list independently of each other for fifteen aspects - (1) first impression, (2) appearance, (3) pleasant voice, (4) cheerful and friendly, (5) shows sense of humour, (6) maturity, (7) sensitive, (8) sincere, (9) verbal skill, (10) intellectually adjusted, (11) enthusiastic about teaching, (12) range and/or depth of interest, (13) seems well adjusted, (14) suitable to care for children, (15) total impression. For the three groups the total for the fourteen separate points correlated with teaching practice marks as follows:

1952/53  $r = +.570$

1953/54  $r = +.532$

1954/55  $r = +.483$

All are significant beyond the 0.01 level. Burroughs although

satisfied that the interview can be as good as any other predictor of teaching performance noted the fall off in the correlations as the years passed and said that it was almost certainly due to a fall off shown in the interest of the tutors as the experiment progressed.

Weis and Dawis<sup>590</sup> feel that one source of error in the predictive validity of interviews is the assumption by the interviewer that the interviewee is cooperating freely and willingly. This first assumption enables the second to be made, namely that the information provided is correct. Yet as Kahn and Connell had shown in 1957 important differences existed between interview data and data supplied from other sources. Certainly it would seem rather naive if an interviewer forgets that the interviewee is presumably trying to impress, and so will often minimise or forget to mention failures, illnesses (especially mental illness in our society) or doubts about teaching as a career choice whilst emphasising those points which he believes will improve his chances of a place at college.

Dale<sup>245</sup> found that another source of interview error was that the good looking, well dressed interviewee tended to be subjectively over-rated for intelligence. Warburton<sup>245</sup> too found that interviewee dress, accent and deportment all tended to mislead the interviewer. H. F. Harvey<sup>245</sup> in his own research obtained non significant, near zero product moment correlations between interview

mark and final teaching practice mark for one year of entry to college:-

- a) 86 women students on Final  
teaching practice in 1960  
correlation with interview mark  $r = -0.030$
- b) 84 men students on Final  
teaching practice in 1960  
correlation with interview mark  $r = +0.022$
- c) for the combined group of  
students (N = 170)  $r = +0.037$

His results for students on final teaching practice in 1961 were both positive and the relationship for the women students was significant beyond the 0.01 level although the men's correlation again failed to reach a significant level.

103 women on Final teaching  
practice in 1961, correlation  
with interview mark  $= +0.30$

89 men on Final teaching  
practice in 1961, correlation  
with interview mark  $= +0.19$

Harvey feels that the small number of failures during the

three year course suggests that the present selection methods exclude potential failures. However he provided no evidence to show that the failure rate, in colleges with a high proportion of candidates rejected by their first choice colleges, was higher than in those drawing their population from first choice candidates; thus leaving the alternative possibility of college staffs' reluctance to fail anyone still a potentially viable reason.

In a recent study at Shenstone College of Education Sanders and Crocker<sup>636</sup> examined the total data available on all students interviewed between the beginning of September 1969 and the end of December 1969. Of the 165 candidates interviewed 88 were offered a place and 77 were rejected. A biserial relationship between interview mark (awarded on a five point scale) given by the Education tutor and acceptance/rejection stood at  $+0.475$ . The biserial relationship between interview and acceptance/rejection for the main subject tutor's interview (the main subject tutor in each case being a member of the department in which the student had expressed a desire to study) was  $+0.65$ . Upon further examination it was found that where differences of opinion occurred, almost always the applicant was rejected because the Main Subject tutor felt that the candidate would not be suitable for that particular course of study. A one tailed test showed the Main Subject tutor's wishes were more effective than the Education tutor's wishes beyond the 0.05 level of significance. Perhaps

the reluctance of any tutor to describe as applicant as highly acceptable (only seven were thought worthy of that rating by Education tutors and three by Main Subject tutors, at Shenstone) is one of the reasons why Furneaux<sup>245</sup> in an intensive survey for the Nuffield Foundation concluded that the majority of people are extremely bad at interviewing. Although another reason would seem to be that also found for assessment of teaching ability (see the chapter on teaching practice) namely, that by avoiding giving extreme ratings the tutor avoids having his or her decisions questioned and so avoids having to justify it in the open court of staff council or academic board (or whatever the gathering of tutors is called).

#### Academic entry qualifications and teaching

One of the major factors which is considered (both at the level of deciding whether an applicant should be offered an interview and again at interview) is the academic record and subjects currently being studied for examination. Sanders and Crocker<sup>636</sup> found that the 165 applicants they studied were almost all taking at least two or three subjects at the Advanced level, (compared with the 1968 and 1969 entry to Colleges of Education of 38% actually possessing two or more 'A' level passes). This appeared to have had an effect on interviewing tutors when seen as part of the selection battery.

Factors being related	"r"	sig. level
Examination qualifications actually possessed, and offer of a place at Shenstone College	+0.25	0.01
Examination qualifications 'hoped for' at time of entry and offer of a place at Shenstone College	-0.22	0.01
Total battery of two interviews, essay and actual-examination qualifications with offer of a place at Shenstone College	+0.66	0.01
Total battery of two interviews, essay and 'hoped for' examination qualifications with offer of a place at Shenstone College	+0.11	N.S.

Harvey<sup>245</sup> compared General Certification of Education

results for two years of students with the marks given to them for teaching practice as one criterion of college success. With one exception the results were non significant:-

1960 entry of 88 women, correlation between 'O' level G.C.E. and final teaching practice results	r = +0.23	significant at 0.05 level
1960 entry of 87 men, correlation between 'O' level G.C.E. and final teaching practice results	r = +0.08	Non significant
1961 entry of 109 women, correlation between 'O' level G.C.E. and final teaching practice results	r = +0.08	Non significant
1961 entry of 92 men, correlation between 'O' level G.C.E. and final teaching practice results	r = +0.07	Non significant

Bowden<sup>55</sup> in Northern Ireland found that teaching practice correlated non significantly with the marks from the best five papers for each candidate taken in the senior certificate

for 65 women the correlation was +0.071

and for 35 men the correlation was -0.078.

Lovell<sup>339</sup> in 1951 examined the academic qualifications of 902 students at four different colleges. Chi square analysis showed no significant difference between the practice teaching performance of those with Matriculation, those with School Certificate and those with less than School Certificate. Nor did it seem to matter whether the student had been to a grammar school or some other educational institution.

Warburton<sup>245</sup> felt that one reason for the low predictive validity of G.C.E. in Colleges of Education is that the minimum entry requirement of five passes at the Ordinary level of the General Certificate of Education "excludes virtually nobody" whilst at the same time apparently contradicting himself by also suggesting that the low correlations are due to only part of the population being studied. In fact when the criterion of college success has been academic performance several studies would seem to show that the relationship between school and college academic results is usually significant. Walters<sup>584</sup> produces a whole series of these for students at three training colleges between 1951 and 1956. The following table is an extraction from his total tabulated results. Walters pointed

out that the following correlations, which used G.C.E. results possessed on entry to college, were higher than those based on results known at the time of the interview.

College	Years at College	No. of students	Correlation between College Academic marks and prior Academic qualifications	Level of Significance
A	51-53	106	+0.32	0.01
A	52-54	108	+0.45	0.01
A	53-55	122	+0.51	0.01
B	50-52	56	+0.64	0.01
B	51-53	57	+0.59	0.01
B	53-55	63	+0.59	0.01
C	52-54	73	+0.53	0.01
C	53-55	72	+0.30	0.01
C	54-56	76	+0.32	0.01

Baranyay<sup>26</sup> found that the top 5% on teaching practice of the students at three housecraft colleges were significantly (0.05 level) better qualified academically on entry to college than were the bottom 5%.

In America Claude Mathis and Y. H. Park<sup>348</sup> investigated the background of 252 students who had recently completed their practice teaching assignments at Northwestern University. For

107 students who had been in elementary schools the correlation with high school rank was +0.14 which falls just short of being significant at the 0.05 level. For 145 students who had been in secondary schools the correlation between practice teaching grade and high school rank was +0.28. This is significant beyond the 0.01 level.

Shannon<sup>26</sup> in 1941 also found that the best student teachers easily surpassed the worst for scholarship. However like several other studies his work was confined to performance within the college and so adds nothing to our knowledge of useful predictors prior to college entry. There is however other evidence that it is right for tutors to be impressed by G.C.E. results at the time they make their selection decisions, for several researches supplement Shannon's findings. Mead and Holley,<sup>239</sup> over fifty years ago in 1916, obtained a significant correlation of +0.243 between general course scholarship and teaching practice marks. Payne<sup>239</sup> two years later ranked 359 graduate student teachers for academic performance and then compared the top and bottom thirds for teaching performance. The top group were rated as superior for management of children, instruction and attention to details of school business. Stuit<sup>239</sup> in 1937 got similar results for 161 graduates at the University of Nebraska. He found that roughly one third of students rated as 'inferior teachers' had sub-average academic grades but only one tenth of the 'superior

teachers' were academically sub-average. His biserial correlation for academic marks compared with success or failure as a student teacher was +0.314. Saer<sup>675</sup> had found that women students with the 'Higher' certificate were significantly superior on teaching practice to those with only school certificates.

Johnson and Morris<sup>239</sup> however sound a warning from their own researches at New York State College where they too found that the below average academics amongst the student body also tended to be less satisfactory as teachers. They point out that in spite of the trend many poor teachers had high academic qualifications.

Finally within this chapter it is worth mentioning briefly some of the wealth of research into the possible relationship between measured intelligence quotient and teaching practice results. (Intelligence is dealt with more fully in the chapter on Personality.) Generally researchers have concluded that the relationship is too low to warrant using I.Q.'s as a selection device. Often the published researches have been based on I.Q. measured after the student was at college although the relative stability of young adult I.Q. scores probably means that extrapolation to selection is valid. W. A. Skinner<sup>490</sup> quotes various researches from that of Knight in 1922 to an earlier work of his own in 1947 as producing twenty-three correlations between I.Q. and teaching practice mark, all but two being between 0.00 and +0.33, the exception being Somers in 1924 who got the two correlations of +0.43 and +0.54. Interestingly every correlation, although low, is positive and has been obtained via a wide variety of intelligence tests. The low nature

of the relationship has led several writers to point out that student teachers come mainly from grammar schools where they were highly selected for I.Q. in the first instance. Also it seems generally agreed that above some cut-off point the relationship between I.Q. and teaching ability is almost random. The work of Baranyay<sup>26</sup> in 1962, Halliwell<sup>239</sup> in 1965 and Cortis<sup>114</sup> & <sup>116</sup> in 1966 seem also to support this long held theory.

Lovell<sup>339</sup> suggests that the cut-off I.Q. is around 100, whilst Sister Simeon<sup>485</sup> (TARPEY) says it is around 108 to 110 above which point "success in teaching depends much more on qualities of personality, temperament and character". Rather curiously she then goes on to denounce the practice of only selecting student teachers from "the upper 25% of the community ... (and so excluding) a large proportion of warm hearted, socially minded people who could perhaps make better teachers".

### Brief Summary of Chapter Three

English and Welsh Colleges of Education carry out an expensive selection process in which considerable attention is paid to head teachers' report, examination qualifications, quality of sixth form experience, general, social and sporting activities, before an interview is offered. Some colleges choose students of very high academic calibre but others have to accept many who are well below the national average. Welsh and Roman Catholic colleges are the least fortunate in this respect.

Referees often seem willing to testify to a candidate's future teaching potential despite a lack of evidence on which to base their judgement. At interview college staffs also surmount the problems of an almost total lack of predictive criteria upon which to base their decisions and as a result invalid reasons for selection or rejection are common. The interview has been shown in the main to have little use as a predictor of classroom ability. Academic qualifications gained at school are a major factor affecting the offer of a place and tend to have low but positive correlations with college academic work. I.Q. has almost always been shown to correlate positively with teaching practice marks but the relationship appears to be too low to warrant intelligence testing as a selection device.

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## Summary and Conclusions

### Part One

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## Summary and Conclusions

### Part One

Over the years concepts of the teacher's role have altered. At the same time it would be true to say that throughout educational history there has been no universally accepted consensus of opinion as to how a 'good' teacher should operate. Thus today we find D. R. Gibson<sup>680</sup> complaining of the lack of evidence about the different roles of primary and secondary teachers although he says there is "a general consensus that students preparing to teach younger children tend to hold a more liberal, child centred view of the role than students preparing to teach older children". In his own researches he found that teachers in primary schools were functioning differently from secondary teachers, enjoy greater flexibility in their social organisation, curriculum alternatives and methods. They were more concerned with the whole child, less subject to school ritual and keener on breaking down school/neighbourhood barriers".

Kob<sup>240</sup> also found differences in the way teachers saw their role. Graduate school teachers were more inclined to see their role as narrowly academic, providing for the intellectual development of their pupils; whilst non graduates saw their own personalities and general abilities as being essential to the development of the whole child. In colleges of education today roughly 50% of the academic staffs are ex grammar school teachers who continue in the main to teach the academic subject they studied at university, the other 50%

come from a variety of backgrounds of teaching experience, primary, secondary, maladjusted, E.S.N., technical, art colleges, etc.

Increasingly this second source of supply is made up of graduates and increasingly the course of studies in many colleges over a long period of time has been becoming more academic. Less and less time has been given to pedagogy, more and more to the education of the student, so that the typical advice Blakiston<sup>681</sup> gave in his book "The Teacher" in 1883 -

"When teaching a class seated at parallel desks he (the teacher) should stand about four feet from the centre of the front desk so that without turning his head he can view the whole group at a glance and readily eye every child in turn."

or

"Every teacher should acquire the habit ... of taking in breath by the nostrils, never by the mouth."

had given way by the nineteen twenties to acceptance

"that at the present day a teacher leaves college with a broader outlook than formerly, but with far less professional skill, and it is obvious this must be so. Professional training can only be given in a school."

"From the nature of the case but a small proportion of the students' two years in college can be spent actually in schools, and even this is spent under such artificial conditions as to render its value doubtful."<sup>682</sup>

This trend has continued until the present day. Professor Bantock<sup>683</sup> in 1970 reported to the House of Commons Select Committee on Education that:

"... partly as a result of the coming of the B.Ed. degree, which has emerged as possibly the best incentive to the raising of standards in the colleges, the emphasis is becoming increasingly on the need to appoint lecturers who have specialised in one of the theoretical disciplines and who, therefore, have genuine knowledge, rather than classroom anecdote, to pass on."

The National Foundation for Educational Research<sup>684</sup> however were less happy about the preparation of teachers for their role. They saw many sources of disquiet including "the system whereby training courses for prospective infant teachers is the same as that for students who may be teaching specialist subjects in the upper secondary school". They felt that part of the difficulty arises from "... the division between 'education' lecturers and 'subject' lecturers, (a division) hallowed by tradition, ..."

Teachers, whether in schools, colleges or universities, besides having had different pedagogic training for their roles over the years have lived in an atmosphere of slowly changing concepts of the purpose of education and changing concepts of pedagogic theory. Some college of education lecturers are today steeped in a knowledge of these changes, others barely know anything at all about them. And yet the educational philosophy a lecturer holds may dramatically

affect his decision as to the worth of a student's teaching.

Only during the last 150 or so years has English education moved very far from the Greek and Roman traditions that education was for the elite<sup>198</sup> whilst the masses merely required training in order that they a) knew their place in society b) were obedient to God and their masters and c) could carry out their life's task efficiently. The rapid increase in popular education during the eighteenth and nineteenth centuries still saw the majority of teachers imbued with this concept of their purpose. Robert Raikes<sup>41</sup> for example opened his first Sunday School because he felt that the coarse, undisciplined children needed to learn self control and feel Christian influence.

Pestalozzi and Herbart influenced English ideas of teaching strategies although Lancaster's<sup>288</sup> monitorial system based essentially on rote learning and repetition can be seen to have had the biggest single influence on early nineteenth century concepts of teaching method. Van Dalen<sup>56</sup> claims that the aim behind most European educational policies by the 1850's, was still to produce loyal, submissive, God fearing citizens, who were well satisfied with their position in life. In England Lord Macaulay<sup>641</sup> obtained from Parliament in 1847 the grant of £100,000 for the education of the 'common people' on this very premise. Many writers at that time commented on the concept of a good teacher being the one who had learned most off by heart and got his pupils to do likewise. By the start of this century many still believed that a teacher's skill

could be measured by the amount of facts he poured into his pupils. They also believed that learning should be unpleasant as that would strengthen the child's will power<sup>198</sup>.

Gradually education became somewhat abstracted from the pressures of living. Educational theory in the early twentieth century was affected to a large degree by the work of Dewey. Dewey believed that education should be child centred with the teacher in the role of guide rather than instructor, a guide who realised that children are individuals who progress at different individual rates. As recently as 1966 Margaret Miles<sup>358</sup> had written "It took me a long time to realise that the art of teaching is to help people to learn, to find things out and think for themselves." This behavioural "truth" has now long been accepted by many educators but it is by no means always practiced in the classroom. A further influence in recent years has been the work of Jean Piaget. Once again he has emphasised the individuality of different children. He has also stressed the need to use language and techniques appropriate to the child's level of intellectual development. Infant schools typically show the effect of this influence. Small group work, individual choice time, and vertical streaming, where the teacher is committed to teaching a small group of children whilst the remainder seek knowledge, all are derived, at least in part, from this belief.

The typical academic work of the secondary modern school is partly due to a striving for parity of status, on the part of the teachers, with the grammar schools. Status is given to the more

academic courses of study and hence to the teachers who provide them; partly due to the demands of parents who realise the value of certificates which 'prove' a child has reached certain academic levels; partly due, one suspects, to a lack of knowledge on the part of the teachers of the intellectual growth patterns of children during the years of pre puberty and puberty, and partly due to the fact that teaching a class full of individuals at different stages of learning is infinitely more difficult than teaching a subject to all of them at once.

Although there appears to be a multiplicity of goals and methods in modern education, M.V.C. Jeffreys<sup>328</sup> has criticised it for lack of a clear purpose. So too has Tyrell Burgess<sup>643</sup> who found that young teachers were often unaware of what is being discovered in education and could often not give a convincing explanation for what they did. Wehling and Charters<sup>589</sup> say that despite the abundance of statements of aims such as 'the development of the whole child' nevertheless the learning of subject matter was still in practice regarded as the essential educative task.

The teacher's task has to some extent been altered by modern technology. No longer are his only tools "textbooks, paper, black-board and a classroom for 30, 40 or more pupils. The teacher has become a manager (of learning) because there is at his command a wide variety of resources..."<sup>685</sup> How aware is the young boy or girl, usually from the grammar school or from the academic streams of a modern school or comprehensive school of the various concepts of the

role of a teacher when they choose teaching as their career? Or, indeed, of the variety of ways in which he or she may be expected to tackle the teaching task within a variety of schools, not only physical differences but also catering for different socio-economic populations of children and operating in a philosophical climate which varies from head teacher to head teacher, county to county, and even from town to county? How many will have heard of Nuffield mathematics or Nuffield science, the ideas of vertical streaming or of team teaching? How many of them will be flexible enough to change their styles if they change schools or if their headmaster changes? How many will be flexible enough to meet the challenge in J. S. Bruner's<sup>66</sup> prediction that;

"It may well be the case that (we are) entering a period of technological maturity in which education will require constant redefinition."

Nationally almost every candidate who applies to enter a college of education finishes up with a place somewhere. In 1899 only 2,732 out of a total of 10,128 Queen's scholars who wished to enter colleges actually gained a place at college. In 1967 some 36,000 started a course of study at a college of education. Only 239 applicants were described by the Department of Education and Science as "acceptable" but unplaced. The entry figures for the year 1970/71 for the second year running have shown an actual drop in applications from a peak of 58,351 wishing to enter in 1968 to 54,501 wishing to enter in 1970. (These figures include all those who withdrew for

a variety of reasons and ignores the lower birth rate in 1952/53 as a causal factor). Of these 3000 failed to gain the minimum entry qualification. "What comes out of this statistical jungle (from the Central Register and Clearing House) is that the colleges were unable to fill the 39,000 places available. The final entry at 37,384 was 565 fewer than in 1969. Only 152 "acceptable" candidates were unplaced."<sup>686</sup> It has been argued that this is partly due to the low starting salary and partly due to young people being less willing today to commit themselves at seventeen or eighteen to a course of study leading eventually to only one career. Whatever the reason only 0.42% were "acceptable" but unplaced in 1966, by 1970 this figure had dropped to 0.40%. A place for everyone who is qualified and wants it, is thus very nearly a fact. (By 1971 this brief downward trend had been reversed and both applications for places and the number offered a place was once again rising.)

Of the students starting their course of studies roughly 11% drop out before the end, (many in preference to failing) and approximately 2% fail to qualify. That only 11% drop out would at first seem surprising in view of Ritchie's<sup>516 & 448</sup> findings, admittedly some 40 years ago, that 80% of girls and 50% of boys chose their careers for "wrong" reasons. Cohen<sup>96</sup> does not accept that people do become teachers by chance and quotes many researchers as showing that careers are chosen with the expectation of certain identities. He also points out that in general student teachers knew what their decision involved.

Cohen's sample was however a group of university students presumably mostly destined for a grammar school career. Would his findings hold good in a college of education? Butler<sup>626</sup> would argue 'yes' on the grounds that career decisions are gradually arrived at via self knowledge and knowledge of the occupational world. Thomas<sup>535</sup> would also argue 'yes' because there is a commonly held stereotype of 'the teacher' and stereotypes tend to be reinforced by attracting people who match the type.

Many of today's college of education students are there because either their careers teacher thought they would not get a place at university or suggested they applied to college as a second string to their fiddle and the first choice of a university place was subsequently not realised.

Another factor helping a student to choose teaching as a career is the student's current status and his parents current career roles. The lower the social status of a teenager the higher is the prestige accorded to teaching as a career<sup>50, 282, 436, 512, 515, 554, 569</sup>. Evans<sup>180</sup>, Kwan Yan Ol<sup>401</sup>, Shipman<sup>482</sup>, Cohen<sup>96</sup> and Taylor<sup>530</sup> are all British writers who have shown evidence that this negative correlation between social class and prestige accorded to the teaching profession is carried forward into career choice. Children in the lower (but not lowest) social classes being the more likely to choose teaching as a career. Storr's<sup>631</sup> work and Butler's<sup>626</sup> would suggest that many youngsters choose teaching as a career for covert reasons such as desire to be a leader and to dominate, reasons usually expressed in the socially approved statement "I

want to work with children".

Both in America and Britain<sup>50, 69, 362, 311, 424, 58</sup> there is considerable evidence to show that entrants to colleges of education are inferior academically, on entry, to students who enter universities. For many years the average academic qualifications of entrants to colleges in Britain has been steadily rising, but the minimum entry qualification has remained virtually the same for some 25 years. Thus the "tail" has been, whilst smaller today, equally minimally qualified for that period of time. There is evidence too that the steady improvement in student entry qualifications has ceased during the last two years, despite a larger 'pool' of well qualified persons in their late teens.

Once the young person decides to become a teacher and so applies for a place at a college of education he or she is then passed through the selection sieve. Virtually every one is interviewed, commonly by two members of staff. Many fail to gain a place at their first choice college and so begin the soul destroying, expensive and time consuming trail from one college willing to interview them to the next. At the end of this process in 1970 only 152 qualified students failed to gain a place somewhere. The colleges were not full, as we have seen. Many colleges are able to fill up with their pick from highly qualified 'first choice' candidates. Simons<sup>486</sup> had found that women in southern colleges were significantly superior academically on entry to women in northern colleges whilst the students in Roman Catholic colleges and Welsh colleges were on average significantly poorer academically, on entry, than the national college entry average. Most colleges ask for a confidential

reference from candidates' head teachers, in which predictions of future teaching ability is asked for; Corey<sup>112</sup> thought this request to be ridiculous, Burroughs<sup>245</sup> found the referee tended to base his prediction on the candidate's athletic and social activities rather than on academic or known teaching ability. Harvey<sup>245</sup> found the relationship between the head teacher's prediction of teaching ability related non-significantly with teaching practice marks but Claudine Morgan<sup>676</sup> found in her investigations that heads' predictions were the most successful with  $r = 0.206$  being significant beyond the 0.05 for the groups of students she studied.

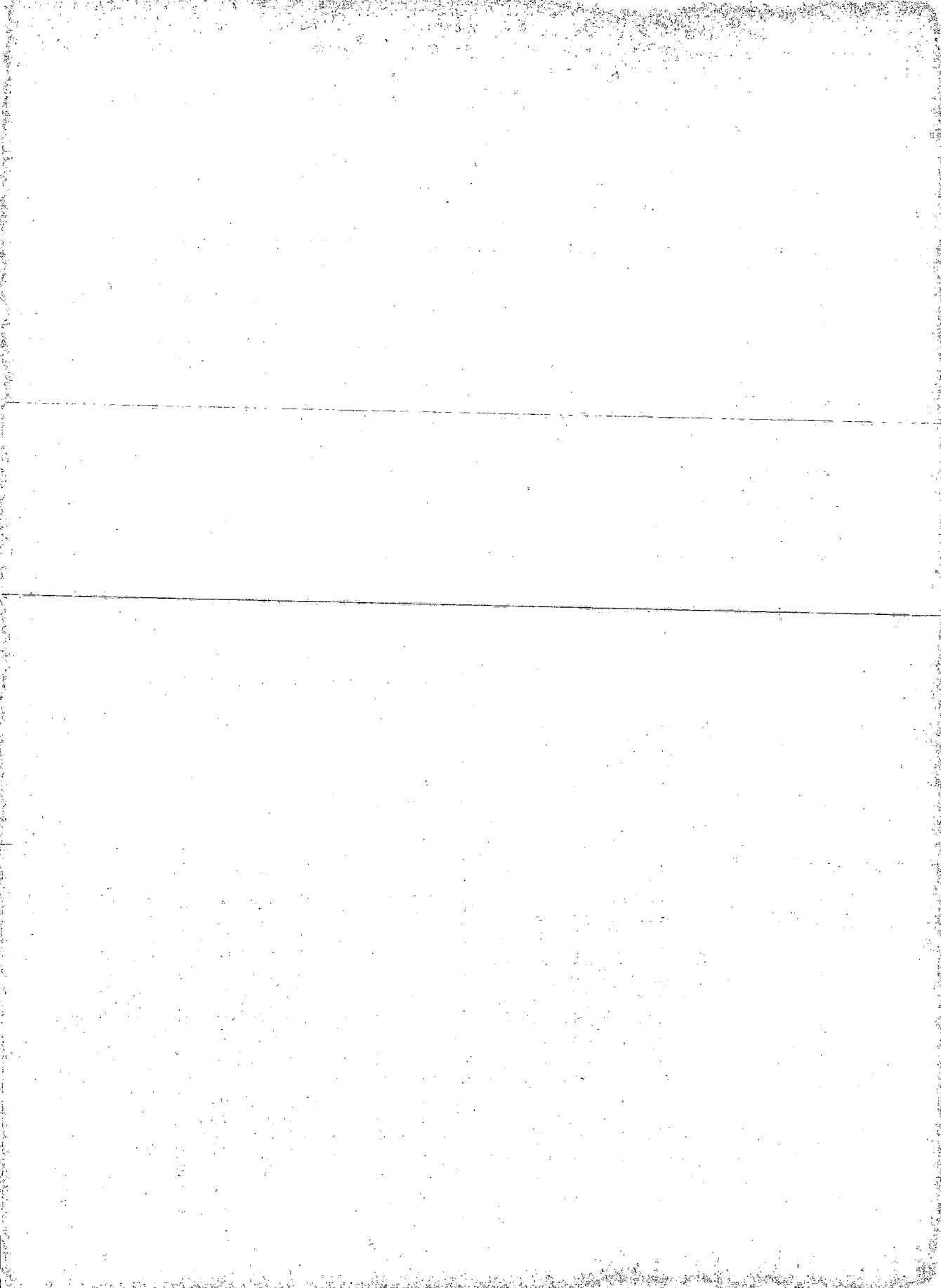
One problem at interview is the varied criteria of who will make a 'good teacher' (and what 'good teacher' characteristics are) used by the interviewing tutors. There appears to be no evidence that any college trains new members of staff in a standard interviewing technique. Cortis<sup>116</sup> complains that selection interviews in England and Wales are haphazard, Corey<sup>112</sup> felt the interview was the only real hurdle. In it the interviewing tutor often used misleading perceptual information. Fleming, Vernon, Parry, Lawton<sup>411</sup>, Harvey<sup>245</sup>, Wood, Weinstock, Martin, Shannon, Baranyay<sup>26</sup> and Bowden<sup>55</sup> all found the college interview tended to be unreliable and of poor predictive validity but Walters<sup>584</sup>, and Halliwell<sup>239</sup> found it to be of some value. Burroughs<sup>70</sup>, for graduates entering professional training, found the interview to be a good predictor of teaching performance only for as long as he managed to persuade interviewers to use a carefully planned interviewing technique.

Dale and Harvey<sup>245</sup> had both found that the way the student

dressed and carried herself affected the offer of a place at college, whilst Furneaux<sup>245</sup> concluded after a period of research that the majority of people are very bad at interviewing.

The student's actual or potential passes (and grades) in the General Certificate of Education affect the likelihood of his being offered a place at colleges which can afford to pick and choose, indeed in many these may well determine whether he is even offered an interview. Harvey<sup>245</sup>, Bowden<sup>55</sup>, Lovell<sup>339</sup> and Warburton<sup>245</sup> all showed that there was little or no relationship between this and college teaching practice marks although Walters<sup>584</sup>, Baranyay<sup>26</sup>, Mathis and Park<sup>348</sup> and Shannon<sup>26</sup> all showed a significant relationship between pre college academic marks and college academic course marks.

It would seem that the only justification for interviews continuing to be held in colleges of education cannot be (as is believed by many staff) to exclude those who lack the 'personality' or 'ability' to become teachers but rather to provide the applicant with information about the courses offered in order that he or she may make the best possible choice. Certainly we need to ask whether there is any reason to suppose that Scottish or American student teachers are any poorer than English despite the colleges in those two countries not, as a general rule, interviewing applicants.



Part Two

Chapter Four

Personality as a Predictor of Teaching Ability

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What is personality?

Teachers yesterday and teachers today if asked why someone is recognised as a "good" or a "poor" teacher will sooner or later mention "personality". Either the teacher under debate has got it, or lacks it. "Personality" will occur many times more than "efficient", "pays attention to detail", "scholarly", or the reverse concepts. Yet Ballard<sup>21</sup> writing in the nineteen twenties decried this suggestion, saying he had yet to meet a failing teacher who lacked 'personality'. How many teachers labelled at school as lacking personality are, I wonder, similarly labelled in their private lives, in their leisure pursuits, in their weekly travels about town? Research does not tell us.

What then is Personality? Boris Semeonoff<sup>474</sup> briefly writes, "Personality is commonly understood as what makes one man different from another". Jesse Gordon<sup>222</sup> takes this a stage further by pointing that not only do people differ from each other but they also differ in what they do and how they do it. Vernon<sup>575</sup> becomes more specific when he quotes R. B. Cattell as saying "personality is that which enables us to predict a person's behaviour in a given situation". He goes on to mention intelligence, bodily strength and skill as part of personality but points to the term being chiefly used to describe a person's emotional and social qualities together with his drives, sentiments and interests. He further points out that the layman frequently uses "personality" to describe

someone who is domineering, impressive or attractive.

Finally James Drever's dictionary of psychology<sup>657</sup> describes personality as:

"the integrated and dynamic organisation of the physical, mental, moral and social qualities of an individual, as that manifests itself to other people in the give and take of social life; on further analysis it would appear in the main to comprise the natural and acquired impulses, and habits, interests and complexes, the sentiments and ideals, opinions and beliefs as manifested in his relations with his social milieu."

#### Affect of teacher personality on children

— Within this thesis this last, broad description, would seem the most suitable; personality is the 'everything' about a man or woman in as far as it can be observed by others and/or affects the lives of others. This second facet is, of course, of considerable importance in teaching. Does the personality of the teacher affect the lives of his pupils?

Bell<sup>656</sup> found that over half of 1031 students who filled in a questionnaire for him claimed to have permanent changes, mostly in attitudes, as a result of contact with teachers they disliked. This subjective belief appears to be supported in the short term by the work of Anderson<sup>183</sup> in the mid nineteen forties. He found that the class behaviour of pupils varied according to the teacher they were with and tended to mirror the teacher's behaviour, particularly with regard to aggression. On following up the pupils and teachers

one year later Anderson found that the behaviour of the teachers was substantially the same but the pupils had altered to fit their new class teacher. Perhaps this accounts for Ned Flander's<sup>176</sup> finding that at the beginning of a school year students were more concerned with the problems of adjusting to their teacher than with the problem of learning and achieving. Learning commenced once the students found there was no threat in the new situation. Murphy and also Lewin were two more researchers who have helped to establish that groups of pupils do act differently with different teachers. Chetcuti takes us a step further with his research finding that pupils morale, whether in 'A' or 'C' streams depended significantly upon their teacher's attitude towards them. The children with the best self concepts tend to be those who believe their teachers have a high opinion of them as Davidson and Long<sup>412</sup> showed in 1960. But Dorothy Stock and later Phillips both showed that the teacher's opinion of the children he teaches depends significantly upon his opinion of himself. The interrelationship of psychological self-satisfaction with academic work can be seen in the work of Roth<sup>412</sup> who in 1959 demonstrated that the students most likely to improve their reading scores were those with adequate self concepts. Katherine Evans<sup>183</sup> provides extra support from the realms of special education with her finding that maladjusted children of normal ability and achievement mostly improved considerably if they were placed with well adjusted teachers. In brief it would seem

that the amount of academic progress made by a pupil depends upon his opinion of his own worth, which is at least in part dependent upon his teacher's opinion of him and that latter opinion is coloured by the teacher's opinion of his own value.

If this was the only personality factor involved in pupil growth the selection of student teachers would be greatly simplified. Unfortunately it is not.

A. F. Neel<sup>390</sup> typed medical students as authoritarian or humanitarian according to their scores on the California F test. The authoritarian students had more trouble learning from humanitarian teachers and in learning humanitarian material, conversely the humanitarian students had more difficulty learning factual material and learning from authoritarian teachers.

Shadbolt<sup>476</sup> in 1968 concluded from previous researches that discovery methods of learning were more useful when teaching children who were low on anxiety. In his own researches with 237 first year student teachers learning new biological material via either teacher centred or discovery methods he found that firstly the amount they learned depended upon their basic ability (as measured by AH5) but secondly extroverts learned significantly more via discovery methods and introverts learned significantly more via teacher centred methods. (The H.B. test was used to classify the students for extraversion and intraversion being similar in design and content to The Junior Maudsley Personality Inventory.)

In a much larger experiment Heil and Washburne<sup>253</sup> studied 55 teachers and all of their pupils in 1958/59. The pupils were given pre and post tests of achievement, social acceptance, feelings and intelligence. The teachers were observed by trained observers and also took the "Teacher Education Examination" and the "Manifold Interest Schedule". As a result of these tests the children were classified as "conformers", "opposers", "wavers", and "strivers". The teachers were classified in three groups as A. Turbulent, B. Self Controlled and C. Fearful.

Self controlled teachers obtained more from all children and fearful teachers obtained the least but there were considerable differences once the children were considered in their four groupings:

Conforming children did best with turbulent teachers

Opposing children did best with self controlled teachers

Striving children did well with all teachers.

When the teachers were considered it was found that:

1. Turbulent teachers produced the best results in mathematics and sciences
2. Self controlled teachers produced the best results in Languages
3. Fearful teachers produced the best results in social studies for conforming children, doing as well as the turbulent teachers in this area when working with wavering children and better than the self controlled for all children.
4. The self controlled teachers produced the greatest growth in

friendliness for all children except for the opposers who did better with turbulent teachers and waverers who did better with fearful teachers and actually regressed with turbulent teachers.

These few researches would suggest that no one type of teacher is ideal for all children and so perhaps it is not so surprising, as the researches in the next pages illustrate, that teachers appear to be drawn from a wide cross section of society and that no one personality type is identifiable as more successful than the rest. It also throws some doubt on the wisdom of Ryans<sup>462</sup> insistence that his observers must agree closely with master observers when they were assessing teachers for the Teacher Characteristic Study.

### Measured Personality of Teachers and Teaching

Almost every test of personality has been used at some time in an attempt to find how teachers differ from the general population or when trying to find how "good" teachers differ from "poor" teachers. Many tests have been evolved specifically for the purpose of finding that 'something different' about teachers which could then be used to identify good or poor applicants to join the profession; or as a filter when several applicants apply for the same post. A brief summary of some of these researches follows on the next few pages, under the heading of the particular personality test used.

"Acceptance of Self"

Reed<sup>285</sup> in 1963 reported that the most effective teachers, as judged by administrators and pupils, were those who scored highest on a sentence completion test of self acceptance. Correlations fell between +0.66 and +0.76.

"Autobiographical Questions" Only a list of responses to autobiographical questions and a sentence completion test out of a whole battery of tests were reported by H. Zimilies<sup>625</sup> as giving significant correlations with the marks given to 45 teachers followed up after they had left six New York Colleges.

"Allport-Vernon Study of Values" was given as part of a battery of tests to 98 students at St. Katherine's Teacher Training College by Sultan.<sup>519</sup> He concluded that an approximately normal distribution of traits was displayed. However, in America Obst<sup>395</sup> gave it to 494 Education students at the University of California at Los Angeles and found that men students scored highest for the aesthetic and political scale and women scored highest on the aesthetic and social scale both of these being different from that found with the standardisation population. This assessment according to Tudenhewn<sup>517</sup> in 1959 and Kelly<sup>517</sup> in 1955 would alter only a little during the ensuing years as teachers. Both had shown in separate researches that Allport-Vernon responses remain fairly stable over a twenty year period. Tudenhawn got a correlation of +.79 for males and +.68 for females whilst Kelly got +.69 for both sexes combined and so claims to have supportive evidence for Freud's belief that adult personality remains relatively

stable over long periods.

"American Council on Education Psychological Examination" was given as part of a battery of tests to 150 student teachers and 464 freshmen and sophomores on two separate occasions. The student teachers did not differ from the standardisation population on either occasion according to Durflinger.<sup>163 & 164</sup>

"Activities Index" Stern<sup>214</sup> used this in 1960 to compare students studying in sixteen major fields. Student teachers showed significantly stronger needs for conjunctivity, humanism, affiliation, blame avoidance, deference, nurturance, succorance, emotionality and sex whilst showing significantly weaker needs for fantasied achievement and risk taking than students in other areas.

"Bernreuter's Personality Inventory" was another test shown by Kelly<sup>517</sup> to produce stable personality profiles over a period of 20 years ( $r = +0.54$ ). It was used by Gotham<sup>221</sup> as part of a battery of tests which attempted to predict how much pupil change would occur. The profiles for the teachers appeared to have no significant relationship with the pupils progress.

"California F Scale" This test has been fairly widely used in America. Clark, Klana, and Allen all use various terms to describe their findings that religious people got F scale scores which suggest they are more authoritarian, conforming, ego defensive, intellectually rigid and ethnocentric than non religious people. Walberg<sup>578</sup> compared the profiles of 1483 student teachers in American Mid Western Universities (723 were Roman Catholic, 149 were Jews and 556 were Protestants). He concluded that it was likely

that:-

Roman Catholic teachers were more categorical in class,  
 Jews and Protestants were more moderate in class,  
 Athiests and Agnostics were more tentative and hypothetical in  
 class.

Zimiles<sup>625</sup> failed to predict the teaching practice assessment given to 145 students at 6 New York Colleges via their 'F' test scores nor did the scores enable him to predict the assessment made by 4 observers when they visited 45 of the students in their classrooms a year after they had qualified.

Dandees<sup>135</sup> used the 'F' scale in a postal survey of 223 New York State teachers. He claims that the 121 usable returned sets of data showed a clearly significant relationship between attitudes regarded as desirable in effective teachers and their measured psychological health. He added that psychological health should be regarded as the ability and freedom to grow rather than the absence of pathological oddity.

Medley<sup>349</sup> found that the F test failed to predict the classroom climates of 49 student teachers who were followed up three years after they qualified and Rabinowitz and Rosenbaum<sup>429</sup> similarly reported a lack of relationship between F scale profiles and teacher/pupil rapport for 1600 New York student teachers.

"California Psychological Inventory" Durflinger's<sup>163 & 164</sup> populations of 464 and 150 potential teachers did not differ significantly from the standardisation population on this test but when Veldman and Kelly<sup>572</sup> compared 31 student teachers regarded as

highly effective in the classroom with 31 regarded as highly ineffective. Those regarded as effective were rated higher for being friendly, cheerful, admired; for producing firm control without harshness, and for keeping "distance" within a meaningful, structured atmosphere.

"Catell's 16 P.F." is another extensively used test which unlike the California F scale has been used on both sides of the Atlantic. In America Kenny and White<sup>299</sup> gave it to 50 male and 50 female teachers and found that the men showed significantly more emotional stability and ego strength than the females, they were also more independent. The women teachers were more changeable, emotional, evasive and inclined to neurotic fatigue. The authors do not suggest that teachers differed from the normal population in these respects. Schwartz<sup>656</sup> in an earlier research used a forerunner to the 16 P.F. and found no significant relationship between any of its scales and teaching practice marks.

Jenkins<sup>285</sup> also found that men students at Cardiff College of Education in 1963 were more emotionally stable than the women. The extroverts, as measured by 16 P.F., were superior on their final educational theory examinations and teaching practice in 1966 at a low but significant level.

Start<sup>510</sup> used 16 P.F. on 35 out of 39 secondary modern teachers (the other four refused to cooperate) and also got the headmaster to rate them for teaching ability. The best teachers differed from the rest on the A-, B+, E+, L-, M+, Q1-, and Q3-, factors. Teachers rated by the head as average or below average appeared to be the most

sociable.

Cortis<sup>115</sup> used a battery of tests, including the 16 P.F., on 259 students at three Manchester Colleges of Education. None of the tests correlated significantly with the criteria of final examination results or teaching practice.

Tarpey<sup>524</sup> found a wide range of personality traits amongst student teachers which generally speaking followed a normal pattern. For three of the four colleges there was little relationship between 16 P.F. scores and teaching practice marks, but at one college (where nuns were trained as teachers) teaching practice marks correlated, for the 28 students, with factor A at  $-0.442$ , factor H- at  $-0.408$ , factor G at  $+0.446$  and factor M at  $-0.372$ . Although Tarpey does not say so all of these bar the last, which just fails, are significant beyond the 0.05 level.

Warburton, Butcher and Forest<sup>585</sup> used 16 P.F. in a battery of tests applied to 118 student teachers and got correlations with teaching practice marks of  $+0.236$  for conscientiousness,  $+0.220$  for sensitivity and  $+0.223$  for self control; all significant beyond the 0.05 level.

Davis and Satterly<sup>140</sup> gave the 16 P.F. to 149 female student teachers at Homerton College of Education in 1965 and to the same 149 females (plus 5 late starters) in November 1967 just prior to their final teaching practice. On final teaching practice 23 were given "D" and 8 were given "E" ("E" at Homerton is a pass but regarded as very weak.) The "A" category were called high, the

"B" and "C" intermediate, and the "D" and "E" low. On Cattell's 16 P.F. the following results were obtained when the scores of the high, intermediate and low students were compared.

16 P.F. Factor	Level of Significance Difference		
	High cf low	High cf Inter	Low cf Inter
G	.01	.05	N.S.
I	.01	N.S.	.01
O	.001	N.S.	.01
Q <sub>4</sub>	.05	N.S.	N.S.

November 1967 testing.

G	.01	.05	N.S.
I	.01	N.S.	.01
M	.05	N.S.	.01
O	.05	N.S.	.05
Q <sub>4</sub>	.05	N.S.	.01

September 1965 testing.

The authors interpret these results as showing the poor student teachers to be less conscientious, less persistent, less tenderminded and less sensitive but more insecure, more timid, more tense, more excitable and more restless than the good student teachers.

Claudine Morgan<sup>676</sup> used the 16 P.F. on 511 students at

Elizabeth Gaskell College of Education and found that only 'emotional sensitivity' showed a significant relationship with teaching marks.

The "Cox Orleans" prognostic test of teaching ability was used by T. K. Nandi<sup>386</sup> in Scotland some thirty years ago and produced predictive correlations of  $+0.339$  with teaching practice marks.

"The Draw a Teacher Test" was used by Zimiles<sup>625</sup> as part of his New-York-Battery given to 145 seniors. It failed to produce significant correlations with assessments of their teaching ability. It also failed when used by Rabinowitz and Rosenbaum<sup>429</sup> on their sample of 1600 students and when used by Medley<sup>349</sup> with 49 students.

"The Edwards Personal Preference Schedule" was used by Cook<sup>107</sup> at Purdue University. 196 students in an Educational Psychology Course differed from the standardisation population by appearing to be more docile, ignoring frustration and denying aggression, showing a strong need to belong, deemphasising competition, requiring status and prestige but expecting to get it from children rather than their peers, taking part in many non-lasting activities, showing discomfort in heterosexual activities, pointing out the privileges of leadership but minimising the obligation of same.

Sheldon, Coale and Copple<sup>480</sup> had selected the top and bottom ten of 176 freshmen at Colorado State College according to their scores on M.M.P.I. and M.T.A.I. These twenty were given a new battery of tests. Edwards P.P.S. showed the high group to have higher needs for dominance and lower needs for aggression when compared with the low group. However this finding was reversed on their T.A.T. scores.

Scandrette<sup>466</sup> summarised various researches which used

E.P.P.S. and found teachers to be higher than the norm as follows:

- Elementary teachers - deference, order, endurance (Jackson & Guba 1957)
- Primary and secondary - deference, order, endurance (Tobin 1956)
- P.E. student teachers - deference, order, endurance, exhibitionism, dominance (Thorpe 1958)
- Female secondary - deference, order, achievement (Jackson & Guba 1957)
- Female Elem. Students - deference, order, affiliation (Scandrette 1962)
- Female Secondary Students - order, dominance (Scandrette 1962)

They were lower than the norm for:

Exhibition, autonomy, dominance, heterosexuality and change according to Guba and Jackson;

Aggression, dominance and heterosexuality according to Tobin;

Autonomy, change, abasement and heterosexuality according to Thorpe;

Autonomy and aggression at the elementary level according to

Scandrette and

Affiliation and succorance at the secondary level according to

Scandrette.

Gillis<sup>214</sup> interprets the E.P.P.S. findings of Jackson and Guba as showing that the Chicago teachers were close to their public stereotype of being sexually impotent, obsequious, eternally patient,

painstaking, demanding and socially inept.

Adams, Blood and Taylor<sup>214</sup> in a research using E.P.P.S. found experienced teachers were more docile than education students who were in turn more docile than arts or science students, a finding supported by Book, Linden and McKay in 1961 not only from their E.P.P.S. findings but also from results obtained from scores on the Guilford-Zimmerman Temperament Survey.

"Eysenck's Maudsley Personality Inventory". Sultan,<sup>519</sup> Jenkins<sup>285</sup> and Solomon<sup>496</sup> all used this test as part of their respective batteries given to students at St. Katherine's College, Cardiff College and the West Riding Day College. Their various reports all suggest that on this test student teachers match the normal standardisation population fairly closely. Davies<sup>137</sup> concluded at Birmingham University that ~~it had been~~ of no value as a predictor of the teaching marks obtained by 202 student teachers.

"Heston's Personal Adjust Scale" showed no difference between those student teachers who initially said they wanted to teach but changed their minds and those who continued to prepare for teaching, according to Durflinger,<sup>164</sup> nor did another group differ from the standardisation population,<sup>163</sup> again according to Durflinger. However, R. C. Aden<sup>2</sup> found that of 211 student teachers at North Texas State University those majoring in the teaching of business education had a lower mean than those majoring in languages, mathematics, science or fine arts, and a significantly lower mean than those majoring in social studies, health and P.E., and

industrial arts.

The "Humm, Wadsworth Temperament Scale" was used by Grieder and Newburn<sup>656</sup> who reported that students rated by the test as paranoid, manic, depressed or autistic were usually rated higher than others as teachers. A conclusion not generally supported by other researchers, using other tests.

"Kaplan's Teacher Attitude Inventory" was used by Gullion and Pierce Jone<sup>233</sup> in conjunction with the M.M.P.I. on 125 women teachers attending three summer school sessions at Oregon Colleges. Those who had difficulty in their professional relationships and adjustment to the role of teacher tended to be the ones with personality problems, showing more hypochondriac, psychosthenic, schizoid and hypomanic patterns than those with no professional difficulties. The authors suggest that adjustment as a teacher depends on ability to adjust as a person.

"Kudar Preference Scale" was used by Tarpey<sup>524</sup> who found no significant correlations between any of the subscales and teaching practice for two of her four college samples but college No. 1 produced a significant negative relationship between the persuasive/ clerical scale and teaching practice marks, whilst college No. 4 produced a significant negative relationship between the music scale and teaching practice marks and a positive significant relationship between the mechanical interest scale and teaching practice marks. Tarpey agreed generally with K. M. Evans that the scale

was of little prognostic value. But went on to write that if the tests were good then they should predict good teachers (without saying why) and so concluded that perhaps the criterion of teaching practice marks is unreliable.

"The Minnesota Multiphasic Personality Inventory". Moore and Cole<sup>363</sup> used this well known test as part of a battery on 127 student elementary teachers. They were grouped according to their teaching practice marks into the top and bottom 10%, the next two groups of 20% and the middle 40%. They claimed that the Hs, D, Hy, Pr, Sc, and K scales all showed marked differences between the groups. In another research using both M.M.P.I. and Rorschach David Cole<sup>97</sup> got a multiple correlation of +.65 with the teaching mark awarded to 120 teachers by one observer.

Wilks and Edson<sup>597</sup> did not find any significant correlations for the 36 women they studied at Minnesota College of Education, reporting that they appeared to be a representative sample on M.M.P.I. Gullion and Pierce-Jones<sup>233</sup> as previously mentioned used M.M.P.I. and found that it isolated certain common personality problems for those teachers having difficulty in making professional adjustments.

"The Manifold Interest Scale" was used by Heil and Washburne<sup>253</sup> who studied the teachers and pupils in 45 Brooklyn classes during 1958/59. They found a highly significant relationship between

the teacher's score on M.I.S. and the amount of pupil progress during the year.

"The Pudishill Scale for the Measurement of the Personality of Elementary School Teachers" was one of a battery of tests used by Gotham<sup>221</sup> to measure the relationship between teacher personality and pupil gain. None of the tests showed a significant relationship between the facets of personality they claimed to measure and the pupil's progress.

"Rorchach" was used by G. B. Johnson<sup>286</sup> on 13 volunteer high school teachers and provided him with a correlation of  $+0.608$  (significant beyond the 0.05 level) with an assessment of their teaching ability. Interestingly for the same teachers he got a negative correlation of  $-0.51$  between age and teaching effectiveness which suggested to him that teachers accumulate personality problems which interfere with their teaching efficiency as they grow older. David Cole,<sup>97</sup> as previously mentioned, got a multiple correlation of  $+0.65$  when Rorchach and M.M.P.I. were used as predictors of the teaching ability of 120 teachers.

"Strong's Vocational Interest Blank" was used as part of Wilk and Edson's<sup>597</sup> battery of tests at Minnesota College of Education, the 36 women tested appeared to be a representative sample of people. Durflinger<sup>163</sup> agreed with this finding when he gave the S.V.I.B. to 150 student teachers. In another research<sup>164</sup> he found that students who had left university before completing their course of study on other than academic grounds, and who had

originally indicated they wanted to enter teaching had significantly different interest profiles from those who finished their university course or who were excluded because of poor work. Typically their interests were 'non-people' oriented. They eventually chose vocations which avoided working with people and on the M.T.A.I. the level of significant difference between their scores and those who qualified as teachers was significant beyond the 0.01 level.

"Thurstone's Temperament Scale." was used by Ryans<sup>462</sup> to compare the top and bottom 27% on each of the X<sub>o</sub>, Y<sub>o</sub>, and Z<sub>o</sub> scales. On the X<sub>o</sub> scale the top 27% gained significantly higher scores for impulsiveness, dominance and sociability than the bottom 27%. On the Z<sub>o</sub> scale the top 27% scored significantly higher for impulsive, dominant, vigorous behaviour.

"Thurstone's Personality Schedule" was used by Peck<sup>496</sup> in 1963 to compare 100 women teachers with samples of men teachers and women student teachers. The women teachers were not as well adjusted as the men or the students, "one third were definitely maladjusted, one sixth in need of psychiatric advice and only one fifth could be classified as well adjusted".

"Thematic Apperception Test". Sheldon, Coale and Copple<sup>480</sup> as previously mentioned selected the bottom and top ten out of 176 freshmen in general psychology at Colorado State College as a result of their M.T.A.I. and M.H.P.I. scores. On T.A.T. the high ten had significantly less need for dominance but a higher

need for aggression. This result was reversed on the Edwards P.P.S.

Burkard<sup>68</sup> found that when 300 religious women, teaching a total of 10,720 pupils in grades four to twelve, were rated by their pupils for excellence of teaching and likeability those rated high and those rated low were significantly different from each other in their responses to T.A.T. Those rated high by their pupils responded to life realistically and constructively. Those rated low did not, the difference was significant beyond the 0.001 level.

G. B. Johnson<sup>286</sup> got a significant correlation, beyond the 0.01 level of +.75 between the assessment of teaching ability for 13 volunteer high school teachers and their T.A.T. profiles. When he repeated the experiment with 26 elementary teachers he again got a correlation which at +0.5403 was significant beyond the 0.01 level.

Many other tests have been used, indeed it is probably fairly close to the truth to say that most tests at sometime have been used by someone either to compare groups of teachers with the population or to compare two different groups. Briefly they fall into two categories:

One those showing little or no difference between teachers and the normal population. These include Zimile's<sup>625</sup> use of the Cartoon Situation Test and the Draw a teacher test to 145 seniors in 6 New York Colleges; Gothan's<sup>221</sup>

use of the Washburne Social Adjustment Inventory; Sultan's<sup>519</sup> use of the Public Opinion Inventory and Guilford's Impossibilities test; Rabinowitz and Rosenbaum's<sup>429</sup> use of Sims Social Rating Scale on 1600 student teachers; Moore and Coles<sup>363</sup> use of Gowan's Teacher Prognosis Scale, Taylor's Manifest Anxiety Scale and Marsh's Sexual Deviant Scale on 127 elementary student teachers; Durflingers<sup>163</sup> use of the 'How I teach' Scale, the Personal/Social subscale of Roedar's Occupational Aptitude Test and the Elementary Teachers Scale on 150 student teachers.

Two: Those showing a significant difference between groups of teachers or between teachers and the normal population. Zimiles<sup>625</sup> found that the sentence completion test produced significant correlations between the responses from the 145 students and their teaching practice marks. Dandes<sup>135</sup> got a clearly significant relationship between attitudes regarded as desirable in effective teachers and psychological health as measured by Shastron's Personal Orientation Inventory for the 121 out of 223 New York State teachers who returned their questionnaires. Jenkins<sup>285</sup> found that the emotionally mature students at Cardiff College of Education as measured by Pitt's Test were significantly better at academic work and were known by significantly less people in their college, however they did not differ from the rest when their teaching practice marks were compared.

Gilles<sup>214</sup> took a sample of 1080 out of 4518 students at a large mid-western institution for teacher training. 701 completed

the questionnaire. Compared with the norm group they showed less need for intellectualism but more need for dependency relationships. Gilles concluded that student teachers differed significantly from other college populations.

Kakkar and Gordon<sup>293</sup> found that Indian, Japanese and American teachers appeared to share similar values. They used the Survey of Interpersonal Values on 50 male and 50 female Indian students and compared the results with earlier American and Japanese findings using the same tool. The 100 students were selected from 205 in the senior class at the Government Training College for Teachers. Each was evaluated by tutors with at least 5 years of college experience. Each evaluation of two lessons at a time had a gap of a fortnight. They found that student teachers rated as effective received little support. They were high on benevolence, low on conformity and high on independence. Males rated as effective teachers also tended to be high on leadership as measured by the S.I.V.

Another group of researches into the personality of teachers is formed when we consider those reports which have either neglected to mention the tools they used or appear to have used a subjective estimate of the student/teacher's personality. These include the American researches of Simon<sup>438</sup> who found that the most frequently given reasons for 2000 teachers being dismissed were weak discipline and difficient personality. Laycock and later Maple found no correlation between

personality test scores and teaching practice marks.

Coombs<sup>24</sup> in 1965 concluded that several studies suggest that good teachers typically

- a) Identified with people rather than felt separate from them
- b) feel basically adequate and able to cope with problems
- c) feel trustworthy, reliable and dependable
- d) feel wanted rather than unwanted
- e) see themselves as worthy, people of consequence, dignity and integrity.

He concluded therefore that they are probably not unlike any healthy bricklayer, doctor, etc. for personality.

Duggan<sup>165</sup> in 1961 pointed out that of the thousands of studies carried out not one single factor significantly predicted teaching competence. Unselfishness and mental stability have not, he claims, been proved necessary for effective teaching and this fact comes as a surprise only to educators.

Omer Pupiper<sup>427</sup> conducted a study to determine the level of scholastic aptitude, interests and personality traits of experienced teachers on advanced degree courses at the University of Oklahoma. No dominant personality characteristics emerged and he concluded that the subjects studied were not essentially different from people in general.

Goodenough, Fuller and Olsen<sup>579</sup> found that high ratings for kindness, patience, cooperativeness and sympathy were most often

associated with effective discipline. Hilton and Leiderman in 1957 found that this type of person caused more pupils to become involved in self initiated and required work. Schwartz<sup>656</sup> quotes T. P. Lins as finding no significant relationship between measures of personality and teaching practice marks for 58 Wisconsin women; Jones as getting similar results for 65 women; Riedgiger and Strayer as getting a correlation between teaching effectiveness and strength of personality at  $+0.46$ , Odweller as getting a correlation of  $+0.825$  for teaching ability against personality as judged by principals and supervisors and  $+0.533$  when judged by the peers of the 560 he studied, Seagoe as getting a correlation of  $0.54$  for ratings of personality and teaching effectiveness for 25 teachers.

Gotham was also reported as finding little relationship between teaching ability and personality; Mason as finding that 700 teachers receiving mental hospital treatment had a severe lack of interests; whilst Symonds had found that maladjusted teachers were likely to have an unfavourable attitude towards teaching; a finding which Leeds supported with a correlation of  $+0.433$  between teachers attitudes towards teaching and children and ratings of "good" or "bad" for the 200 teachers (100 of each) who were studied.

Theron Alexander<sup>412</sup> showed that teachers who devalued themselves or showed anxiety and conflict were often unable to show necessary levels of affection when dealing with children.

Phillips and Greene<sup>176</sup> found that contented people tended to have some form of hobby which Retan showed included teachers, the well adjusted ones tending to have varied interests; which McClear, Kratz, Jersild and Dolch showed in their various researches was a trait which children preferred to find existing in their teachers.

Jasper in 1958 showed that extreme self-concept scores exhibited by student teachers were related to defensive manoeuvres but there was a positive relationship between their self concept and their perception of their teaching experience.

Finally amongst the American researches and reviews is the work by Barr<sup>496</sup> and others published in 1948. They broke various studies down into traits investigated and whether or not a relationship with teaching ability had been discovered. The following is a brief digest of their findings:-

Trait assessed	Finding (direction of relationship with teaching ability)		
	Positive	Negative	No relationship
Resourcefulness Originality etc.	8	-	-
Intelligence	41	1	6
Emotional Stability	33	0	13
Considerateness	38	0	3
Buoyancy	42	0	1
Objectivity	26	0	1
Drive	19	0	0

Continued

Dominance	24	0	9
Reliability	28	0	0
General Personality	34	0	2
Attractiveness	27	0	0
Scholarship	51	11	3

British evidence where the tools used to estimate personality are unnamed comes from E. Evans<sup>179</sup> at Southampton University who found no difference in the emotional stability of training college students and undergraduates at Southampton University and allied colleges.

Warburton<sup>179</sup> concluded that attainment, general culture, stability, academic interests and social activities were better predictors of the teaching practice marks obtained by graduates than measures of ability, extraversion intraversion, aesthetic values or social background.

Herbert and Turnbull<sup>258</sup> have written that while gross physical defect is undesirable and that well informed scholarly people seem more successful than others in teaching, the accepted belief that emotional stability would seem to be a useful attribute has not yet received much support from the results of attitude and personality tests.

Katherine Evans<sup>182</sup> found that teachers with several interests tended to be better adjusted than those with few or none but that mostly little relationship appeared to exist between assessment

of personality and teaching efficiency except where gross disturbance is present. She concluded that there is no one type of successful teacher. Jenkins<sup>285</sup> who some twenty years later thanked Katherine Evans for her help in his researches attributes the same conclusion to Vernon and adds that current research results appear to support this suggestion. One reason may be, despite the several researches showing that personality is relatively stable over long periods, that, as Cronbach and Vernon<sup>517</sup> have both pointed out, personality can alter in altered conditions. Another lies perhaps in the all too ready assumption by many researchers that the test they have used does in fact measure those facets of personality which it claims to measure or alternately that the original standardisation sample was in fact a truly representative sample. An even more frequent failing would seem to be the reliance placed on the often low proportion of people in the original sample who actually complete a set of questionnaires or personality profiles or who volunteered to do so. Thus G. B. Johnson<sup>286</sup> got his T.A.T./teaching ability correlations from 13 volunteers; Gilles<sup>214</sup> got 701 returned questionnaires out of a sample of 1080 drawn from a population of 4518 which is a 62½% return of the sample and assumes that in the first place the 1080 were a totally representative sample. Generally the questionnaire returners are shown to be statistically no different to the original full sample on some factor other than personality. This factor is often the criterion, in research on teaching, of teaching ability.

Another example taken from British research can be seen in Start's<sup>510</sup> use of Cattell's 16 P.F. in one secondary school. 4 teachers refused to complete the form. Start reported that they did not appear to be significantly different from the rest of the staff except that they were somewhat less friendly. In all these cases something makes the people who refuse to cooperate, or forget to return a form, different. Is it a higher level of fear, poranoia, insecurity? Are they really no different from those who conversely volunteer to be probed; give hours to filling in questionnaires or allow observers to sit in their classrooms?

Intelligence Quotient, a further measure of personality.

Considerable discussion exists as to exactly what it is that I.Q. tests really measure. Sir Cyril Burt, by no means alone, keeps alive the discussions as to the relative contribution which inheritance and experience play in intelligence. However probably very few people would argue with the suggestion that in general some people are more successful in grappling with both the every day problems of life and with more abstract and academic problems which they may meet. These same people tend to do better at getting high scores on conventional I.Q. tests. As a result we tend to expect the person of high I.Q. to be an "high flier" academically and careerwise. More often this expectation is right than wrong. In teaching no exception exists. Correlations between I.Q. scores and measures of teaching competence are usually

positive albeit low. Some evidence to support this claim has already been presented in earlier chapters. Philip Vernon<sup>523</sup> in 1953 said that for a teacher to have an I.Q. below 110 was a handicap, but above that level it made no difference what it was. Cattell in his earlier British research found that the average I.Q. of student teachers was between 111.5 and 126. He claimed to have never found a successful teacher with an I.Q. below 100. Super and Crites obtained remarkably similar figures for teachers conscripted into the American forces during World War Two, with most I.Q.'s falling between 112 and 126.

Nandi<sup>386</sup> got a correlation of almost zero at +0.04 between Otis I.Q. and the teaching practice mark awarded to 284 students on an emergency training course shortly after World War Two.

Uttley<sup>565</sup> gave N.I.I.P. 33 to student teachers in 1949 and found the mean score to be 134.96. The correlation between this highly verbal test and teaching practice results was +.19 which Uttley reported as being non significant. Uttley concluded that although high intelligence was necessary in order to do well on teaching practice it did not ensure a good practice mark.

Tarpey<sup>523</sup> got various correlations for AH5 scores and teaching practice marks for students at four colleges in Ireland and England. At college No. 1 for 28 students  $r$  was +.253, at college No. 2 for 31 students  $r = 0.015$  at college 3 with 39 students  $r = -0.113$  and at college 4 with 30 students  $r = +0.287$ .

In her article in the British Journal of Educational Psychology Tarpey<sup>524</sup> goes on to point out that although these

correlations were insignificant, when the four who failed teaching practice and the five who got "A's" were compared, there was a considerable difference. The "failures" got an AH5 mean score of 24.5 and the 5 who were awarded "A" had a mean score of 28.3. Unfortunately no further data allowing the level, if any, of significance to be calculated was provided.

A. D. Walters<sup>584</sup> used the Otis I.Q. test to compare scores with the teaching marks of three years of entering student teachers. His results were as follows:

1951-53 students (N = 116) correlation between Otis and T.P. = +.11  
 1952-54 students (N = 125) correlation between Otis and T.P. = -.01  
 1953-55 students (N = 125) correlation between Otis and T.P. = +0.03

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None of these reach a significant level.

Cortis<sup>115</sup> used Alice Heim's AH5 and Warburton's adaptation of Thurstone's P.M.A. as one predictor of teaching practice results for 259 students at 3 Manchester Colleges. None of his correlations were significant.

Katherine Evans<sup>181</sup> used a Moray House Adult Intelligence Test and Raven's Progressive Matrices to predict future results for 109 graduates on a P.G.C.E. course. Neither predicted T.P. results but both predicted the final education mark beyond the 0.05 level of significance.

Panton<sup>402</sup> in 1934 reported a correlation of only +0.01 between teaching practice marks and I.Q. for 49 students at Borough Road College but pointed out that 69% of students at Borough Road had

won scholarships to grammar schools when they were eleven years old. This pointer would tend to apply still in the 1940's, 1950's and for most counties the 1960's where most college students have come from grammar schools to which they gained a place at age eleven by showing themselves to be in the top 19% (national average) for eleven plus ability. This last factor and the findings of Cattell and Vernon would perhaps allow us to ignore the suggestion from Jackson<sup>285</sup> that people of mediocre intelligence are more successful as teachers because of their greater social competence especially as Gillis<sup>214</sup> found the teacher was stereotyped as socially inept.

In America Boardman<sup>656</sup> got a correlation of  $+0.258$  between a measure of I.Q. and a measure of general teaching ability for 157 teachers at 4 high schools. This is significant well beyond the 0.01 level. Boyce got a correlation of  $+0.65$  between ratings of teaching ability and intellectual ability, whilst Crocker<sup>123</sup> in 1966 reported a correlation for 65 seniors in Education at the University of North Carolina of  $-0.05$  between their practice teaching grades and scores on the Ohio State Psychological Examination.

## Brief Summary of Chapter Four

Ballard 45 years ago wrote that lack of efficiency rather than lack of personality was the cause of teacher failure, yet teachers cling to "Personality" as being a source of their success. Several researchers have shown teacher personality to have temporary or permanent effects upon the children in their care. Others have shown that no one personality type of teacher suits all children and a mass of researches tend to lead one eventually to the conclusion that teachers are a representative sample of all personality types found in society at large. This lack of ability to discover significant personality traits unique to good teachers may be the result of poor sampling or even a lack of adequate tests. When intelligence was the facet of personality investigated again generally low, insignificant but usually positive correlations were found to exist. It is often suggested that this is due to the fact that entrants to teaching are already highly selected for ability and so most are above some cut off level (suggested to be around I.Q. = 110) above which I.Q. has little relation to teaching ability.

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## Chapter Five

### Attitudes towards Education and Children as a Facet of Teacher Personality

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## Introduction

Our attitudes are coloured and shaped by our experiences. As such they can be altered by new experiences. The measurement of attitudes is believed to provide valuable information as to underlying personality traits. Attitudes in certain circumstances can alter dramatically without the basic personality structure also undergoing any such change according to K. M. Evans<sup>186</sup>, who used the Allport-Vernon 'Study of values' and the Minnesota Teacher Attitude Inventory on 32 men and 46 women studying for a P.G.C.E. during 1965/66. Their scores on the Allport-Vernon remained fairly stable over the year, whilst their scores on M.T.A.I. altered significantly (0.01) between the beginning and end of the year. This may, of course, be because the two tests measure virtually unrelated facets of personality, or it may be that responses to the M.T.A.I. were much more a measure of intellectual knowledge and level of awareness of what constitute acceptable responses. Evans had concluded that attitudes can alter without the basic personality structure altering.

According to Hornsey<sup>271</sup> Solomon's researches in 1963 would tend to refute the first of these suggestions that possibly attitudes as measured by M.T.A.I. are unrelated to other aspects of personality. Hornsey showed that in Solomon's sample those holding authoritarian views as measured by M.T.A.I. changed their opinions more than those holding non authoritarian views, thus suggesting that the authoritarians

had been more affected by conformity pressures. However it would seem that an equally likely interpretation is the fact that the non authoritarians were initially closer to the views held by their tutors and so had less need to change because they would have felt less subjected to pressure. Vidulich and Kaiman in 1961<sup>271</sup> showed quite convincingly with a group of head teachers that authoritarians were much more likely to have their opinions altered by a person of high status than by a person of low status. (This they did by introducing a post Ph.D. educational researcher to one group of head's with his correct title and description and to another as an high school boy waiting to go to college. In both cases he read the same paper and the heads' acceptance or rejection of his ideas was then measured via a questionnaire.) In his own research Hornsey found also that the 24 highly dogmatic students, from an original group of 194, were much more likely to conform, and so yield to conformity pressures, than were the 24 students low on dogmatism.

Sigmund Tobias<sup>549</sup> reported in 1968 that teachers' attitudes towards educational innovation were dependant on whether they saw the innovation as a threat to themselves or their own status. If new apparatus included the word "tutor" or "teacher" they were immediately hostile to its use, effectiveness, etc. Their very attitudes tended to make for self fulfilling prophesies of "no good", if they were ever persuaded to try a negatively viewed technique or instrument for teaching purposes. Coming closer to the relationship between teachers and teaching, Wilson and Goethals<sup>602</sup> investigated 280 Boston teachers to

see whether there was any relationship between their educational attitudes and common factors in their personal backgrounds. Socio-economic background and sex of the teacher had little relationship but religion did. Protestant teachers were willing to leave policy making to their superiors but Roman Catholics wanted teachers to take the initiative in policy making. Teachers who had grown up in rural areas tended to be more individualistic and willing to take risks than teachers who had grown up in urban areas. A third factor which emerged was that teachers who had trained in Liberal Arts' Colleges were more concerned with guiding and assisting the learning process whilst teachers from Colleges of Education were more concerned with discipline and control.

Mabel Kissack<sup>305</sup> had been specifically concerned with this latter aspect of teacher attitudes. She found in her researches that there appeared to be no correlation between the level of intelligence shown by a teacher and his or her attitudes towards corporal punishment as a means of controlling pupil behaviour. Men tended to have more extreme attitudes than women which Kissack attributes to women's greater general conformity. She further found that students became more anti corporal punishment as their college careers progressed but in a follow up of those who entered infant schools considerable regression had occurred, especially if the teacher had a class of more than 40 pupils or taught in large-town schools.

Tolor and Lane<sup>551</sup> found that teacher's attitudes towards children's behaviour varied with age and experience. When teachers with an

average of 24.5 years experience were compared with another group who had had on average three years experience it was found that the younger teachers saw many more pathological signs of abnormality whilst the older teachers were closer to clinical psychologists in their assessment of the same set of behaviours. Tolor and Lane posed the question as to whether this was because those teachers who were less tolerant of children's behaviour tended to leave the profession.

A considerable number of researches have involved the use of teacher attitude tests and have tended to use one of two tests: Professor Oliver's, Manchester Opinions about Education, used almost exclusively in British researches; and the Minnesota Teacher Attitude Inventory which has been extensively administered both in America and Britain. Less well known are Evans, Steele's and Kerlinger's tests. The oldest of the tests discussed here is the Minnesota Teacher Attitude Inventory, although it is predated some years by the attitude scale developed by Yeager in 1935. Interest in teacher attitudes is much older than this, however, but undoubtedly attempts to measure teachers attitudes were stimulated by the 1933 report by Peterson<sup>399</sup>. This showed that teachers had attitudes about education, children, teaching, etc. which could be shown to be on a continuum which he called "traditional-progressive". Peterson found that progressive teachers tended to be younger, to have recently completed their educational course work, often to have Ph.D.'s and to be still connected

with universities. Koch in 1934 also stimulated interest when he reported that the more liberal teachers were (in terms of attitudes to children's freedom) the longer their training would have been. By the mid 1940's Cook, Leeds and Callis<sup>324</sup> had produced a 164 item inventory which they hoped would enable them to measure attitudes in teachers likely to cause ineffective learning, dying intellectual curiosity, distaste for school and unhealthy emotional experiences for their pupils. The test was given to 100 teachers rated as good and 100 teachers rated as poor. It was then revised and given to a further 100 teachers who had been randomly selected. The last group of teachers were then rated for teaching ability by their principals, pupils and one of the researchers. A multiple correlation of  $+0.594$  was obtained between the various measures.

Teachers who were aged under 40 scored significantly higher on the test than those over 40.

Teachers who were most disliked were described by pupils as fussy, angry and bossy.

The teachers who were most liked were described as kind, friendly, willing to help, able to explain and fair.

The final draft of the test contained 150 items. The person filling it in is faced with a statement followed by a forced choice from strongly agree, agree, undecided, disagree and strongly disagree. The widespread use to which it was put led A. S. Barr<sup>30</sup> to write that "It would appear from many studies that M.T.A.I. is well on its way to

being established as a predictor of teaching efficiency." Other writers were less certain.

Horn and Morrison<sup>270</sup> queried the author's statement that M.T.A.I. measures a single trait if only because more than one dimension is needed to describe the way teachers orientate themselves to differing class situations. They point out that Cattell and Horn in 1963 claimed to have discovered 20 facets to teacher personality whilst Ryans in 1960 reported nine. They therefore gave M.T.A.I. to 226 student teachers at the University of Denver and 8 at the University of West Texas. The results suggested to Horn and Morrison that M.T.A.I. sampled not one but five dimensions

- A. Liberal attitudes about what pupils should do versus 'ho nonsense' education factor
- B. Favourable versus unfavourable attitudes towards children factor
- C. Divergent behaviour should be punished factor
- D. Empathy with the child factor
- E. A sort of "the individual is a free, blythe, spirit" factor.

Professor Oliver<sup>399</sup> in 1962 queried the validity of the M.T.A.I. on the grounds that to score on several items involved agreeing with value judgements made by the authors and also in believing that progressive attitudes are more desirable on every issue.

Evans<sup>185</sup> after a careful scrutiny of the test pointed out that the authors count 275 of the responses as being positive, 149 as

neutral and 326 as being negative. This means that random/chance responses are more likely to produce a negative score. She demonstrated this by giving ten people the answer sheet only - i.e. no statements. They all finished with a negative score, the average being -15.7. Another problem was that respondees who agreed with the statements, no matter what they said, finished up being rated as a person likely to have good rapport with children.

Gage<sup>206</sup> also wrote of the lack of balance in M.T.A.I. with different weights being given to the various responses to different statements thus making a mean of zero unobtainable. He further points out that the standardisation population of 200 is too small to enable reliable scoring weights to be assigned.

Badd and Blakey<sup>67</sup> again point to low scores being more likely on the basis of chance alone. They further investigated the difference between the scores of 225 students of Western Washington University, by dividing them into two groups

1. those who generally gave a moderate response
2. those who generally opted for extreme responses.

The results showed that to be labelled as a potentially good teacher it paid to produce extreme responses.

Callis, one of the M.T.A.I. authors, claimed that it was only very slightly susceptible to faking but Rossi<sup>450</sup> and others feel this is because of the instructions which Callis gave when checking for fakeability. In testing M.T.A.I. for fakeability Callis had asked a group of students to try to get the highest possible score. Rossi

points out that that is what the students were normally trying to do. He then copied the techniques used by Rabinowitz; Stein and Hardy; Sheldon; Polmantien and Furguson; and Sorsenson and concluded that 272 students could fake their responses in order to get a "good" score. A typical example of fakeability testing of M.T.A.I. is that of Scott and Brinkley.<sup>470</sup> (This piece of research is also written up under Polmantier and Ferguson's<sup>416</sup> names in another journal.) They administered M.T.A.I. to 137 graduates attending the 1958 summer school at the University of Missouri. All had taught for at least 2 years. Three groups were then formed which did not differ from each other for M.T.A.I. scores obtained after being given standard instructions. Before being tested a second time the three groups were given different information and instructions:-

Group one was told what was regarded as being the behaviour of an authoritarian teacher and asked to obtain an authoritarian score.

Group two was told nothing and given standard instructions.

Group three was told what was regarded as being the behaviour of a progressive teacher and asked to obtain a progressive score.

The second group's score did not change significantly. The first group's scores fell significantly. The third group's scores rose significantly. The implication being the M.T.A.I. is a test which the testee can answer so as to produce the profile he desires to display to the testee.

Another problem with M.T.A.I. can be seen in Sheldon's<sup>480</sup>

finding that people who scored high marks on M.T.A.I. were significantly more intelligent, as measured by W.A.I.S., than those people who got low scores, suggesting ability to learn may affect the number of statements the student could interpret in the light of their current education courses.

In Britain another problem, perhaps resulting from differing values held in the two countries, is that the scores do not compare with the American norms. Evans<sup>181</sup> in 1958 wrote that her results for 109 graduates on a P.G.C.E. course did not compare with American or Canadian norms. Tarpey<sup>524</sup> in 1965 reported that she too got significantly lower scores, than the American norms, from her sample of students at four different colleges. Evans had added that faking of results seemed likely.

Kingston and Newsome<sup>305</sup> used the M.T.A.I. in conjunction with the Inventory of Classroom Administrative Philosophy and the Webster, Sandford Freeman Instrument for Studying Authoritarianism in Personality on 79 elementary teachers enrolled in a summer school workshop. All correlations were beyond the 0.01 level which the authors felt was accounted for by the similarity of test content. It can also be seen as supporting evidence for Professor Oliver's complaint that the M.T.A.I. is too value laden.

Despite the evidence condemning M.T.A.I. for various reasons, it is still a very widely used test. In 1965 the sixth Mental Measurements Year Book listed 155 reported researches in which it had been used.

Leeds<sup>106</sup> showed significant relationships between M.T.A.I. scores and personality attributes as measured by the Guilford Zummerman Temperament Scale. All but three of the sub scales produced significant relationships beyond the 0.01 level for 300 serving teachers. Ferguson with 117 student teachers got correlations in the same direction but of a lower level of significance, when he repeated the experiment. Cook<sup>106</sup> investigated a group of ex student teachers who were waiting for their first appointments to start and got correlations midway between those of Ferguson and those of Leeds. His conclusion that there may be personality change with increased participation in professional work would seem to be at variance with Katherine Evans' conclusion that attitudes and personality are probably unrelated.

Cambell and Horrocks<sup>76</sup> compared the M.T.A.I. scores of 127 Ohio State University College of Education students with the M.T.A.I. scores of their parents. They got the following correlations:-

Fathers with sons	+0.33	(N = 39)	sig. beyond 0.05 level
Mothers with sons	+0.19	(N = 39)	N.S.
Fathers with daughters	+0.15	(N = 88)	N.S.
Mothers with daughters	+0.37	(N = 88)	sig. beyond 0.01 level

They found that age as well as sex appeared to be a variable in the situation, whilst Krumboltz and Krumbolts<sup>659</sup> had shown that there was a tendency for eldest children to score higher on M.T.A.I. than subsequent children.

Lantz<sup>321</sup> gave the M.T.A.I. to 532 females at the University of

South Florida and compared the results with biographical data and scores on the Young, Torrance Life Expectancy Inventory. The upper and lower quartiles for M.T.A.I. scores were compared. No differences appeared to exist in scores which were related to the student's age, position in family relative to siblings, parents age at time of student's birth, religion, education or vocation of parents. Students with low M.T.A.I. scores reported their mother as having very few leisure time activities. Students with a large number of scientific books at home scored significantly higher on M.T.A.I. than those with few or none, these same students claimed to have mothers who encouraged independence. The low scorers were more likely to go to church and to have had family disagreement over their choice of career.

Wilbur Dutton<sup>167</sup> used the M.T.A.I. and the Pittsburgh version of Taylor's Manifest Anxiety Scale on 91 students at the University of California at Los Angeles. He found no support for the hypothesis that anxious students would have a greater change in score towards what they believed their tutors M.T.A.I. beliefs to be. Nor did he find relationship between M.T.A.I. scores and level of manifest anxiety. There was some support for the hypothesis that highly anxious students regarded youth more negatively than low anxiety level students, however this did not seem to affect their teaching detrimentally.

Dandes<sup>135</sup> found for 121 New York State teachers that there was a significant relationship between the teachers measured psychological health and attitudes specified by the M.T.A.I. as being characteristic

of effective teachers. This was especially true when the teacher saw himself as fulfilling his human potential.

Condell and Tonn<sup>105</sup> in a small research involving 57 students at Moorehead State College, Minnesota, found that the experienced teachers of mentally handicapped children, on a summer school course, had higher M.T.A.I. scores than experienced 'normal' school teachers on a summer course about mentally retarded children who in turn had higher scores than college juniors on an education course, entitled 'The handicapped child'.

Clansky<sup>86</sup> administered M.T.A.I. to students at the beginning and end of a course on child development. The more "democratic" students saw their tutor as a democratic person, the "authoritarian" students saw him as authoritarian. This would seem to be linked with the student's view of their parents. Ofchus and Gnagey<sup>396</sup> having found that 71 student teachers' ratings of their tutors for general permissiveness and attitudes was significantly related to their conception of their own parents for these traits. The student's own shift in attitude over one semester (approximately 17 weeks) did not seem to be related to their concept of their tutors attitudes.

With regard to the relationship between M.T.A.I. and marks awarded for teaching ability Medley<sup>349</sup> and others found that 49 teachers in 19 different schools in the New York area showed no relationship between the reading improvement of their pupils and M.T.A.I. scores once the children had been matched for basic ability. Interestingly, despite claims that problem solving ability develops in "democratic" classrooms, Medley found that the group problem solving ability of these children was related significantly to their reading ability.

But the M.T.A.I. assumes that "democratic" classroom practices are the desirable ones.

Tarpey<sup>524</sup> at two of the four colleges she covered in her researches got significant correlations between teaching practice marks and M.T.A.I. of +0.431 at college no. 2 and +0.33 at college no. 3 (N = 31 and 30). Rabinowitz and Rosenbaum<sup>429</sup> concluded from a follow up of students who had been given the M.T.A.I. whilst at college that it was unable to predict teacher/pupil rapport. Evans<sup>181</sup> and Jenkins<sup>285</sup> both reported, Evans for 109 P.G.C.E. students and Jenkins for 255 College of Education students, that M.T.A.I. scores did not predict teaching practice marks for British students. Jenkins added that the change in scores of the Cardiff students seemed to reflect their gain in knowledge rather than predict it. Conversely Herbert and Turnbull<sup>258</sup> reported in 1963 that for 499 students their M.T.A.I. scores predicted teaching practice marks at the 0.05 level of significance, thus suggesting that the test was a useful one in Britain if their evidence, rather than Evans', is to be accepted. In America Del<sup>143</sup> got a correlation of 0.47 between M.T.A.I. and an assessment of the teaching ability of a group of teachers; Wilk and Edson<sup>597</sup> found that student teachers with high M.T.A.I. scores and high course marks (G.P.A.) were comfortable enough in the classroom to be free in their actions; When Popham and Trimble<sup>421</sup> compared 72 "inferior" teachers with 72 regarded as "superior", (all graduates of Kansas State College and all matched for amount of education, subject taught, size of teaching practice school and age of children being taught) they found that the

inferior group had a mean M.T.A.I. score of 5.03 whilst the superior group had a mean score of 23.60 leading to the conclusion that M.T.A.I. could differentiate between inferior and superior student teachers; Harry Day<sup>142</sup> administered M.T.A.I. to 196 college students immediately after teaching practice and again one year later to 109 of the 196 when in their first posts, the two M.T.A.I. scores correlated at +.63 and the first M.T.A.I. predicted (for 70 upon whom complete data became available) the supervising teachers' assessments of the young teachers at  $r = +0.18$  which is not significant, it also predicted the school principal's rating at  $r = +0.28$  which exceeds the level needed for the 0.05 level of significance.

Evans<sup>187</sup> in 1969 reported on her use of the 'Study of Values' and M.T.A.I. with six small groups of students preparing for different careers. Neither, she felt, could be used as a selection device for choosing student teachers, as their attitudes towards children could not be distinguished from those of student engineers or student theologians.

#### Change in M.T.A.I. scores

Several studies have shown that students' scores become higher as they pass through college - Burl Brim<sup>59</sup> who tested 250 students at the University of Denver found that the early student days were the time of most rapid M.T.A.I. score change. The students attributed the change to the instruction they were receiving. Scott and Brinkley<sup>470</sup> who found that it changed during teaching practice and that the change depended on the attitudes of the supervising

teacher. The 47 who had M.T.A.I. scores, before the practice, which were lower than the scores obtained by their supervisors, raised their mean score significantly during the practice (N = 47). Only 8 of the 30 who had superior scores to those of their supervising teacher lost ground. K. M. Evans found that P.G.C.E. students increased the number of "rights" significantly (0.01 level) and decreased the number of "wrongs" also significantly (0.01) over the course of their post graduate training. G. D. Davies<sup>137</sup> found that third year men students scored higher than first year men students and third year women students scored higher than first year women students at a Birmingham College of Education although these differences were not significant. Callis<sup>658</sup> found that juniors in education courses at the University of Minnesota College of Education registered a significant positive score shift by the end of six months.

Callis also found that by the time these students had been teaching full time their scores were more or less back where they had originally started. This finding was supported by Beamer and Ledbetter<sup>32</sup> who found that scores dropped after the students left college and continued to drop for about five years. The scores of teachers in elementary schools dropped less than the scores of teachers in high schools. Harry Day<sup>141</sup> followed up 109 students who taught after leaving college and 37 who were not. He found that the "non" teachers scores only fell by an average of 1.5 points but those who had entered teaching showed a mean loss of 20 points. Harry Day concluded from this that attitudes formed prior to teaching

experience are unrealistic and so he recommends earlier contact with the classroom during training to avoid young teachers leaving the profession as a result of shock and disillusion. Perhaps the common practice of American students having one long block practice at the very end of their four years at college or university, unlike British Colleges, is one of the reasons for the disparity in the scores mentioned by Evans, Turnbull and Tarpey. Hoyt and Cook<sup>272</sup> found similarly to Beamer and Ledbetter that scores dropped to a lower level for high school teachers than they did for elementary teachers, however they further analysed their data on students who had qualified between 1953 and 1955 and so had between two and seven years teaching experience when retested. They concluded that those entering elementary education courses had higher initial scores than those entering high school courses of training. Both sets of scores supported Callis's finding that scores roughly returned to their starting point after teaching experience. Rabinowitz and Rosenbaum<sup>428</sup> found that teachers in urban schools showed a bigger drop in score than teachers in rural schools. They also found that the amount of decline in score depended upon the school in which they gained their early teaching experience. They analysed the responses to individual questions and concluded that very little change had occurred in responses to items reflecting cynicism, hostility and punitiveness. The decrease in scores was mainly due to a lesser likelihood of extreme responses being ticked (which Evans has shown affects M.T.A.I. score) and an increased emphasis on standards of work with limits to

behaviour in the classroom.

Kerlinger's E.S. VIII

By the middle 1950's Fred Kerlinger<sup>660 & 661</sup> was attempting to produce a new attitude test which unlike its predecessors could claim to have been built with regard paid to construct validity as well as predictive validity. He complained that empirical studies were rarely carried out if the predictive validity of the scale allowed the author to assume that it was measuring the factors he claimed for it. By 1959 Kerlinger published his test in which the various questions produced an additive score under two major headings, "Traditionalism" and "Progressivism". The items under these two headings produced a maximum correlation of  $+0.12$  and so Kerlinger was satisfied that they were measures of relatively independent traits and that every item eventually included in the test was measuring what it claimed to be measuring. The scale was then administered to three groups of people to check its predictive validity - 136 undergraduate education students, 157 graduate education students and 305 people outside the university. As predicted the two university groups had large "Progressive" means and small "Traditional" means thus ending with a positive score, whilst the outside group had the reverse and so finished with a negative score. Progressive scores did not differentiate between the two university groups but the Traditional scores differentiated significantly, so that the eventual total score also differentiated significantly. By 1967 Kerlinger<sup>302</sup> was writing that although many people might recoil

from the dichotomy implied in the use of the terms "progressivism" and "traditionalism", (which are often called "A" and "B" in his articles) nevertheless his various researches did suggest that the two factors are separate rather than the two extremes of a bipolar continuum as is implied by other scales. This would, if true, support the implication made by Dewey in 1902. By 1968 Kerlinger<sup>303</sup> was able to report on the results of the test being given to 3000 graduates in Education in New York, North Carolina, Texas, Indiana, Wisconsin and Michigan. A third scale allowed concepts of teacher excellence to be measured. Typically "progressive" person-oriented students saw 'sympathetic', 'warm' and 'friendly' as desirable teacher traits whilst traditionalists saw 'efficient', 'conscientious' and 'reliable' as desirable teacher traits. The correlations were usually modest but, because of the large numbers, significant well beyond the 0.01 level.

Marvin Sontag<sup>497</sup> gave Kerlinger's test to 250 teachers, half having had elementary experience and half secondary experience. From these he chose a) 32 who had progressive scores above Kerlinger's median and traditional scores below Kerlinger's median, b) 32 who had traditional scores above Kerlinger's median and progressive scores below Kerlinger's median, c) a third group of 16 who were above the median for both scales. He concluded that two factors emerged "Concern for students" and "structure and subject matter" which supported Kerlinger's belief of two separate factors. However by removing the 170 students with less than extreme scores, it could be

argued that his finding was inevitable as Chronbach has done when considering Getzels and Jackson's techniques in creativity.

In England Crocker gave Kerlinger's test to students some ten days after they entered Bede College, Durham, in 1965, prior to their receiving any lectures in education. The test was again given to the same students in 1968 just prior to their taking their final examinations. The scores were compared with each other, with the students' statements as to the type of school they wished to teach in and with teaching practice marks. Margaret Williamson<sup>650</sup> in 1969/1970 analysed the raw data. 199 students took the test initially. 50 took it finally. There appeared to be no significant difference between those who took the test twice and those who only took it once in as far as their initial scores were concerned. Over the three years the 50 students became significantly more progressive in their educational attitudes, although students over the age of 25 made less movement in this direction than the younger ones. When the top and bottom ten students for teaching marks were compared neither their initial nor final attitude scores showed a significant correlation with their teaching mark.

Katherine Evans<sup>180</sup> developed a test of attitudes in education as part of her M.A. thesis in 1946. She called it "Teachers and teaching". Primarily it was intended as a measure of attitude towards teaching as a career. She found that pupils with academic interests were more interested in teaching as a career than those with practical interests. She also used the test to compare the attitudes of 53 students at the beginning of their two year course at Leicester

Training College with those of 80 students starting a P.G.C.E. course at London. The attitudes of the P.G.C.E. students was significantly less favourable towards education than that of the certificate students. Katherine Evans wondered if many P.G.C.E. students agreed to enter teaching in order to get the grants to cover their degree studies.

Walters<sup>584</sup> used Evans' test at one of the colleges he sampled and for 46 students who entered the college in 1953 he got a non significant correlation of +0.13 between test scores and teaching practice marks.

Evans<sup>181</sup> in 1958 reported that none of the four tests she used, including her own 'Teachers and teaching', predicted the teaching practice marks of 109 P.G.C.E. students. In 1952<sup>656</sup> she also reported that it failed to predict the teaching marks of four groups of students, three taken from different training colleges and another being a group of post graduate student teachers.

The most frequently used British test appears to be the one developed by Professor Oliver and his colleagues at Manchester University. Writing in 1953<sup>398</sup> he pointed out that people differ in their opinion as to the aims, methods and curriculum of education whilst often also disagreeing about the fundamental nature of children. He believed that most ideas could be grouped under one of two headings "Idealism" and "Naturalism".

The idealist's believe that the universe is orderly with absolute standards of truth, goodness, beauty, etc. Education within

this concept is the development of personalities towards these absolute values.

Naturalists believe in the world of our senses, an orderly, but not stable, world - a world where life has evolved. Education in this world should be 'growth' of the child in a child centred school.

Oliver noted that in Britain educationists seem to be tender-minded rather than authoritarian, especially during the period they spend undergoing teacher training.

These very 'facts' caused Oliver<sup>399</sup> to criticise the Minnesota Teacher Attitude Inventory on the grounds that tenderminded, naturalistic progressive attitudes are not automatically the right ones but M.T.A.I. assumes that they are. Another area of knowledge which also worried Oliver had been exposed by Shapiro in 1952. He had found that parents who expressed more tolerant than average attitudes to the free expression of children's desires were more likely to vote Labour than Conservative. The concept of Naturalism-Idealism led to the "N" and "T" scales, this later concept of Radicalism led to the R scale of the Oliver-Manchester "Survey of Opinions about Education". Oliver and Oliver tested the three scales on 440 teachers who responded to a request for help. Random discard was applied so that the sample approximately fitted the Ministry of Education average figures for age, sex and type of school in which the teacher taught. This reduced the sample to 300. Practising Christian teachers emerged as significantly more tough-minded

than non Christians. Students were significantly more tender-minded than practising teachers.

Thompson<sup>539</sup> gave the test (amongst a group of other tests) to 138 students at Manchester who were studying for the 1956 P.G.C.E. He concluded from his results that women were significantly (0.01) more tenderminded than men and also held significantly (0.01) more progressive educational ideas than the men.

In a further report in 1968 Oliver and Butcher<sup>400</sup> report on 300 teachers given the Manchester Opinions about Education. They found once again that religious teachers were significantly (0.01) less naturalistic than non religious teachers. Grammar school teachers were also less naturalistic (0.05) than teachers in any other type of school. Labour voting teachers were significantly (0.01) more naturalistic than Conservative teachers. Not surprisingly they were also more radical than Conservative teachers. (0.01) They were also more radical than teachers who claimed to have no political sympathies. On the tenderminded scale labour teachers were more tenderminded than conservative or liberal teachers. Teachers over 50 years old were significantly (0.01) more tough minded than those under 50.

Butcher in 1965<sup>72</sup> continued to use the questionnaire to measure and describe differing samples of people when he compared 118 P.G.C.E. students at Manchester University with 20 students at Charlotte Mason College (the total first year), also the total first year at Padgate College and 300 experienced teachers in the Manchester area.

Teachers were significantly less naturalistic than students.

Training college students were significantly more radical than graduates who were in turn significantly more radical than serving teachers.

Training college students were significantly more tenderminded than graduate students or serving teachers.

All of the groups of student became more radical during their course. Morrison and McIntyre<sup>369</sup> followed up 100 teachers who had been given Oliver's test prior to entering teaching in 1964 and who had completed one year in the classroom. They found, similarly to M.T.A.I. based researches that scores decreased. Graduate women showed significant (0.01) decreases in scores on all three (N, R and T) scales whilst non graduate women showed significant (0.01) decreases on the R and T scales. The graduate men did not show a significant change. As with the M.T.A.I. findings, scores were approximately back where they had been when the teachers first entered college.

When McIntyre and Morrison<sup>383</sup> tried to use Oliver's test to predict the teaching practice marks of 430 students, either on the third year of their diploma (Scots equivalent of the English Certificate) course, on a P.G.C.E. course or on an advanced diploma course they found no significant correlations between any of the three scales and assessed teaching ability.

Solomon<sup>496</sup> gave Oliver's test to 155 students attending a West Riding Day College of Education. Only the Radicalism scale with a correlation of +0.164 gave a significant correlation with teaching

practice marks.

Cortis<sup>115</sup> gave the test to 259 students at three different Manchester colleges. For him Naturalism was the only scale to correlate significantly with teaching practice marks at  $r = +0.182$  (0.01 level). However Steele<sup>658</sup> was able to show a modest correlation of  $+0.185$  (0.05) between scores on the total test and teaching practice marks for 138 students who completed Oliver's test whilst on a college of education course.

This lack of predictive powers of either Evans' or Oliver's test is probably not surprising. Evans constructed her test to measure attitudes towards teaching as a career. Oliver's test was developed mainly as an instrument to enable descriptive analysis of teachers attitudes to be carried out.

Kerlinger's test has been used too little as a predictor of teaching marks to enable its possibilities to be assessed. Regularly positive correlations between assessed teaching ability and M.T.A.I. scores have been reported during the last twenty years. However this may be largely the result of self fulfilling prophesies coming true. Most modern educators believe that tenderminded, child centred attitudes and behaviour are the essence of good teaching. It is hardly surprising therefore that someone possessing those attitudes and putting them into practice in the classroom is labelled "a good teacher" despite the lack of concurrent evidence<sup>480</sup> that high scorers on "warm" teacher scales produce better results, in the long or short term, from their pupils.

## Brief Summary of Chapter Five

Some writers declare that attitudes can alter dramatically without any great personality change occurring, others totally disagree with this belief. Various tests have been created specifically with the purpose of measuring teachers attitudes. The most well known of these is the Minnesota Teacher Attitude Inventory. It is often criticised for its 'fakeability' in that people can alter their scores if told to 'become' a certain attitudinal type on paper. Nevertheless several studies have shown a relationship between M.T.A.I. scores and assessed teaching ability although this may be due to the high level of value judgement written into it. The lesser used tests of attitudes have tended to show lower correlations between scores and assessed teaching ability.

Conservative teachers, Roman Catholic teachers, Grammar School teachers and older teachers, on most of the attitude tests, have been shown to have a more rigid, traditional attitude towards education.

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## Chapter Six

Flexibility (Divergent Ability).

A necessary attribute in the teaching situation?

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Throughout an enormous volume of writings describing attributes a successful teacher must possess one of the most frequently used words has been "flexible" or the implication of flexibility in other words and phrases.

Flanders<sup>241</sup> in 1960 found that the most successful teachers tended to be those able to range across a continuum of behaviours, poor teachers always tended to use the same interaction style. Hamacheck in reporting this also found that a variety of researchers used the word 'flexible' more than any other adjective.

Church<sup>656</sup> as long ago as 1919 and again Bush in 1942 reported that whilst a large variety of people make successful teachers their success depended on ability to adapt to differing pupil needs.

Charters and Waples got 25 experts to rank 25 teacher traits essential to good teaching, 'adaptability' was top of the list. Evans quotes Daldy as having found that the teaching ability of domestic science teachers was affected by their adaptability. However I think Katherine Evans has misinterpreted Daldy's use of the word "adaptable". In her article "A study of adaptability in a group of teachers" Daldy<sup>130</sup> is quite clearly using the word to mean psychological stability in the sense "well adapted" to life rather than in the sense "able to adapt" to meet the needs of changing circumstances as the circumstances alter.

Ruediger and Strayer got a correlation of +.50 between a measure of initiative and an estimate of teacher effectiveness, Van Haden

similarly got a correlation of +0.513 (sig. beyond the 0.01 level) whilst Boyce got a correlation of +0.53 for the relationship between assessed teaching ability and 'adaptability' for a large number of teachers. Hampton got a correlation of +0.77 for the relationship between 'resourcefulness' and teaching marks. This corresponds with Katherine Evans own finding that 'resourcefulness correlated higher (at +0.37) with final teaching marks than any other measure'.

Panton<sup>402</sup> got a correlation of +0.45 (sig. beyond the .01 level) between an assessment of initiative for 49 students at Borough Road College and their teaching practice results.

Joyce and Hodges<sup>290</sup> in 1966 stated that "the teacher who can exhibit a wide variety of teaching styles is potentially able to accomplish more than a teacher whose repertoire is relatively limited".

In 1967 Hunt and Joyce<sup>277</sup> reported their attempt to test this hypothesis. They based their work on Travers' (1961) and Hughes' (1963) findings that "reflective" teaching styles are used much less frequently than "structured" teaching styles. Reflective teaching was described as 'using the learners frame of reference to encourage questioning, hypothesising, etc.', 'structured' teaching is traditional, teacher-centred teaching. Hunt and Joyce made a tentative assumption, based in part on Flanders 1960 research findings, that students who used the rarer, more difficult, reflective style would also be capable of using the structured style and so could be regarded as the more flexible teacher. For 14 female graduates on a Master of Teaching degree course they obtained a correlation of +0.578 (sig. beyond the

0.05 level) between rating of teaching ability and rating of flexibility and for 16 sophomores on practice teaching the same factors yielded a correlation of +0.497 (sig. at the 0.05 level) thus tending to support their hypothesis.

Goldman<sup>217</sup> introduces us to another word used more or less synonymously with flexible when he cites Baron's work as showing that people with 'closed' personalities were inhibited in situations requiring "creative" flexible behaviour. He points out that "we urge our students to become creative teachers, whatever that might mean, and encourage them to use creative methods in the classroom" yet researchers have shown that creative ability is more than cerebral, being affected by

- a) personality - emotions being involved, especially when the divergence of the behaviour runs counter to accepted practices
- b) the culture in which a person is reared, for some cultures are more permissive of divergence than others, education tending to be one of the influences for conformity which is brought to bear on the young, causing a reduction in spontaneity.

This ability to be spontaneous, seizing opportunities that present themselves in the classroom can be seen as part of the ability to be flexible. Flanders<sup>294</sup> had assumed that different learning situations would be enhanced by different types of teaching. In setting up a joint research in New Zealand and America he hypothesised that the tighter control of a teacher centred classroom would produce better pupil learning of subjects such as mathematics whilst a flexible

teaching situation would produce better pupil learning in areas such as social studies. There turned out to be no such difference. The most flexible teachers always got the best results, with all pupils, in all subjects in both countries.

Dasajh<sup>159</sup> believes that this essential ingredient can best be described as "imagination". He got an estimate of imaginative ability for two groups of Indian student teachers by using the Horn, Hellers-Berg test. For 133 student teachers the correlation between score and teaching practice was +0.71 (sig. beyond the 0.01 level) a second group of 123 students produced a correlation of +0.80.

Harvey used the words 'abstract' and 'concrete' to describe what were in effect 'flexible' and 'subject-centred' classrooms. The flexible teachers were regarded by two observers as clearly superior to the inflexible ones despite, (or perhaps because of?) their lesser teaching experience.

Norman Sprinthall<sup>505</sup> and his co-workers say that teacher competence/effectiveness is a dependent variable with cognitive flexibility/rigidity as one of the most important of the independent variables. They loosely define flexibility as follows:

'By this we mean the teacher's ability to think on his feet, to adapt teaching objectives, content and method in process, (i.e. in response to the reaction, learning difficulties and needs of the pupils). More broadly - cognitive flexibility refers to dimensions of openmindedness, adaptability, and resistance to premature perceptual closure... Flexibility implies brightness, creativity, divergent thinking.'

They further went on to describe the type of lesson planning to be found coming from the pens of flexible and rigid student teachers

## Flexible

Open ended lesson planning, considers alternate ways to communicate and/or relate to pupils. Can plan for the unexpected even when under stress. Cognitive processes appear fluid and unconstrained.

## Rigid

Dominated by lesson plan, plan is poor and use of time is poor, gets trapped in digression, cannot handle the unexpected especially under stress. Cognitive processes appear constrained and inhibited.

Whilst realising that teaching practice is a time of enormous strain Sprinthall etc. obviously believe this helps to sort the 'flexible' from the rigid when they go on to write that, on teaching practice "... competing stimuli are numerous. The choice of appropriate teaching context and method depend on careful assessment of these stimuli. In our view it is the cognitively flexible teacher who can do this with accuracy especially when under the stress of practice teaching".

<sup>505</sup> Sprinthall then set up a research programme to investigate this possibility. 28 student teachers were randomly selected from the Harvard Summer School of 1964 (Harvard student teachers were all above the 94th percentile for English and 82nd percentile for mathematics on the Graduate Record Examination). They were then given the Rorschach and Visual Impression Test - written version of T.A.T. - as measures of flexibility. Teaching performance was rated for cognitive style,

cognitive attitude towards pupils, cognitive attitude towards teaching, objectives, planning of content and methods used. Neither the student teachers nor their supervisors knew the purpose of the research. The correlation between predicted performance (from assessment of flexibility) and actual performance was +0.53 which was significant beyond the 0.01 level. When three groups were formed based on prediction of the 7 most rigid, 7 most flexible and 14 intermediate students Chi square showed a significant difference beyond the 0.001 level. The authors concluded that one of the most serious problems was the lack of behaviour change of those identified as most rigid despite "...intensive supervision by highly skilled master teachers... (they) showed little capacity to upset our predictions."

Turner<sup>559</sup> further supported this finding when he followed up three groups of newly qualified teachers all of whom attempted to achieve a permissive classroom atmosphere. One group at the end of their first year were rated as high quality and stayed in teaching for a second year. One group was rated as low quality but also stayed in teaching. The third group left during or at the end of the first year. Turner concluded that the difference between succeeding and failing appeared to depend upon the teacher's problem solving skill.

Problem solving ability had been investigated by Turner and Fattu<sup>558</sup> when they had given their own test of arithmetic problem solving ability and Wade's 'Problems in Teaching Reading' to 176 elementary teachers and 89 student teachers who had not yet taken

any language arts or methods courses. A significantly (0.02) larger proportion of teachers from small private institutions were in the bottom quartile for problem solving ability whilst evidence suggested that the better problem solvers moved from small schools to larger ones by the time they had had about five years' teaching experience. A finding which ties in with the Rostker La Dake group of researches reported earlier in this thesis. They had found that the teaching in small schools was significantly poorer than that found in large schools.

Knoell<sup>618</sup> in 1953 gave six tests of verbal fluency to a group of undergraduates and then followed up the 38 who entered secondary schools. Independent ratings of their teaching efficiency from observers, superintendents and principals correlated between +0.30 and +.40 with the verbal fluency scores. Yamamoto points out that Guilford has shown the close relationship between verbal fluency and creative thinking whilst Yamamoto<sup>621</sup> himself has shown that creative teachers show stronger theoretical orientations than do less creative teachers, a finding which finds agreement in McKinnons 1960 list of the characteristics of creative teachers, one of these being 'more concerned with meanings and implications rather than facts and details'. McKinnon also found creative teachers to be (1) self assertive and highly energetic (2) highly intelligent (3) relatively free from repression and supression (4) high on cognitive flexibility and verbal skill (5) independent in thought and action.

Jones<sup>496</sup> in 1956 had used a test of flexibility on 46 student teachers. 23 had been rated as "good" on teaching practice and 23 as

average. He found that the good teachers characteristically liked a rapid pace and also seemed to be more flexible in their numerical abilities.

J. S. Dlabel<sup>158</sup> found that a group of teachers who worked successfully with culturally deprived children in Chicago schools were superior to a group who had not worked with that type of child for 'tolerance', and 'flexibility' as measured by the California Psychological Inventory.

D. G. Ryans<sup>463</sup> reported that in 1518 elementary classes and 1911 secondary classes observed during the Teacher Characteristics Study a high positive correlation was found to exist between productive pupil behaviour and three facets of teacher behaviour. The productive pupil behaviour was described as alertness, participation, confidence, responsibility, etc. The three facets of teacher behaviour were (1) understanding and friendly (2) organised and businesslike (3) stimulating and original. In particular the last of these showed the highest zero order correlation with positive pupil behaviour at the secondary school level.

Brookhout<sup>54</sup> found that women P.E. teachers who presented their teaching as a series of problems which needed to be solved by the group, rather than those who gave advice, controlled, censured, persuaded and punished, tended to produce more pupil growth and less pupil defensiveness. She found her results supported the findings of Gibbs and of Todd. They had showed independently that first of these methods caused the number of class members who were unpopular with the rest to decrease.

Jesse Bond<sup>53</sup> selected 245 student teachers who got high scores for "creative" ability and compared them with a further 610 student teachers of lesser creative ability. All 855 were at the University of California at Los Angeles. Bond predicted that the 'creative' students would show superior ability at interpreting material for the pupils and in stimulating their curiosity. He believed that creative ability was the key differential factor between teachers labelled "good average" and those labelled "brilliant". During teaching practice over 93% of the creative students were rated by their supervisors as being superior teachers. The mean scores for the creative group was higher than the mean scores for the non creative group for 32 teacher traits which were measured, including very big differences for "resourcefulness" and "initiative".

In 1965 Crocker<sup>121</sup> gave an 18 item test of creativity to 64 seniors in education at the University of North Carolina. Shortly afterwards the students started their teaching practice. The correlation between teaching practice mark and score on the creativity test was +.302 which just fails to reach significance at the 0.01 level. Perhaps more important than the correlation for the total group of students was the finding that the worst performers on the test of creativity were the worst performers on teaching practice. No attempt was made to see whether this group was significantly different from the rest. It appeared however that the relationship between teaching performance and creativity score might be similar to that known to exist between teaching performance and I.Q., namely that a certain

minimum level appears necessary but above that point the relationship is much more random. Ginsberg and Whittemore<sup>215</sup> would disagree with this on the grounds that of 292 freshmen at the University of Nevada in September 1965 those with very high I.Q. scores failed to be more random in their creativity scores than did those with low I.Q. scores. However it would seem that Ginsberg and Whittmore have ignored the fact that entrants to university are not a representative cross section of the population for ability as measured by I.Q. tests (Even in America only one third of the population enter post secondary education.) Cameron<sup>75</sup> appears to agree with Crocker when he writes "several studies suggest that an I.Q. threshold appears to exist above which creativity can appear". Hollands<sup>608</sup> accepts that the relationship only becomes insignificant at high levels of aptitude. Burt and Thorndike have both shown a consistent positive relationship between measures of creativity and measures of I.Q. if the whole I.Q. range is included in a study. Reed, King and Wickwire<sup>433</sup> showed that children regarded as creatively superior were also significantly superior on almost all cognitive variables. Indeed as Ohnmacht<sup>397</sup> declares 'the lack of relationship only appears when researchers have deliberately removed the complete range of talent'. He goes on to write "If an investigator selects only two groups, one with low creativity and high I.Q. and the other the reverse of this, with approximately equal numbers in each group, a pooling of these groups can be expected to give correlations around zero.

Broudy<sup>669</sup> gave Mednicks Remote Association Test (RAT) as a

measure of creativity to 45 student teachers prior to their teaching practice in several New Jersey Schools. They taught a total of 1863 secondary age pupils. 23 were selected as the "high" group for creativity scores. R.A.T. was also given to the pupils. The pupils rated the student teacher on a five point scale from 1 = Excellent to 5 = poor. The student teachers were also administered the "College Entrance Examination Board Verbal Test" as a measure of intelligence.

Those students rated high or low on both the C.E.E.B. (verbal) and R.A.T. were rated significantly more favourably by pupils high on creativity and by pupils rated high for social status than were the student teachers rated high for only one of these attributes. Broudy interpretes this in the light of Wallach and Kogan's finding that 'lows' on both tended to compensate by active social relations whilst 'highs' on creativity only tended to be isolated by their peers and 'highs' on I.Q. tended to isolate themselves from their peers.

Torrance<sup>670</sup> Tan and Allman attempted to predict the teaching behaviour of 325 elementary teachers from their scores on the Torrance Creativity Test. The 114 who returned questionnaires six years later were given the Tan check list of teacher behaviours. The top and bottom 27% for creativity scores were compared for their Tan scores. Those identified as highly original students appeared, six years later, to be living more fully, to show a high lack of compulsivity and to be neither conforming or non conforming all the time. They also appeared to be more fully involved in their teaching and more creative in the classroom than those rated as low on originality. There was no

evidence to suggest they had become wild, upsetting teachers. More than the less creative teachers they appeared to have continued learning both informally and formally. They also appeared to be full of ideas although they were more reluctant than their less creative peers when it came to making suggestions to their superiors.

In the last few pages a large number of different words have been used to describe "essential" attributes of the good teacher: abstract, adaptable, creative, has divergent ability, flexible, imaginative, shows ingenuity, displays initiative, open minded, original, has problem solving ability, and is resourceful. In everyday language these terms are not all used synonymously by any means. To describe ~~someone as~~ 'adaptable' does not automatically conjure up the same image as it does when we use the word 'imaginative'. However in educational language many of these words are used more or less synonymously, thus Charters and Waples<sup>656</sup> see resourcefulness and imaginativeness as bracketed together whilst Lynch<sup>342</sup> sees the words creative, purposeful, problem solving and adaptability as being put to the same use. Parnes<sup>403</sup> talks of creativity and problem solving and Barr<sup>656</sup> of originality, creativeness and initiativeness as being used synonymously. Styles<sup>514</sup> says that creative teaching is characterised by inspiration, imagination, ingenuity and initiative. Sprinthall<sup>505</sup> feels that flexibility implies creativity and divergent thinking and that open mindedness as used by Rokeach also has the same meaning. Anderson<sup>15</sup> talks of factor analysis leading his team to the conclusion that creativity/divergent thinking ability is made up of fluency, flexibility,

originality and the ability to elaborate. H. G. Cooper<sup>109</sup> writes 'that psychological studies suggest that creativity is problem solving ability and so equivalent to the highest level of learning. (This is acceptable if we accept the Gagneian model of learning.) When looking through this group of terms two stand out. "Divergent abilities" is the only one not in common everyday usage, and "creativity" in its everyday usage does not seem to belong with the rest. "Creative" in lay language is applied to the artistic processes of the painter, sculptor, musician, etc.

What is it about these two terms that enables them to be included with the rest? Creative, creativity, creative ability as terms were more or less taken for granted until the early 1950's. When used they were rarely defined, thus Sir Francis Galton in his study of Men of Genius met with no problems when describing great men as 'creative'. Sir Cyril Burt<sup>667</sup> was able to describe the creative imagination of Isaac Newton with little fear that his audience would misinterpret his meaning. Spearman<sup>139</sup> in 1929 was able to say to the World Congress of Psychology that psychology could give no adequate account of creativeness, again without fear of misinterpretation. Perhaps it should be added that he was also certain that it was merely another manifestation of "general" intelligence. Arthur Koestler<sup>312</sup> writing in 1964 continued to use the word with its traditional meaning, seeing creation as part of the process of seeing a familiar problem in a new light having tackled it via the code of rules which enabled similar problems to be successfully tackled in the past. Like Burt he sees

the ability to generalise and discriminate as part of the process and also like Burt he believes that creative work is always based on a background of previously acquired knowledge. L. L. Thurstone<sup>511</sup> suggested that creative talent for problem solving is only different from genius as a matter of degree and while it is not the same as intelligence it had strong positive links with it and thus he continued Spearman's earlier argument. John Dewey described the creative process as did Maier in 1934, 1943 and Wertheimer in 1945, all of them seeing it as a problem solving process. Hoffman<sup>264</sup> was more interested in the product, feeling that creation has occurred if the product is new for the individual regardless of how new it is to society. Paulston<sup>405</sup> writes about the value of the inborn creative attitude 'which is a personality trait all too often extinguished as a result of social and educational pressures'.

Once we reach the writings of Guilford<sup>15</sup> we start to reach the initiation of modern interest in 'Creativity'. Guilford distinguishes between "creativity" which he says is potential and 'creative productivity' which he says may or may not be useful. Getzels and Jackson<sup>210</sup> however can be easily identified as the 'coiners' of the word with its current meaning to educators. They asked the question "Can creative potential be identified before creative achievement?"

Guilford, Getzels and Jackson with their work in the 1950's caused an enormous educational upheaval. Guilford in 1951 had presented a paper in which he argued that the measurement of conventional I.Q. was only part of the necessary assessment of a person's worth. I.Q. scores

are a measure of a person's ability to conform or agree with the test writer's opinion as to what constitutes the correct answer to a series of problems. Guilford said this is a measure of a person's 'convergent' capacity.

However, many problems can be solved in more than one way; still others have had to wait until someone tried a different approach before they could be solved at all. The ability to tackle problems in a variety of ways is a measure of a person's 'divergent capacity'.

Guilford felt that divergent and convergent abilities were not present in some people and relatively absent in others but could be shown to be present in every person in varying degrees. The quantity of each being relatively unrelated to the quantity of the other. This led R. L. Thorndike<sup>541</sup> in 1962 to ask "what are they (the creativity measurers) measuring?" As far as Thorndike could see the major difference was merely that the testee had to produce as opposed to identify answers to a problem.

Although Guilford is identified as the 'father' of "creativity" research the term was popularised by Getzels and Jackson.<sup>210</sup> They took acceptance to the assumption that "gifted" was synonymous to "high I.Q." and said that despite significant transformations in our theories of cognition, our knowledge of learning and problem solving nevertheless the conceptual base of intelligence tests have remained unaltered. I.Q. tests as long ago as 1922 had been criticised by R. M. Simpson for lacking the power to test an individual's creative productivity and originality. Indeed the work of Andrews, Maier and McCoy had made

Dearborn's 1898 remarks that gifted intelligence and gifted creativity were not necessarily the same thing, a commonplace research finding.

Getzels and Jackson then postulated that there are two types of people.

- (1) The persons who are concerned with retention of the known, learning the predetermined and the conserving of these; people who primarily lean towards the usual and the expected.
- (2) The persons who are concerned with the revision of the known, explore the undetermined and construction of what might be.

These people lean towards the novel and speculative.

High scores on tests made to measure skills in the first group would lead to a "high I.Q." High scores on tests made to measure skills in the second group would lead to "high creativity". Getzels and Jackson went on to extract two groups of students one which they described as (1) high on I.Q. but low on creativity, the other (2) high on creativity but low on I.Q. Out of 533 middle class boys and girls in a private Chicago school 28 fitted the first group and 26 the second. Both groups were similar when compared for school achievement but were significantly superior (0.001) to the school population as a whole. In effect they felt this showed that children of low I.Q. could do extremely well academically if they were fortunate enough to have a compensatingly high creativity level.

Their work has been criticised by many authors. Firstly although described as a low I.Q. group the high creatives had a mean I.Q. of

127 and so were gifted children in the conventional I.Q. sense. Secondly they excluded from their study the majority of children who had in fact done well on both tests and so created artificially separate groups. Thirdly although they claimed the two factors of "I.Q." and "creativity" were relatively unrelated as shown by the low correlations between them they were no lower than the correlations between the various sub tests of creativity.<sup>577 175</sup>

Paul Torrance, one of the critics of the low correlations between the Getzels and Jackson sub tests produced the Minnesota Test of Creative Thinking. He had obtained correlations of  $+0.32$  between Otis I.Q. scores and Getzels and Jackson's test for the children at 8 different schools when he repeated their work.

Yamamoto<sup>619</sup> used Torrance's test on two groups of fifth grade children. One group contained 461 children the other 827 children. Although he noted a decrease in the size of the correlation with increased I.Q. his results led him to state that the idea of creativity being independent from other facets of intelligence was not supported. Hasan<sup>248</sup> studied 175 boys and girls in Edinburgh whose verbal reasoning quotients lay between 70 and 128 and found that creativity related to verbal reasoning quotient for this group at  $+0.743$ . When Dacy, Madaus and Allen<sup>129</sup> repeated the work with 182 Dublin secondary pupils using Torrance's test and AH4 they got the very different correlation of  $+0.08$  thus suggesting support for Getzels and Jackson's claims that they are different factors. Harvey and others<sup>665</sup> have recently criticised Torrance's test. The five

sub scales do not, according to them, yield independent measures of 'Fluency, Flexibility and Originality' as Torrance assumes, nor do their research findings support his second assumption that the scores from the five different tests may be combined to represent each of these three dimensions. Further factor analysis led Harvey etc. to conclude that "Fluency" and "Flexibility" as measured by Torrance's test are in fact one and not two factors.

El Meligi<sup>175</sup> in a London research criticised Getzels and Jackson's and also Sultan's work for the high I.Q. level of the sample and also for lack of normality in terms of their social background, and then curiously chose to use 104 comprehensive and grammar school sixth formers in which the high creative/low I.Q. group had a mean I.Q. of 120.83 claiming they were a more normal sample for I.Q. Twelve pupils were extracted as high I.Q./low creativity and twelve as high creativity/low I.Q. His results, he claimed, support the hypothesis that high I.Q. is not necessary for creative ability.

This type of claim has been heavily criticised by Cronbach<sup>126</sup> in that tests of creativity do not appear to measure or predict what is customarily meant by the label "creative", there being no evidence that children, who as a result of scores on these tests are labelled 'highly creative', produce works of superior quality to others. In England Townson<sup>553</sup> has produced evidence to support Cronbach's complaint. He studied 110 boys and 84 girls in the 3rd form of two Lancashire schools. Their ability to do

well on the test of creative ability bore little relationship to assessment of their performance in English, Art and various practical crafts although production in these areas did have a significant relationship to their measured I.Q.

Liam Hudson<sup>132</sup> is probably the British name which most readily springs to mind when creativity researchers are being considered. Along with many other writers he deplored the use of the word 'creative' by Getzels and Jackson, seeing no evidence to support the implicit claim in the word. Hudson throughout his work used the words 'converger' and 'divergent', thus reverting to Guilford's original terminology. His work developed from finding that Cambridge undergraduates did better on the non verbal section of intelligence tests if they were 'scientists' and better on the verbal sections if they were 'Arts'. The same difference appeared amongst clever 15 year olds and the bias was already apparent in 13 year olds before they had started to specialise. Typically historians and linguists had low I.Q.s when compared with physicists. He then tested 562 sixth formers from various schools using a test of 'divergent' ability which allowed for open ended answers. Typically the 'arts' sixth formers did better than the 'science' sixth formers. Between three and four 'divergers' went into the arts sixth for every one who went into the science sixth and vice versa. However on the much larger sample the difference ceased to be significant when verbal and non verbal scores on the I.Q. test were compared. Unlike Hudson, El Meligi<sup>175</sup> failed to obtain a significant difference between the scores of 'Arts' and 'Science' in his researches amongst comprehensive sixth formers. Neither the divergers or convergers appeared to be predominantly in either the

Arts or Science sixth. Povey<sup>423</sup> also followed up Hudson's work by testing 4th form and sixth form grammar school boys and 3rd year training college men students. The tests he used were WINC (Word in Context), AH5, A self judging vocabulary test, a questionnaire and a rating sheet. Povey accepted Rokeach's 1960 contention that the flexibility - rigidity continuum is independent of intelligence. WINC did not differentiate significantly between the Arts/Science students at any level although the small differences tended to favour arts students, AH5 showed significant favour to the scientists at all levels. They were however less flexible (non significantly) than the Arts students, at both the 6th form and training college levels. Paton's results did not confirm Hudson's findings that convergers/divergers on Arts/Science courses continued to become even more different after they left the sixth form, but rather he found that they showed a decrease in this difference.

Mullory Wober<sup>671</sup> suggests that Hudson's apparently contradictory finding of scientists being less divergent is resolved by McKinnons finding that creative scientists as opposed to non-creative scientists scored significantly higher on tests of divergent abilities, thus demonstrating that highly convergent or highly divergent people do not in fact exist in mutually exclusive cells.

Long, Henderson and Ziller<sup>338</sup> found that highly original children did much better at reading than at arithmetic but had significantly lower (0.01) self esteem than did children of low originality probably because teachers and fellow pupils more often rejected them for being

deviants. However in the Reed, King and Wickware<sup>434</sup> study where all of the children were studied (and not just a few isolated by virtue of high scores in one area only) the creative children were part of the generally superior group who also tended to be more stable, self confident, less anxious and generally more group orientated.

Another finding which further complicates research into "creativity" in children is the recent finding by David Elkind.<sup>664</sup> He found that scores on creativity tests depend on what the children were doing prior to being tested. If it had been "uninteresting" and they would return to it once testing was over the children were almost twice as "creative" as were those children who were due to return to an "interesting" task. This held good for all age groups and both sexes.

Katherine Dewing<sup>154</sup> with a group of 394 Australian children of mean I.Q. 113.9 found that there was a correlation of +0.143 between I.Q. and creativity score.

Gowan and Bruch,<sup>224</sup> never querying the superiority of creative teachers, concluded from their researches that for a teacher to be effectively creative he must have a great deal of energy, be self-confident, daring, have a warm outgoing nature, be free of impatient behaviour, be non-authoritarian, and be intelligent. Denny<sup>144</sup> noted that Wodtke (1963), Sears (1963), Taba (1964), Gallagher (1965), and Soar (1966) had all shown that warm, pupil-centred teaching behaviour tended to foster creative thinking in children.

In his own research he studied the gain in 'creativity' scores of children in 30 different classrooms with Otis I.Q.s varying between 92 and 117. The pupils 'creativity' gains (as measured on the Denny-Ives Classroom Creative Observation Schedule) were compared with various teaching behaviours. Gains were related significantly beyond the 0.10 level to teacher adaptability and initiative; beyond the 0.05 level to teacher divergency, beyond the 0.01 level to teacher's production of unusual responses to developments in the classroom learning situation and also to the total amount of structuring of the learning situation which the teacher had been deliberately responsible for.

~~This last factor is of paramount importance.~~ Learning does not often occur by chance. In the classroom it is more likely to occur when the teacher has a clear goal for her pupils, is aware of alternate routes to that goal and is able to use any of them to get there. This ability to range over a variety of behaviours is seen by Grace James<sup>668</sup> as ability to be creative. She found when studying pupils and teachers in 20 classrooms that teachers regarded as creatively successful were more flexible than their less highly regarded peers.

#### Reliability of divergent ability tests

Because this is a relatively new field of investigation reports on the reliability of tests of divergent thinking ability are usually where short term test-retest or split half techniques

have been used. For example Wallach and Kogan reported the test/retest reliability of their creativity test to be between +0.80 and +0.93 in 1965. Cropley and Clapson<sup>694</sup> have now reported that the long term test retest reliability of this type of test is quite high. In 1964 they tested 320 thirteen year old children and in 1969 retested 110 of them at age eighteen. The reliability correlations for the sub-tests were all significant with values between +0.33 and +0.58 which the authors point out is about the same as those reported for W.I.S.C. sub tests.

## Brief Summary of Chapter Six

Flexibility appears to be the most widely used single construct, either alone or in conjunction with others, when the attributes a teacher should possess are mentioned. This belief is sometimes backed up by research evidence but often appears to be a subjective opinion, albeit backed by considerable experience of seeing teachers in their classrooms.

Various terms such as adaptable, creative, flexible, original, have been used by various educational writers to describe essentially similar teacher attributes. One of these, "creative", became the educational jargon word of the sixties. Teaching should be creative, teachers should be creative and pupils should have their creative abilities developed to the full. Because of this and because of the fact that for part two of this thesis a test of flexibility was developed and used as a potential predictor of student teaching success a brief summary of some of the writings on creativity has been included. Basically it would seem that the ability to be creative, or, to use a preferred term, "divergent", is usually only found in people who are above average for conventional measured intelligence. If only people of above average intelligence are tested for divergent ability then the correlation between these two variables is low. It also appears

that little evidence exists to show that children labelled 'highly creative' go on to produce work (regarded as conventionally creative) of a higher standard than other children who are not labelled highly creative. Some evidence suggests that student teachers labelled divergent, on follow up several years later, were living more fully and continuing to learn more than their less divergent peers.

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## Chapter Seven

### Factors Affecting the Teaching Situation and the Assessment of Teaching Ability

Students, assistant teachers and head teachers are, and have been for many years, constantly asking for more time to be given to teaching practice during the three years of preparation. Frequently teachers, whether old, young or still undergoing their period of preparation, can be heard to say that teaching practice is the most (often "only") valuable part of the college course. At the same time more argument exists over its nature, validity, value, measurability and interrelationship with other aspects of the course than any other single area of preparation.

Eric Hall<sup>646</sup> has suggested that within the traditional 'block practice' four main factors interact to affect the performance of a student's teaching:

1. The student himself with his fears, anxieties, and partly formed aspirations
2. The organisation of the school, often with a group of newly qualified teachers who have not yet solved all of their own teaching problems
3. The children, with differences in social class and previous educational experience
4. The tutors, with their prejudices, who are involved in the expensive exercise of assessing students.

In recent years considerable attention has been paid to claims that the marks awarded to students on teaching practice bear little relationship to marks awarded to the same person at a later date in

his teaching career. The inferences are numerous, either the tutors are using different assessment criteria from later judges; teachers change their techniques etc. radically once they leave college; teaching practice is totally failing in its attempt to bear a resemblance to normal teaching; or possibly the claims of little relationship are based on faulty research.

During the next few pages I shall look at the evidence which, broadly speaking, fit into Eric Hall's four categories and in the next chapter cover those evidences which show a relationship or lack of it, between performance on practice with later performance as a qualified teacher.

When Edith Cope<sup>652</sup> examined the returned questionnaires from 324 students in two colleges of education she found that 71% claimed to have enjoyed teaching practice whilst only 10% claimed to have disliked it. 95% felt that teaching practice had enabled them to learn a lot. However, despite this finding in Edith Cope's study there is also a lot of anxiety as Michael Thompson<sup>540</sup> found. According to his report, based on a sample of 125 student teachers, sixty-one out of seventy-two females and thirty-six out of fifty-three males were anxious about the supervising classroom teacher. 65.6% of the total sample showed anxiety over teaching their main subjects. Lesson plans, pupil reaction, standards of teacher conduct, discipline and the student teacher's inability to answer questions were also matters of real concern. Another source of anxiety is the perceived difference between college and school attitudes towards teaching practice, although Cohen<sup>645</sup> argues that because students perceive conflict it does not mean they

experience it. He had asked 80 students, (a 20% random sample from a northern college of education)

- a) what they actually did
- b) what they thought the class teacher expected from them
- c) what they thought their education tutor expected from them.

He found that

1. The students rarely used the cane and saw their tutors being against its use and the teachers supporting it in a limited fashion

2. They saw tutors and teachers as being less supportive of the role of confidante of the children than they were themselves.

3. They saw themselves as more reluctant to allow rule infringement than either tutors or teachers.

4. Saw themselves between permissive tutors and authoritarian teachers in expecting instant obedience, allowing children to learn from their own mistakes and punishing aggressive children.

5. They also saw themselves as giving children more praise than teachers or tutors expected of them.

However, Haines<sup>237</sup> sees their major anxiety coming from the dilemma of not being a 'real' teacher. Because students are not in full command in the classroom they are only able to approximate to teacher behaviour, carrying the same responsibilities, but lacking the authority of the regular class teacher.

A different, and many think the major, cause of anxiety is the

knowledge that teachers and tutors are, however much they see their role as counsellor, ultimately going to assess the student's practical ability. As a result students tend to show a considerable amount of cynicism toward the dual needs of 'learning the job' and 'pleasing the gods'. The second is highlighted by Garth Sorenson<sup>503</sup> who asked a total of 213 students to list the things they would tell their best friend to do in order to get an "A" grade from their supervisor. He found that:-

50% said 'be well organised'

40% said 'follow his advice without question'

28% said 'keep absolute class control at all times'

24% said 'be original'

19% said 'cultivate him (ask advice when you don't need it)'

15% said 'they like to see pupil initiated activity'

15% said 'make sure you know your subject'

12% said 'keep the room tidy etc.'

10% said 'act enthusiastic (smile a lot, act as though you like teaching)'

9% said 'act as though you know what you're doing'

and a lowly 6% said 'Listen to his suggestions, they are useful'.

Sorenson added that despite the obvious hostility and cynicism engendered by teaching practice there was no way of knowing whether students took their own advice.

Students face the further problem of differential treatment in different schools. It is not uncommon for students on their first practice to be left entirely alone by the class teacher and yet to find on the third and final practice that a different teacher with different ideas spends almost the whole time in the classroom. Some heads 'pop in', others see whole lessons and still others never go near the student's classroom. Shipman<sup>483</sup> found that over one third of Worcester College students were never visited by the head teacher.

According to Griffiths and Moore<sup>110</sup> who interviewed the head teachers of 20 schools which were regularly used for teaching practice by their college:

All saw teaching practice as indispensable

17 heads handled their own teaching practice arrangements

16 claimed to have a teaching practice policy

15 claimed to give students advice on staff and pupil relations.

15 claimed to be satisfied with the standard of cooperation with the college.

12 thought there was evidence that the college theory courses produced unrealistic teaching methods.

Despite these claims Griffiths and Moore found that in fact:

No school ever had a staff meeting to discuss teaching practice

No school had a written teaching practice policy

13 saw student wishes as more important than college

wishes when arranging student time-tables.

Heads tended to criticise the lack of college supervision

during the practice despite all having previously agreed

to be responsible for supervision and assessment.

Nineteen out of the twenty had no knowledge at all of the

theoretical content of the college courses.

One factor which is tending to alter, according to Price,<sup>425</sup> is the student being regarded as available as a temporary extra member of staff releasing the class teacher for a free period or some other activity. This he found was not because of any change in attitude on the part of the teachers but due instead to increasing requests from the colleges for students to have time to work with small groups of children. The class teacher perforce having to work with the remainder of the children not needed for the student's 'small group' work.

Although Professor Tibble<sup>548</sup> claims that teaching practice has changed very little since Judd's description of the situation in 1914 undoubtedly one very big change has been the enormous increase in the number of students, meaning that the colleges can no longer afford to be selective when finding classrooms for practice. Shaw<sup>307</sup> in 1966 reported that before long two out of every three available classes in the London Institute area would be used for teaching practice, whether good, bad or indifferent. A situation which Pedley<sup>652</sup> argues strongly should not be allowed to happen if teaching practice is to be of value to the student.

A further result of the rapid expansion of the colleges has been the rapid increase in staff leading K. G. Collier<sup>99</sup> to point to the great variety of background experiences that these tutors have had. Collier might well query Morris's<sup>367</sup> objectives for teaching practice as well. Not because he would disagree with them but because of the difficulty of establishing what, if any, the common objectives of rapidly changing college staffs happen to be. Morris describes the common objectives as:-

- a) Acquisition of personal qualities - fairness, tact, enthusiasm, patience, etc.
- b) Acquisition of teaching techniques that will allow the ~~student to mediate his body of knowledge to the pupils~~
- c) Acquisition of the professional role of teacher including status and attitudes.
- d) The fusion of theory and practice.

This last in particular cannot be helped by schools if the earlier mentioned findings of Griffiths and Moore are general with the schools ignorant of the college theory courses and tending to emphasise needs for continuity as opposed to college emphasis on change.

When college tutors go to the lengths of laying down specific criteria for students on teaching practice the students' behaviour changes measurably as Witrock<sup>607</sup> demonstrated with two groups of students (total N = 28) on teaching practice in junior and senior high schools in the area of the Los Angeles Campus of the University

of California. Half of the students were told that their teaching practice mark would depend upon the amount of academic gain shown by the pupils they taught. At the start of the experiment there was no significant difference between the classes. By the end the experimental classes exceeded the control classes on test scores beyond the 0.001 level of significant difference.

If as simple an experiment as this can produce markedly different behaviour on the part of the student, what other factors can perhaps affect the way they behave and the marks they get?

By no means necessarily a factor at all, there is the length of time spent in schools depending on the college attended.

Banfield<sup>23</sup> reports that in 1967 the length of time on teaching practice varied between extreme colleges from 12 weeks to 39 weeks. A difference for the newly qualified teachers between the equivalent of one short term or one year in the classroom prior to their being totally in charge of their own group of children.

The type of school in which a student is placed is now known to affect the young teacher's development enormously, via a whole series of interrelated factors almost all of which are entirely out of his control. In the first place, even more true in Britain than America, is the fact that young students are, to quote K. Ryans,<sup>455</sup> sociological strangers. Most have attended a different type of school from the one in which they are teaching. A first consequence of this Ryans found was that the students tended to

expect too much from their pupils. Their problem becomes more acute if the student is placed in a school which draws its pupils mainly from a low socio economic area. Veldman and Peck<sup>570</sup> in 1959 studied the assessments of 54 student teachers made by 554 pupils and found that the pupils in low socio economic schools were much more likely to give all students a low rating for effectiveness as a teacher. In itself this does not matter until seen against a background of Thompson's<sup>537</sup> research (also reported in 1969). Thompson gave 452 elementary pupils in 18 seventh and eighth grade classes a rating scale for academic status and behaviour, the Barnett-Lennard Relationships Inventory and Shers Social Distance Scale. He already had an I.Q. score for the pupils.

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The way the pupils rated their teachers most affected the way they behaved and the different characteristics they showed.

Gary Anderson<sup>653</sup> points to the earlier researches of Hard and Rowe in 1966 and of Lott and Lott also in 1966 as showing that group intimacy in the classroom affected the learning of girls more than of boys with Anderson and Walberg in 1968 showing that pupils aware of class friction displayed a lower rate of learning than pupils not perceiving friction. This led Anderson to select 800 pupils at random from 2500 available American and Canadian tenth, eleventh and twelfth grade pupils of mean I.Q. for boys of 116.1 and for girls 117.6 and study their grouping habits and its effect upon their learning. He concluded that belonging to a tight clique helped low ability girls to study but helped low ability boys

to escape both their learning and social responsibilities.

High ability girls thrived when classroom intimacy was good but low ability girls did not.

So now we have the young student coming into the classroom as a sociological stranger who needs to adapt to the needs of his pupils; likely to be rated lower by his pupils if they are predominantly from lower socio economic homes and yet this rating will affect the way in which they behave. A further complication is the social climate within the classroom. Will the social cohesiveness and intimacy be the same for a newly formed class in September and October as for the same class in May and June? Does all of this matter? Professor L. Perry's<sup>409</sup> statement that colleges "...attempt to cultivate self-critical appraisal of teaching. Schools ... regard teaching as a static and routine situation for which permanent solutions in terms of teaching styles are applicable" and Turner's<sup>561</sup> findings that the relationship between teacher and pupils varied according to the majority's socio-economic background suggest that it does. Turner found that systematic, sympathetic, businesslike teaching produced the best result for working class children, whilst the best results from middle class children came from a teacher exhibiting understanding, stimulating, imaginative, friendly behaviour.

Thus to be successful requires different techniques in different types of school.

Partly as a result of this the schools tend to train new

teachers and students to conform to the pattern of their particular closed society and as Professor Perry says it is no surprise that, as promotion depends upon ability to conform, the immature and inexperienced teachers opt for the retraining solution to their role dilemma. Wragg<sup>614</sup> supports Perry when saying that most student teachers tend to adopt the practices of their teaching practice school and in particular those of the cooperating teacher, whilst there is evidence to show that even when student teachers wish to alter part of the system they find they cannot because the pressure to conform is enormous.

McAulayin<sup>623</sup> in 1960 found that students tended to use the ~~class-teachers-methods-and-materials~~ and neglect those of his own methods course. Stoller similarly in 1964 found that students were more strongly influenced by the class teacher than their supervising tutor. Holeman in 1967 found that students by the end of teaching practice had moved more towards the ideas of their cooperating tutor than those of their college supervisor. Yee in his own researches found that the M.T.A.I. scores of 124 student teachers moved significantly ( $p < 0.01$ ) towards those of their 124 cooperating teachers during the course of their teaching practice. Price<sup>426</sup> in a more ambitious experiment gave the M.T.A.I. to 116 supervising tutors and then selected those with the top twenty scores, the median twenty scores and the bottom twenty scores. The M.T.A.I. was then given to 100 students who were due to go on teaching practice, they were then ranked

according to their scores. Price then made up nine groups so that all possible combinations of students and teachers were covered, e.g. high scoring teacher with high scoring students.

high scoring teacher with median scoring students

high scoring teacher with low scoring students, etc.

Teachers and students were rated for teaching ability by using the Sanders Observation Schedule and finally the students were given the M.T.A.I. again at the end of their practice.

Significantly (0.05) the students M.T.A.I. scores changed toward the score of the supervising tutor.

Significantly (0.05) the assessment of student teaching ability correlated with the assessment of the supervising teachers' ability.

No wonder Pedley<sup>652</sup> argues that exposure of students to mediocre schools and teachers in a "sink or swim" fashion is not good enough.

Some students may well be able to take the enormous variety of teaching practice situation in their stride and still succeed both to learn and survive. Others are less well equipped. Thelen<sup>649</sup> in 1960 showed that it was the teachers with a great variety of characteristics and personality who succeed in the classroom. He also showed that most teachers are only successful with some pupils and with some methods of teaching, thus supporting Brunner's suggestion that the least effective teachers are probably

the ones who only use one style of teaching, even if it is an "ideal" style.

Agnes Hatfield<sup>249</sup> in 1958/59 investigated the top 19 student teachers and bottom 19 student teachers from Northern State Teachers College. Both groups were chosen on their average rating for teaching ability as given by four judges. All were experiencing their first attempt to teach. The superior teachers appeared to be significantly (0.01) more self accepting than the inferior teachers as measured by Stephenson's Q Sort Scale. Unfortunately Agnes Hatfield has not mentioned whether the students took the test before or after the teaching practice. Durflinger<sup>163</sup> four years later also failed to mention this important detail when coming to the opposite conclusion when he examined the teaching marks and test results of 150 students. He had used the California Psychological Inventory, Heston's Personal Adjustment Inventory and the A.C.E. Psychological Examination to establish the levels of self acceptance. Besides finding that the less self accepting were rated as the better teachers he also found they had less need to 'create a good impression' than the unsuccessful.

Less controversial is the finding by Beery<sup>418</sup> in 1960 that students on teaching practice in Miami who had completed some educational theory courses were superior to those who had not. Dalton in 1962 supported his finding when he got junior high school pupils to rate their teachers. Those rated as superior had twice

as many courses in Education to their credit as those rated inferior. Differences in length of teaching experience made no difference to this result. Popham in 1963 compared the scores of 49 students on a test of instructional principles and their teaching marks, all obtained in two schools and based partly on their use of principles they had studied. His correlation of +.56 suggests that the more a student knows the more he can use. Rousseau<sup>452</sup> might well express surprise at these results, however. He complains that college tutors tend to state their bits of information as if they were established truths and this is the cause of the 'reality shock' shown by young teachers in their first year.

One of the assumed major problems in teaching practice is that it is impossible for a tutor to enter a classroom without affecting it in some way. Canton and Carl Rogers<sup>378</sup> both believe that all teaching should take place in a non-evaluative atmosphere whilst the A.T.C.D.E.<sup>19</sup> recognise that assessment has the undesired effect of restricting the willingness of students to be adventurous. Caspari and Eggleston<sup>81 482</sup> although offering no evidence to support their statements also say that the presence of another adult in the classroom is bound to alter the relationship between student teacher and children. They therefore recommend that casework techniques should be used to assess student teaching, but appear not to be worried about the lack of counselling technique possessed by the majority of tutors. In an experimental study they used Loughborough College

volunteer students in 1964/65. Leicester University mature students on an advanced diploma course were their counsellors. At the end of the experiment in which the students reported one lesson per week in detail and discussed it with the counsellor, the mark of the scheme's success was felt to lie in the fact that one third of the students asked to use the same assessment process on their next block teaching practice. Apart from the fact that this means that presumably two thirds of the volunteers finished up either not wanting it or no more than neutral in their attitude, I am reminded of the situation which existed at Culham College some twelve years ago. There every student had to take the worst series of lessons they had taught, outline what they had done, criticise them and finally replan the series in the light of their new wisdom. Most students chose not their worst but instead their best series of lessons. The logic behind this being - "If they think this was my worst then they will assume my best was terrific!" Would many students tell much that they considered to be to their own disadvantage when their careers might well be at stake? This argument is I think strengthened by the findings at St. Gabriel's College<sup>89</sup> where after a pilot study involving three students and three tutors a major study was set up. In 1967 three tutors used the Caspari-Eggleston technique with 27 students. The student's expressed favourable attitudes at the end of their nine week practice. The tutors, however, noticed that the weak students avoided reporting for as long as possible and also avoided taking

part in discussions.

Contrary to the opinion of Canton, Rogers, Caspari and Eggleston it has been suggested by Medley and Mitzels that observers rarely have an important influence in the classroom. Masling and Stern<sup>345</sup> decided to test this latter hypothesis. They used seven observers with twenty-three teachers in six New York schools. Teacher and pupil behaviour was recorded at five minute intervals over two complete days. They came to two alternative conclusions, either a) the effect of the observer was so complex that it continued to affect the pupils and teachers differentially throughout the two days, or b) the influence of observers was negligible. Neither alternative could be discounted as no measurable change in behaviour occurred which could be ascribed to 'getting used to the observer's presence'.

#### Predicting teaching practice performance

Surprisingly, in spite of the wide variety of factors which can affect the way pupils and teachers act in the classroom, several studies have shown some potential exists for predicting success or otherwise on teaching practice. Several studies have been mentioned in the chapters on 'selection' and 'personality' so that a few will serve as illustrations in this chapter.

Mathis and Park<sup>348</sup> found that ratings for extra curricular activity, marks on speech courses, and pre student-teaching interview (which would probably have occurred during the second year at university) when used in multiple prediction for 252 students at North Western University produced a correlation of +.67.

Veldman and Kelly<sup>572</sup> in 1965 compared 34 students rated as effective teachers with 34 rated as ineffective by their supervising professors. The effective student teachers were also rated by their pupils as highly significantly superior to the ineffectives for friendly, cheerful, admirable facets as well as being able to show firm control without harshness and able to produce a meaningful structured atmosphere. The students rated as effective had been the ones to show much more positive attitudes towards self on a self-report inventory. They also showed higher scores for authority and for reality than the inferior student teachers. At the 0.05 level of significance they were more dominant, sociable, psychology minded and desired achievement in themselves via conformity rather than independence.

D. G. Ryans<sup>459</sup> in his Teacher Characteristics Study found that of 1640 elementary and secondary teachers those who had looked after the class for teacher or read to other children when they had been children got higher T.C.S. scores as teachers than those who had looked after their own family for mother or played at schools. However, both groups got significantly (0.05) higher T.C.S. scores than teachers who as children had done none of those activities.

In Britain Simeon<sup>524</sup> found that the correlation between AH5 I.Q. score and teaching practice mark was insignificant for the whole year population at one college. However when she compared the six who were rated as 'A' teachers against those four who failed teaching

practice, the mean AH5 scores were respectively 28.3 and 24.5.

Warburton, Butcher and Forest<sup>585</sup> found that several factors predicted the teaching practice marks of 118 students at the Manchester University Department of Education. Three scales of Cattell's 16 P.F. were significant beyond the 0.05 level in their predictive relationship with teaching practice marks:-

Conscientiousness r with T.P. = +.236

Sensitivity r with T.P. = ++.220

Self control r with T.P. = +.223

Three other factors also had a significant predictive relationship to teaching practice mark

Glass of degree r with T.P. = +.238 (0.05)

Degree tutors reference r with T.P. = +.249 (0.05)

Interview mark r with T.P. = +.265 (0.01)

Cortis<sup>115</sup> found that the teaching practice success of 259 student attending three Manchester Colleges of Education was predicted by previous teaching experience, low verbal ability, naturalistic and tenderminded attitudes (as measured on Professor Oliver's scale). The converse of high verbal ability and a tough minded attitude to education were two useful predictors of academic success at college.

In America Moore and Cole<sup>363</sup> found that whilst it was relatively possible for different assessors to agree which of 127 student teachers belonged in the top 10%, next 20%, middle 40%, next 10%

and bottom 10% it was not possible to predict even the extreme placings by using the Gowan Teacher Prognosis Scale, the Teacher Manifest Anxiety Scale or the Marsh Sexual Deviant Scale. On the Minnesota Multiphasic Personality Inventory it did seem that widely divergent (maladjusted) profiles were indicative of personality problems which would affect the student's teaching performance.

Similarly Rabinowitz and Rosenbaum<sup>429</sup> found that the M.T.A.I., California F Scale, Draw a Teacher Test, Sims Social Rating Scale, and a Satisfaction Index all failed to predict how 1600 students would perform on teaching practice. They also failed to predict the quantity of a) Disorderly pupil behaviour, b) Manifest teacher hostility, ~~c) Freedom of classroom movement and~~ d) ~~the amount of~~ generalised, subjective, liking of the teacher shown by the pupils in the classrooms of 49 of the students who were followed up one year after they qualified.

Wilk and Edson<sup>597</sup> concluded that the reason better students, as measured by grade point average and M.T.A.I. scores at Minnesota College of Education tended to be better at practice teaching was probably because their extra knowledge gave them more freedom of action because they felt more comfortable in the classroom.

This would seem to be supported at a wider level by the findings of Ellis.<sup>173</sup> He compared 19 secondary social studies teachers who were rated as outstanding with all of the rest of the social studies teachers. On 19 out of 20 aspects of the teacher's backgrounds,

including the number of semester hours of study at college or university and teaching performance they had been superior students (although not significantly on any one factor as a separate predictor).

The measurement of teaching ability

Cattell<sup>83</sup> said as long ago as 1931 that "In a college having 50 or more students in each year it should be entirely safe to assume that the average student ability does not vary appreciably from year to year". Whilst this in no way denied that long term trends may occur Cattell believed that teaching practice marks would follow the normal curve if account on second and subsequent practices was taken of the earlier 'failed' students who had left the college. Yet Veldman and Peck<sup>570</sup> claimed with their research that it was nearly wrecked because supervisors insisted on only using the two top grades. Cattell feels another problem is the slurring of teaching practice marks which occurs because tutors working together unconsciously approximate to a common standard. This slurring of marks generally giving a marked positive skew may perhaps be partly ascribed to the Hawthorne<sup>287</sup> effect of people knowing that their performance is being observed and measured showing marked change of behaviour in the desired direction. Hall<sup>646</sup> suggests another reason may be the difficulty of using the full A to E scale although many tutors would not appear to have this problem according to the suggestion he received from his colleagues that perhaps he

should not be a tutor in a college of education if he doubted his ability to assess teaching ability competently.

Measuring teaching ability is further complicated by, according to some, a lack of acceptable criteria; and according to others to the fact that a multitude of acceptable but different criteria exist.

Cattell<sup>83</sup> found that different people in education gave emphasis to different factors

Elementary teachers and students valued enterprise

Inspectors valued conservatism and respect for tradition

~~Directors of Education~~ - valued general culture, social

fitness and a sense of humour

Training College tutors valued general intelligence

Infant teachers and elementary heads

valued sympathy, tact, and enthusiasm

This differential list does to a considerable extent depend upon Cattell's assumption that the item first written down is, to the writer the most important. He did not ask the various groups to put the items in rank order, nor did he provide any evidence to justify his decision.

Robertson<sup>447</sup>, unlike Cattell, did ask supervisors to list in rank order, those attributes which they considered most valuable

for practice teaching. He found that sixteen of the eighteen showed considerable agreement, which suggested a common frame of reference was being used.

Barr<sup>29</sup> in 1958 came to the conclusion that criteria of teaching effectiveness tended to fall into four groups.

- a) Teacher as a friend and counsellor
- b) Teacher as a director of learning
- c) Teacher as a citizen of the school
- d) Teacher as a member of a professional group.

Whilst these may be true Ryans<sup>457</sup> still concludes that the sterility of research into teacher effectiveness is basically due to difficulties in adequately defining and then measuring teacher effectiveness. Anderson and Heinka<sup>14</sup> after lengthy examination of the various criteria, concluded that the relationship between various criteria of teaching proficiency is negligible.

Evans<sup>182</sup> has pointed out that there is a difference between teaching ability and teaching efficiency. Ability does not have to be used.

Bishop and Levy<sup>43</sup> add a further cry to the criterion complaint by pointing to the language used which tends to lead to attempts to compare the non comparable. "Encouraging independent learning by pupils" they claim is an aim which does not describe actual teacher behaviour.

Turner<sup>560</sup> followed up ex students into Indiana schools in

1961 and 1962. He found that schools in working class industrial areas were more concerned with the teaching of subject skills whilst middle class schools were predominantly concerned with personal social variables. Thus a beginning teacher being assessed on a scale superior to inferior would be seen against different criteria depending on which area he went to. Ryans<sup>462</sup> in an attempt to overcome the problem of criterion for the Teacher Characteristics Study (which lasted from 1948 to 1954) used observers who were trained by two senior observers. Periodically the observers would rate the same teacher that a senior observer was rating. Any major disagreement meant a retraining session. Continued disagreement meant that the observer was no longer used.

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One danger of this method would seem that effectively only one person's criterion of how what was observed should be interpreted was accepted and yet as Bruner<sup>447</sup> has pointed out, every individual has his own controls for regulating the selection of clues used in making inferences that allow the environment to be interpreted to his own choice. Could such a training scheme involve the rejection of clues regarded as unimportant by Ryans?

Ryans research had involved 6179 teachers in 1747 schools from which 2043 teachers were extracted because they were more than one standard deviation away from the mean ( + and - ) on the following three separately rated facets of behaviour or because they were less than 0.2 standard deviations away on all three.

X<sub>0</sub> friendly, understanding; V aloof, egocentric, restricted.

Y <sub>o</sub> responsible, businesslike, systematic;	V evading, slipshod, unplanned.
Z <sub>o</sub> stimulating, imaginative, surgent;	V dull and routine.

Although Ryans does not define any group as "good" or "poor" considerable differences between those with high T.C.S. and low T.C.S. scores were apparent.

Higs were more generous in their appraisal of others, and in appraising others' motives; were strongly interested in reading, interested in music, arts, belonging to social groups, preferred non-directive teaching methods, enjoyed relationships with their pupils, had superior verbal I.Q. scores and were above average for emotional adjustment.

Lows generally gave only limited praise of others, preferred activities which did not require close relationships with others, had a lower level of verbal intelligence and were less satisfactorily emotionally adjusted.

Ryans<sup>461</sup> further reported that those who had never been married tended to be significantly more businesslike (0.05 level) and have significantly higher verbal I.Q. scores. Elementary married teachers were significantly more friendly and understanding than the unmarried teachers, whilst in secondary schools the married teachers were the more emotionally stable. Those who gained high T.C.S. scores were also the ones (significant beyond 0.01 level) rated as superior by their principals. Secondary teachers tended to be more academic/

traditional minded than elementary teachers. The high scoring teachers in both types of school had more favourable attitudes towards their superiors.

Similar evidence was found by Symonds<sup>30</sup> using teachers who were rated ~~as either~~ superior or inferior. The superior teachers, unlike the inferior ones, were personally secure, self assured and well integrated, they also liked children. Shultz and Ohlsen found that the student teachers rated best were interested in intellectual pursuits and working with people. The worst avoided such occupations.

Cattell<sup>83</sup> in his investigation added another complication to the criterion issue when he found that different efficiencies were expected of young and old teachers. The young were expected to show more perseverance, enthusiasm and alertness, whilst older teachers were expected to show more classroom technique, knowledge of psychology and pedagogy, intelligence, sympathy and tact. The last few appear to be the reverse of what Ryans and others found to actually exist.

#### Pupil gain as a criterion

Many studies have used 'pupil gain', in terms of academic knowledge, as the criterion of effective teaching. Hellfritzsch<sup>254</sup> decided after studying the teaching situation that there were several factors which came into play which were unrelated to each other including the teacher's -

- a) Mental factor - general knowledge and mental ability

b) Personal emotional adjustment

c) Attitude - Eulogising attitude towards teaching.

He concluded, however, that none of these could validly replace measurement of pupil growth as an evaluation of the teacher's ability to teach.

Medley and Mitzel<sup>350</sup> from their researches using 49 teachers in 19 schools found that the teachers were able to accurately estimate how much progress they had produced in their pupils. Pupil growth tended to be the main criterion they used in rating themselves. Their supervisors gave much more emphasis to their ability to establish rapport with the students.

Barr<sup>317</sup> measured the I.Q. of teachers and pupils in 34 rural schools during 1938-1939. He also measured the amount of pupil gain over the same period. He concluded that pupil gain could only be used as a criterion with extreme difficulty. Once again the criterion failed to agree with supervisor's assessments of teacher ability.

Rudins<sup>454</sup> points to the problem of using pupil gain as a criterion for there is no way of isolating the pupil from the affect of other teachers, parents, peers and extra-class involvement in the learning process. In an experiment Rudins got nine student teachers to teach for one hour a specific scientific lesson. Pupil gain was measured via pre and post tests. He concluded that only half of the variance could be said to have been due to teacher influence.

A further complication was added by Rolfe<sup>449</sup> who found that when small schools were used there was a positive correlation of .31 between school size and pupil gain.

Cogan<sup>329</sup> studied 987 junior high school pupils and rated their 33 teachers for 1) warm, friendly relations, 2) dominative, aggressive, rejecting relations, 3) technical classroom skills such as classroom management and subject command. If pupil gain is seen as movement towards organising own learning then the fact that only the first group - warm, friendly relations - had a significant relationship with self initiated learning and with the amount of required (by the teacher) work in the classroom, assumes considerable importance in modern education.

In Britain Jenny Poole<sup>417</sup> conducted an elaborate experiment into classroom behaviour and pupil learning without commenting on the efficacy of the varied situations. A week's mathematics lessons in various schools were tape recorded and filmed, one frame every three seconds, by two cameras in each room. The pupils were all 13+, mostly of I.Q. between 95 and 100. Failure to learn appeared to be much less a function of attentiveness and much more attributable to the opportunity, or lack of it, to ask questions and so have errors recognised and corrected. The school with the lowest level of inattention had the highest level of feedback and also gave least time to writing.

McCall<sup>379</sup> writing in 1959 suggested that one problem of

predicting or measuring teaching ability is this factor of varying criteria. When the criterion "measured pupil change" was used then in a variety of areas superintendents, supervisors, principals, colleagues and teaching practice assessors all failed to rate the teaching performance of 73 North Carolina teachers. Only the pupils with a correlation of  $+0.36$  had been able to do this. John Holt's<sup>268</sup> explanation of this would lie at least in part in his assertion that all the way from primary school to graduate school the teachers seem to be hard at work making it look as if their students know more than they really do on the assumption that standing depends on how much they seem to know. Certainly we have already seen that teachers themselves see pupil gain as the most important criterion. G. B. Johnson<sup>286</sup> however can be seen to have summarised the situation when he said that today we must judge 'academic success of pupils' and 'teaching ability' as totally separate issues when considering teacher competence.

Factors related to, or affecting, the teaching mark

C. F. Faber<sup>191</sup> looked at schools and teachers in the twenty largest school districts of a Mid Western State. The Director of Supervision for the State Department of Public Instruction rated four of the school districts as superior, ten as excellent, five as good and one as fair. Faber found that the superior districts had significantly (0.01) more teachers who had studied for five or more

years than did the good or fair districts. The superior districts had significantly (0.01) more high school teachers teaching subjects they had studied at college for at least thirty semester hours (equivalent of one full year on just one subject). This appears to dovetail into Medley and Mitzel's<sup>349</sup> finding that in the "better" schools teachers appeared to be more pleasant and secure.

The above two findings are important because several studies have found similarly to Hall's following finding when he asked 16 tutors to rate the difficulties faced by 81 students in various schools for their final teaching practice. He found that there was a significant (0.01) relationship between the number of problems faced in a school and the mark they got for teaching practice. High teaching practice marks tended to be only given to students in good schools.

Van Caille<sup>651</sup> found that there was a negative relationship between the age of pupils being taught and the teaching practice marks obtained by students on their first two practices. Of 54 men who had completed two practices and were also in their second year at college 32% of those opting to teach 9 year to 13 year old middle school children got at least one 'above average' grade compared with 20% of those who opted to teach secondary children.

Similarly for 56 women who also completed two practices and were in the second year the 'first school' group were given 55% above average grades on at least one practice, the middle school group 37% and the secondary group 28%. 63 women in the third year had also taught two practices, the first school group got 56% above

average grades, the middle school group 46% and the secondary group 40% again for at least one of their practices.

Margaret Williamson<sup>650</sup> found a similar pattern when she analysed raw data supplied by A. C. Crocker and based on a one year sample of Bede College students. There the men students opting to do their practice in a primary school were significantly (0.05) more likely to get a good mark than students opting to teach in secondary schools.

Shipman<sup>483</sup> at Worcester College of Education checked the most recent 1000 teaching practice marks given in ten primary and ten secondary schools chosen at random. In some of the schools over half of the students got credits or distinctions whilst in others only a quarter managed to get similar ratings. As Hall says this "is important since there should be no relationship at all if tutors are being objective in their assessments and are making due allowances for a difficult school".

Possibly one reason for the finding of a negative relationship between age taught and teaching mark could be due to the large proportion of ex-secondary teachers in the colleges who are more able to rate 'content of lessons' as part of their assessment when they are observing students with older pupils.

#### Amount of agreement between assessors

C. D. Jayne<sup>283</sup> in 1945 was pointing out that what is appropriate teacher behaviour for one criterion of teacher

effectiveness may not be for another. Cattell and others have tended to reinforce the various arguments that different people in different branches of education see different teacher behaviours and different classroom outcomes as being the most important. This may well be true at the level of values discussions, but does not seem to be too important when it comes to the field task of evaluation.

Lantz<sup>321</sup> used 36 students who did one teaching practice in grades 1 to 3 and another in grades 4 to 6. A total of 38 classrooms in 30 schools were used. The 38 supervising teachers, 7 university tutors and 5 observers (with psychological but not teaching experience) used Flanders Interaction Analysis for classifying classroom behaviour. The correlation coefficients between the various groups of observers lay between +.90 and +.97.

Hawkins and Stoops<sup>648</sup> chose ten out of 1017 elementary schools in the Los Angeles Area by a random technique. Principals, District Administrators, peer teachers, non teaching school staff and informed parents were asked to select the "outstanding" teachers in each school. The various groups all agreed beyond the 0.001 level of significance.

Nanninga<sup>174</sup> in 1928 found when he compared ratings given to teachers by 1) graduate students, 2) school principals, and 3) school assistant principals that the correlation between 1) and 2) was +.47 between 1) and 3) +.76 and between 2) and 3) it was +.82.

Popham and Baker<sup>419</sup> reported in 1966 that they got 11 sixth grade pupils to rate student teachers unbeknown to the students. The eleven pupils agreed on 270 out of 320 observations.

Mathis and Park<sup>348</sup> got a correlation of .861 for the compared ratings of university supervisor and cooperating teachers for 101 elementary student teachers and  $r = .670$  for 126 students in secondary schools.

In Britain Skinner<sup>490</sup> found that the correlation between school ratings for 87 technical subject student teachers and college rating was  $+0.81$ .

Poppleton<sup>422</sup> in 1964 found that Sheffield University Department of Education over used the "B" category for rating students, a finding mentioned by Knight as long ago as 1923. However

Poppleton<sup>110</sup> in 1968 got ratings for a total of 249 students where the agreement between schools and supervisors produced a correlation of  $+0.60$  so although his earlier findings would suggest that teachers as well as tutors were using a protracted scale, there was more than approximate agreement as to the coarse groupings into which the students fell.

Jones<sup>289</sup> in 1967 devised a critical incidents scale based on Flanagan's techniques whereby a list of 32 effective incidents and 43 ineffective incidents were drawn up. The schedule was distributed to 19 tutors and 119 teachers who observed 119 second year students from Summerfield College of Education whilst they were on teaching practice. 101 schedules were returned by tutors and

99 by teachers. Agreement between the two was significant beyond the 0.05 level.

The work of Anastasiow<sup>12</sup> brings a sobering thought to this list of respectable ratings. He got ten school principals to rate themselves on Gough's check list and then to each rate fourteen teachers in his own school. The criteria for effective teaching were 'creating and maintaining meaningful experiences whilst reflecting a knowledge of learning theory and an understanding of child development'. The principals' rating of low ability teachers correlated 0.12 with their ratings of themselves. Their rating of high ability teachers correlated with self rating of principals at 0.88 (significant beyond the 0.01 level).— The weak teachers were seen as argumentative, defensive, opinionated, rigid, anxious and inhibited. The superior teachers were seen as adaptable, adventurous, alert, appreciative, capable, charming, cheerful, clear thinking, conscientious, considerate, cooperative, curious, dependable, efficient, energetic, enterprising, enthusiastic, fair minded, frank, helpful, imaginative, insightful, intelligent, kind, mature, natural, patient, poised, sincere, sympathetic, tactful, thoughtful, tolerant, understanding and warm.

In a smaller British investigation K. B. Start<sup>508</sup> asked one secondary modern head teacher to rate his staff for nine different attributes felt to be of value to a teacher and to select the five best and five worst for each trait. 35 of the 39 teachers

completed Cattell's 16 P.F. Four refused, Start claims they did not differ from the rest except that they were less friendly with their colleagues.

The head tended to rate as successful those who were rather like himself but less sure, more accommodating and not quite as shrewd. A less experienced version of self who was prepared to lean on the head's experience. Those most like and least like the head were regarded as significantly (0.05) superior.

These last research findings would seem to me to add to the validity of the multiple assessment of teaching ability obtained during teaching practice and a factor to be mentioned in the next chapter, to account for at least some of the mobility of young teachers.

## Brief Summary of Chapter Seven

More argument exists about teaching practice than any other aspect of teacher preparation. Although most students claim to enjoy teaching practice and tend to see it as the most valuable part of their course, it is also a time of considerable strain. Problems include differing concepts held by schools and colleges, differential support in schools from heads and staffs, lack of a defined status for the student, and assessment. Colleges can no longer be selective in their use of schools, having to take all that they can get.

Pupils' socio-economic background, classroom intimacy, pupil attitudes to the teacher, all affect teaching relationships and strategies. Conforming to the particular school model appears to be essential if promotion is to be a reasonably likely prospect. As a result the teacher with the greatest variety of behavioural patterns at his disposal emerges as the most likely to be rated as successful.

"Good" teachers tend to be better qualified than "poor" teachers.

The limited amount of evidence available does not support the belief that the presence of observers greatly affects the behaviour

in a classroom of teachers and pupils.

Teaching practice grades have been predicted by a wide variety of tools usually with more accuracy when only the "good" and "poor" teachers have been extracted from the population studied.

Pupil gain as measured in terms of knowledge and understanding, has been suggested as the only possible criterion of teaching success by several writers. Others have found this to be a totally separate facet of teaching with little or no relationship with other aspects of the teacher's role.

Teaching practice marks appear to be affected by school catchment area, school level of "difficulty", age of children being taught. When teachers at the 'poles' of the good/poor continuum are compared, there is considerable agreement as to the level of their teaching ability.

Evidence suggests that teaching marks are distorted by the amount the assessing tutor identifies with the personality and teaching style of the assessed.

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## Chapter Eight

### The Predictive Validity of Teaching Practice Marks

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In spite of the many factors affecting the teaching situation it would appear that judges do show a significant amount of agreement when considering the global quality of a student teacher's efforts. This may be due to the use of a restricted range of marks, a desire to avoid controversy on perhaps even to the fact that it is possible for teaching to be subjectively measured. Teaching as a student and teaching as a qualified member of the profession, it is sometimes suggested, have very little in common. Because the second part of this thesis is concerned with an attempt to use various measures to predict student teaching performance it is particularly pertinent that in this part I should consider in some detail the evidence relating to the predictive validity of the teaching marks awarded to students.

#### Quality of Qualified v Unqualified Teachers

In an interesting piece of research Beery<sup>35</sup> arranged for 76 unqualified teachers and 343 qualified teachers, all of whom started to teach in Florida in 1959, to be compared. Their educational backgrounds were known and their teaching was observed by a) people involved in teacher education, supervision or administration, b) professional laymen who could be expected to make general judgements of good and bad teaching (medical practitioners saw biology, and so on), c) a former school superintendent who saw every teacher. Each teacher was visited five times in the year. Each

visit lasted between one and one and a half hours. The observers did not know the professional status of the teachers. The qualified teachers were significantly superior to the unqualified, the trend being beyond the 0.01 level. Some of the non qualified teachers were rated higher than some of the qualified. The non-educational observers were as able to recognise the superiority of the fully qualified teachers as were the educators. This last finding suggests that rating of teachers may be a global affair which does not vary tremendously whatever the judges state their fundamental criteria to be. Orlando Lupone<sup>340</sup> in 1961 reported a similar research finding for 240 teachers in New York State. All were in their first, second or third year of teaching and were in one of the two categories 'provisionally certified' and 'permanently certified':-

1. On "human relations" there was no significant difference  
between the two groups
2. On "teacher/parent relations" there was no significant  
difference between the two groups

But for

3. Preparation, planning and management
4. Subject matter mastery
5. Instructional ability
6. Ability to evaluate and understand children

there were significant differences in favour of the permanently qualified teachers.

In Britain Mildred Collins<sup>102</sup> found that of 63 untrained and

105 trained women, 29 untrained and 183 trained men teachers who entered teaching from Leicester University, the untrained were regarded as significantly (0.01) poorer than the trained, they had been ~~ill~~ more in their first year, spent less time on preparation and significantly (0.005) more left teaching at the end of the first year. In another study Collins<sup>101</sup> followed up 115 students. 101 entered teaching. They were divided into two groups - those getting A to C for their teaching practice grades and the other group who got from C- to E. 82% of their respective head teachers provided grades some time after the end of their probationary year. The three categories used were (1) less well than usual (2) quite well (3) very well. The head's assessments on analysis indicated that the two groups were still significantly different beyond the 0.001 level. The poor student teachers became the poor teachers.

Two extra points of interest were:-

1. Of those women who got married and had been rated as good students 7 out of 7 continued to teach, whilst of those rated as poor 1 out of 5 continued to teach.
2. The few who had been rated as poor students and were now rated as good by their head teachers had almost all taught for more than four years and were the best qualified academically of the poor group.

American Evidence of a relationship between practice and field teaching assessment

One of the earlier reported studies was by Merriams<sup>174</sup> in 1906.

He obtained ratings on 185 ex students from 11 normal schools all teaching in elementary schools. Six of the raters were college principals who rated their own ex students, the others were either school principals or superintendents.

The correlation between teaching practice mark and later assessment was  $+.443$  which is significant far beyond the 0.01 level. El Meligi feels this result is bound to suffer from halo effect. However, unlike most studies it is one of the few in which a rater actually went into the classroom to see what was happening at the follow up stage.

Somers<sup>174</sup> in 1923 got a correlation of  $+.70$  between teaching practice results for 156 graduates of the Normal School at Furnville Virginia and an assessment made by their principals and supervisors towards the end of their first year of teaching.

E. J. Swineford<sup>520</sup> followed up 33 junior high school teachers who had completed their teacher preparation at the Santa Barbara Campus of the University of California during the previous five years. He visited each one at least twice. One changed her rating downwards by two standard deviations, twelve up or down by more than one standard deviation, but twenty moved less than one standard deviation. The author also pointed out that the assumption that experience led to increased teaching skill was a fallacy.

Fielstra<sup>194</sup> extracted the bottom and top quartiles from 200 teaching practice grades given to University of California at Los Angeles students. Of the bottom 50 the grade "C" was given to 14

and "B" to 36. Fielstra says that the high rating is due to poor student teachers having been screened out earlier. Other researches would tend to throw doubt on the validity of this claim. However, the 100 students were followed up at the end of their first year of teaching and rated by their school principals, on the same rating scale as that used at U.C.L.A. The principals ratings still made the two groups different, significantly beyond the 0.01 level. Not one of the top quartile got a rating lower than "B" and not one of the bottom quartile got an "A" rating.

Gowan<sup>225</sup> followed 329 ex-students from the Vermont Campus of Los Angeles State College into their schools some two years later. All had qualified as teachers between 1953 and 1956. The 202 who replied were not significantly different from those who did not in terms of their college marks, etc. The 202 were compared for a) their college ratings - from master teacher, college tutor and placement office average ratings (the placement office is a facility in many American universities which keeps a complete record of the student's college activities and achievements and references and also keeps a register of available teaching posts, etc.).

b) Principal's ratings at school after two years of teaching.

The correlation of .28 between field consensus rating and training ratings was significant beyond the 0.01 level.

Cole followed 140 teachers into their schools. They had all studied at Occidental Teacher's College. Each teacher was visited by one observer twice. The correlation between faculty teaching

practice rating and observer's rating in the field was  $+ .26$  (significant beyond the 0.01 level).

Labriola<sup>314</sup> & <sup>315</sup> followed up 200 students who qualified between 1961 and 1964 all of whom had completed their student teaching in the area of York, Pennsylvania. Six left no forwarding address and four refused to reply. Of the remaining 190 one hundred and sixty-five taught immediately after graduating, another 15 got married, 8 went on to graduate school and 2 took up another career. Fifty of the 165 changed schools at the end of their first year, 39 of these because they got married. At the time of the study in 1965 of the 165 ex students 30% had three years teaching experience, 33% had two years, 35% had one year and 2% had six months. 55% were teaching the same grade as they taught on teaching practices.

Three ratings of their teaching ability were obtained

1. That given by the university supervisor during teaching practice
2. That given by the supervising teacher during teaching practice
3. That given by the supervising teacher during first teaching experience, (this may have been the result of one, two or three years acquaintance).

In the following table  $r_{12}$  is correlation between university supervisor and initial teaching supervisor,  $r_{13}$  is the correlation

between supervising teacher on teaching practice and supervising teacher on first appointment.  $R_{123}$  is the multiple correlation between the three variables.

	General overall ratings	$r_{12}$	$r_{13}$	$r_{123}$
1	Personal qualities	.87	.60	.87
2	Professional attitude and behaviour	.82	.41	.83
3	Classroom participation	.85	.54	.85
4	Lesson presentation	.86	.50	.87

N = 165. All significant beyond the 0.01 level.

Labriola concluded that the results showed clearly that the successful student teachers became successful teachers and the unsuccessful students continued to be unsuccessful as teachers.

#### Factors affecting prediction

Perhaps before moving on to consider the British evidence it would be worth while to look at some of the factors which appear to affect the predictive relationship of teaching practice marks when compared with later success in teaching. Broadly speaking follow ups can be divided into two categories. 1. Those which look at performance in the classroom and compare it with college grades,

and 2. those which look at professional success in terms of the amount of promotion gained. At this point I should like to look at the former.

Taylor<sup>531</sup> found that many L.E.A.'s when appointing teachers to a post preferred to appoint mobile students with 'A' grades from their colleges rather than local students who were immobile (usually because they were mature married women) but had got a 'D' grade for teaching practice. This is easily understood but could well be a factor in over subscribed areas for poorer student teachers dropping out and so not being available for future follow up studies.

The lack of any external pressure on newly qualified teachers to continue to study and read could well mean that potentially lazy members of the profession once free of the slight fear of failing they had at college would demonstrate Katherine Evans' point that a person can be potentially able without in fact using that ability. Simpson's<sup>488</sup> finding that out of 746 teachers 40% had not looked at any professional article or book during the previous month, would suggest that many teachers either ignore this source of knowledge or deny its usefulness. Perhaps this is why Swinford<sup>488</sup> concluded that it is a fallacy to assume teaching improves with experience after finding that over half the teachers he studied still used techniques they had learned at college however long ago they had qualified.

Many researches depend upon the willingness of teachers to be investigated, yet Mason<sup>346</sup> when attempting to contact 7150 newly qualified teachers with a questionnaire in 1957 found that men were

significantly more likely to reply than women. This bias in samples would perhaps influence some results even if random discard techniques were used to redress the balance.

Case<sup>79</sup> found three possible factors which could foreseeably affect prediction. Mature married women entering teaching were more stable during their probationary year than the newly married and single girls leaving college at the same time. It would be surprising if preparation for marriage and early months of marriage did not affect the efficiency of many young teachers. A second factor which Case mentions is the jealousy which Kitson claims still existed in 1966 between schools and colleges. Certainly most tutors must have experienced the frustration of school staffs protecting a student from the visiting 'ogre' and then at the end of a practice complaining that "'Miss X' is the worst student we've ever had. Why haven't you advised her to leave before this?" Although the position appears to be improving somewhat the third of Case's factors was the fact that of those students placed in streamed primary schools for their first practice 11.8% were given remedial or backward classes. (Case under values this by pointing to the fact that it was only 4.9% of the total ex-students in primary schools, because many were in non streamed schools. However quite clearly those ex students in non streamed schools should have been regarded as spurious cases.) Rita Brown<sup>637</sup> claimed in 1968 that 'maladroit appointments now seemed rare'. Her concept of maladroit was a secondary trained teacher taking the infant reception class!

Many students leaving colleges appear to have considerable potential for continued growth if they spend their early years of teaching in the hands of someone willing to help. Dalrymple,<sup>133</sup> however, points out that despite their honeyed words whilst recruiting, the L.E.A.'s devote very little time to the care and guidance of probationary teachers. Case<sup>79</sup> reports that NONE of the 247 teachers who returned his questionnaire had received guidance from local inspectors, advisors or H.M.I.'s during their probationary year.

The N.U.T.<sup>387</sup> hardly appear to have been more supportive. In their booklet "Starting" they wrote about pay, tax, superannuation, insurance, sickness, cheap motor insurance, private hospital benefits, R.A.C. membership, etc., and advised members to contact the union if their probation was extended. There is not one word about teaching, or how to seek the help which might enable the young teacher to avoid extended probation, in the pamphlet. The A.T.C.D.E.<sup>388</sup> voiced a growing worry over probation and the fact that schools were ignoring college advice about young teachers in another pamphlet<sup>387</sup> also written in 1960. Certainly it seems reasonable to assume that the lack of support and guidance is one of the reasons for the drop out of first year teachers. In 1964, for example, 7% of first year teachers left the profession. It may also account for some of the 3% - 5% quoted by Edmonds<sup>170</sup> as having their probation extended.

Drop outs are important because almost invariably they are discarded from follow up investigations because there is

considerable suspicion that a high proportion were failing in teaching as a career role. This inevitably causes distortion to the evidence used.

Where classroom teaching ability has been the criterion and college grades the predictor several British studies are worthy of mention.

Pearce<sup>406</sup> followed up all students who left Wall Hall College over a six year period and went to work in one nearby L.E.A. Each ex-student was visited during the second or third term of her probation by the education tutor who had been responsible for her at college. Visits lasted half a day and included discussions with the young teacher and the school head. Only two ex-students refused to co-operate during the whole six years; another four were discarded because they had been on shortened courses. One further student was in a position which made it impossible to co-operate. Pearce describes nine of the 40 schools, where appointments were made, as offering poor facilities. In 24 of the schools the ex-students were able to use techniques they had met at college, in a further 14 some adaptation was required but only in three was there active criticism and hostility. Pearce found that, in the main, college teaching practice results were justified. Where two ex students were rated as worse they were both putting all their energy into wedding preparations. Every poor student who became a better teacher could be seen to have improved as the direct result of working with the understanding help of a particular

head teacher. The weak students proved to have most difficulty in adapting to the new situation and to be the ones who never resorted to books when faced with a problem.

The work of Pearce and of Collins when viewed together would seem to suggest that poor student teachers can improve but are only likely to do so if given kindly help over a long period and provided they have a relatively good stock of academic/professional knowledge upon which they can draw.

A study which tends to get quoted frequently is that of Tudhope<sup>556</sup> in the early 1940's. He found that Cattell's suggestion of frequent assessment disagreements did not happen in practice, but that one source of discrepancy between college marks and future ~~assessments of teaching ability was where the ages of children~~ taught on teaching practice were very different from those of the children eventually taught once the student was qualified. Tudhope followed up a random selection of 50 men and 46 women all of whom had taught for at least three years. The median number of years teaching experience was nine. Each teacher was visited by an H.M.I. and graded on the same scale as that used by their college. Tudhope's research differs from almost all subsequent investigations in two major respects:-

1. The teachers were not given the choice of opting out of the study, i.e. 100% of the random sample were followed up.
2. The teachers were seen in their classrooms - teaching.

Tudhope got a correlation for women of  $+0.77$  between the two assessments. For men the correlation was  $+0.84$ .

Clarke and Nisbet<sup>509</sup> in 1963 got a correlation of  $+0.32$  between H.M.I.'s ratings of teachers and their previous college grades for practice teaching. Of the 267 teachers in the survey 241 were within one grade of their college teaching practice grade.

K. B. Start<sup>509</sup> quotes Simun and Asher in 1964 as obtaining a correlation of  $+0.34$  for the relationship between marks given to 111 serving teachers and the marks they got when on teaching practice. In his own research he got a correlation of  $+0.254$  between the teaching practice marks awarded to 452 student teachers and the estimate of their teaching ability submitted by their head teacher three years after leaving college. When three judges gave an estimate of their worth based on references from the same head masters the correlation with teaching practice mark was  $+0.256$ .

Promotion as a criterion of teaching success

Several investigations have used promotion as the criterion of success in teaching. Walters<sup>584</sup> whilst querying it as an index of teaching ability nevertheless found a significant relationship (beyond the 0.01 level) between the amount of promotion 183 teachers had received by the 1950's when compared with the teaching practice marks they had received during the 1940's. The 183 teachers in his sample were out of a total of 433 and one unresolved problem for Walters was the fact that people who had been relatively unsuccessful at college were significantly (beyond the 0.01 level if they had been poor on teaching practice) more likely to cease being in contact with it. He also found that roughly equal proportions of students regarded as poor teachers and good teachers had become heads of

primary schools. Nisbet and Grant<sup>393</sup> had found a similar result when they followed up ex-graduate teachers who left Aberdeen University, as previously mentioned.

There are several factors affecting the validity of promotion as a criterion of teaching success. For non-graduates headships are more easily come by in primary schools than in secondary schools, but because of the points system geared to the age of pupils and the fact that secondary schools are generally much larger than primary schools it is easier to get graded posts or head of department posts in secondary schools. As a result in primary schools it pays to stay in one place and be seen as a stable, patient settled teacher whilst in secondary schools the ladder is best climbed by frequent moves. Duggan and Stewart<sup>647</sup> found exactly this situation when they compared men in primary schools with men in secondary in 1965. They concluded that career oriented teachers need to be in secondary schools.

Wormald<sup>612</sup> in 1967 followed up 116 out of 266 students who left Worcester College of Education in 1956 and 1957. The rest failed to reply to her questionnaire. Of 43 men 95% were still teaching and 88% were in promoted posts. No relationship existed between college results and the amount of promotion received.

#### Wiseman and Start's research report

An important piece of research reported in 1965, important

partly because of its influence on later research workers and writers, has been a report in the British Journal of Educational Psychology in November 1965 by Wiseman and Start. Their main conclusion being that College of Education results failed to predict teaching success as measured by promotion five years later.

Shipman<sup>483</sup> in 1966 wrote that evidence tends to contradict claims that teaching practice results predict future performance. As well as referring to Wiseman and Start's work he also refers to Cattell's report in volume one of the British Journal of Educational Psychology as further evidence to show this. However Cattell's article can only at most, be said to perhaps contain this as an inference.

Poppleton<sup>422</sup> in 1968 quotes Wiseman and Start as showing that the predictive validity of teaching practice marks is low.

Brown<sup>637</sup> in 1968 quotes them as saying that the "degree of success on training courses makes little difference to subsequent teaching performance as seen by individual's head teacher".

Cohen<sup>95</sup> in 1968 quotes Start's work as showing that there was little relationship between important criteria used in college and the future success of the students in their teaching posts.

Professor Taylor<sup>531</sup> in his 1969 book "Society and the Education of Teachers" writes, "The fact that the final grade obtained both in theory and practice ... have been shown to have no significant correlation with later promotion and teaching success..."

Edith Cope<sup>652 and 654</sup> in 1969 and again in 1970 quotes Wiseman and Start as finding that "little correlation was found between

college assessment and the various criteria of success in the profession."

When an article has such an influence on its readers it is clearly worthy of close inspection.

Wiseman and Start<sup>605</sup> wrote in the British Journal of Educational Psychology, as previously mentioned, in 1965. The following is a summary of their project and its findings.

1. Questionnaires were completed by 248 teachers who left seven colleges of education and one university department in 1955.
2. The 248 were those who returned complete questionnaires and whose heads also replied out of a total of 694.
3. Four independent judges rated the references supplied by the teacher's head and got correlations of agreement between .62 and .79. On repeating the level of agreement rose to between .70 and .89. Their aggregate rating was used as a criterion measure.
4. College entry qualifications were graded.
5. Membership of professional bodies and post college courses were used as criterion measures.
6. Performance as a student during his course of training "was based on his scores on the final theoretical papers in Principles of Education and the average he obtained in all his theory papers."

7. The final teaching practice mark was noted.
8. No significant differences in terms of their college performance, were found between those who replied and those who did not.
9. No significant differences were found between those allowing heads to be approached and those refusing.
10. College assessment of teaching ability correlated with the judges aggregate rating (based on head's reference) for grammar school teachers  $+0.335$ , for modern school teachers  $+0.330$  and for primary teachers  $+0.077$ .
11. College assessment of teaching ability with school teaching ability estimate (we are not told how this was measured) was grammar  $+0.195$ , modern  $+0.175$  and primary  $+0.138$ .
12. College assessment of teaching ability related to headmasters rating of teaching ability - grammar  $+0.280$ , modern  $+0.283$  and primary  $+0.071$ .
13. Graduates with good degrees got better posts in grammar schools but college qualifications had little relationship to promotion in the secondary modern and primary schools.
14. Teachers pursuing extra qualifications were often assessed as less satisfactory by their head teachers.
15. Age was the most important variable for promotion in primary schools, followed by number of courses attended, extra mural activities, relations with children and parents.
16. Teaching ability appeared a less important requirement for primary school promotion and correlated negatively.

17. Secondary promotion seemed related to the number of previous posts held  $r = +.769$
18. Membership of professional associations also seemed related to promotion  $r = +.800$
19. Promotion and head's estimate of the teacher bore little relationship to each other.
20. Head's assessment of the teacher had only a low correlation with the assessment at college.

They concluded:

"However it is evident that the degree of success on the training course makes little difference to subsequent teaching performance as seen by the individual's head teacher..."

By 1969 Joan Dean<sup>652</sup> a schools' advisor for Berkshire, was writing that "In spite of the research findings ... we (Berkshire) still find that the college grades have meaning. We seldom find a student with an above average mark really failing.", and "When we take a chance with someone who the college has not really recommended very strongly, we often find they were right after all."

Two things set in motion further investigations into Wiseman's and Start's work. Firstly, despite several statements to the effect that researches showed there was little or no relationship between teaching practice results and future teaching success/ability, there appeared to be no researches to support the generalised claims, except for Wiseman and Start's. Secondly, people on the 'shop floor' were

suggesting that the research finding of 'little relationship' was not true in their experience.

What is the validity of the Wiseman and Start research?

1. The study was based on 248 out of 694 students who left seven colleges and one university department in 1955. This return of only 35.6% is mentioned by Shipman<sup>483</sup> as lowering the validity of the study, and by Cope<sup>653</sup> without comment. Collins's finding that 'poor' women teachers on getting married were more likely to drop out of teaching; Taylor's finding that immobile 'poor' quality teachers were less likely to get a post; and Start's<sup>509</sup> own independent finding based on 816 students who left five Manchester colleges in 1961, all suggest that one of the major sources of a high correlation between college grades and future grades - the poor quality students, were missing from the study; thus having a considerably bigger effect than the simple effect caused by a reduction of sample size.

(Start<sup>509</sup> found in his Ph.D. research that the 68 students he was unable to trace were inferior to the main college population on almost all counts:- entry qualifications, marks for principles of education, practice teaching, English, main subjects, and mathematics.)

2. The four independent judges got correlations of between .62 and .89 on two separate occasions. As reliability correlations these would be regarded as low. Wiseman was certainly aware of this,

for three months later he got the four judges to rerate a random sample. This time, he reported in *Advancement of Science*,<sup>604</sup> he got a correlation between the first set of results and the later set of .92 which he accepted as being of a reasonable order. Has Wiseman made the basic mistake of confusing the judges ability to reasonably confirm their own earlier decisions with their relative inability to agree with each other? The pertinent correlations are the original ones, lying between 0.62 and 0.89, which mean that the judges were between 20% and 56% efficient<sup>4</sup> where forecasting each other's decisions was concerned.

3. Where the criterion of success was the judges rating of references, (already mentioned in 2) it is worth pointing to another statement which appears in the *Advancement of Science* article. "The head teachers' references showed an astonishing variation in length, appositeness and in general quality" coupled with "There seemed to be no connection between the heads' judgement of the quality of the teacher and the amount of promotion received." Yet Wiseman and Start used promotion as their main criterion of teaching success finding it "particularly attractive". Wiseman also pointed out that a. "chances of promotion to a special responsibility allowance are better in secondary schools than in primary, b. "promotion in shortage subjects is faster", c. graduates in grammar schools not uncommonly started their careers with a graded post, and d. promotion was further seen to be affected, for secondary teachers, by the speed at which they changed posts ( $r = +.769$ ) for amount of promotion correlated with

number of previous posts held) and e. the higher figure of +.80 between membership of professional associations and promotion - making oneself known? - the choice of this criterion must be at best a dubious one. In his later work Start got correlations of +.48 between subject studied at main level at college and possession of an S.R.A. post three years later, with a further correlation of +.37 between the importance of that post and main subject; again suggesting that the distortion caused by the variation in promotion chances according to what is taught makes promotion a poor choice as a criterion of teaching success.

4. Returning to Wiseman's concern about the variety of the head teachers' references, it is interesting to note that in 1937 the Review of Educational Research<sup>438</sup> noted that over 500 studies had by then looked at factors involved in teaching success. The authors listed letters of recommendation as being of no use in the prediction of teaching success. Start<sup>509</sup> was so bewildered by the results he obtained that he finished up questioning the ability of head teachers to adequately describe the professional capacities of teachers.

5. Finally, in their 1965 article Wiseman and Start obtained correlations between college teaching practice results and judges' estimates of references of +.335 for grammar, +.330 for modern and +.077 for primary teachers, whilst on assessment of teaching ability the three correlations were +.195, +.175 and +.138. By breaking down their sample into three separate groups they inevitably lower

their degrees of freedom and so the level of significance of their findings. If the above correlations had been obtained for the whole group of 248 all bar the figures of .077 and .138 would have been significant beyond the 0.01 level, with +.138 being significant beyond the 0.05 level. Not knowing the size of the sub samples the rough location of the sample correlation figure can only be guessed at, but would almost beyond doubt have been highly significant.

Wiseman and Start's research would appear to re-emphasise Nisbet's finding at Aberdeen that promotion, (once the differential factors have been accounted for) is basically a product of ambition, not a reflection of ability.

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### Brief Summary of Chapter Eight

Evidence from America and Britain has repeatedly shown qualified teachers as being regarded as superior to the unqualified. Over and over again evidences have also shown significant correlations between college estimates of student teaching ability and later estimates of the same people when teaching full time.

Considerable agreement was found between the opinions of various assessors when rating the same teachers, especially if those teachers came from the "good/poor" poles of the ability continuum.

Lack of support and guidance in early years of teaching seem to contribute to the high level of 'drop outs' from the profession. Weak students seem particularly prone to the wastage problem once 'on their own'. Those who were labelled 'poor' student teachers at college and yet were regarded as 'good' several years later almost invariably had served under a helpful head.

Promotion as a criterion of teaching success suffers from the problems of unequal promotional chances and also the unequal willingness to be job mobile shown to exist between the staffs at different types of school.

The relationship between amount of promotion as one criterion

of teaching success and classroom competence as another appears to be almost non existent. Hence the not surprising finding that teaching practice marks, in general, fail to predict promotion.

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Summary and Conclusions

Part Two

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For many years there has been research into aspects of the personality of teachers. Attitudes, intelligence, divergence, personality test scores, personality profiles have all been investigated. Sometimes the results of investigations have been compared with aspects of the personalities of people in other professions and trades, sometimes the comparisons have been internal to the profession.

Many teachers cling to the belief that it is the right personality for the job which has enabled them to become successful. Certainly many people believe that the personality of at least some of the people who taught them has had a permanent effect on their own lives/personality (Bell<sup>656</sup>). Anderson<sup>183</sup> had found that the effect of the teacher's personality tended to be relatively short lived with children mirroring the manifested personality of each of their successive teachers. This finding was supported by Murphy and Stocks and could well account for Ned Flanders'<sup>176</sup> discovery that at the beginning of the school year pupils are more concerned with adjusting to their new teacher rather than with the problems of learning.

The work of Davidson and Long,<sup>412</sup> Stocks,<sup>516</sup> Reed,<sup>285</sup> Phillips,<sup>412</sup> Roth<sup>412</sup> and Evans<sup>183</sup> all lead one to the conclusion that a pupil's academic progress is affected by his own opinion of his own worth. This is affected by his teacher's opinion of his (the

pupil's) worth. But the teacher's opinion of his pupils is affected by the teacher's own self opinion. Given a teacher who thinks little of himself he will probably also think little of his pupils causing them in turn to think little of themselves and so make less progress than they are capable of. Perhaps this can be seen as a supporting argument in favour of children meeting many teachers during the week rather than 'one teacher one class' teaching.

Neel,<sup>390</sup> Shadbolt,<sup>476</sup> Heil and Washburne<sup>253</sup> all found that pupils and students with different personality traits learned better when taught by teachers showing certain characteristics. Thus conforming pupils learned more from turbulent teachers, authoritarian students learned more readily from authoritarian tutors, extroverts learned more from teachers who used discovery methods, introverts learned more from a teacher centred learning situation. Clansky,<sup>86</sup> Ofchus and Gnazey<sup>396</sup> found that students rated as democratic tended to rate their tutors and their parents as democratic whilst those rated as authoritarian tended to see their tutors and parents as being authoritarian.

A variety of personality tests have been used and a variety of results have been obtained which eventually seem to support Sultan's<sup>519</sup> claim that teachers exhibit a roughly normal distribution of personality traits. However several researches have tended to show that deeply religious teachers are more authoritarian than either the population generally or other teachers in particular, with Roman

Catholic teachers<sup>578</sup> being the most rigid/authoritarian of all.

The fact that teachers appear to be a representative sample of the population as a whole does of course mean that a certain proportion have emotional problems which can badly effect their efficiency as teachers. Gullion and Pierce Jones<sup>233</sup>, Moore and Cole<sup>363</sup>, Heil and Washburne<sup>253</sup>, Johnson<sup>286</sup>, Ryans<sup>462</sup>, Sheldon<sup>480</sup>, Bukard<sup>68</sup>, Zimiles<sup>625</sup>, Dandes<sup>135</sup> tend to support Coombs<sup>24</sup> conclusions that teachers rated as good at their jobs typically a) identified with people rather than felt separate from them b) felt adequate and able to cope with problems c) felt wanted d) saw themselves as worthy dignified people of consequence and integrity, and so are probably no different from healthy people in any other walk of life. Garvey<sup>688</sup>

in 1966-1968 showed that this pattern still appears to exist when finding that student teachers rated as highly successful on teaching practice exhibited less conflict and greater certainty than those rated as low for teaching ability. Mann<sup>676</sup> in Britain also found that the better student teachers had rated their past lives and home conditions more favourably than those who were regarded as weak teachers.

Duggan's<sup>165</sup> work reinforces these findings. After investigating several thousand studies he showed that not one single factor had been found to consistently predict teaching competence.

Intelligence is another facet of personality extensively examined as a possible factor enabling some people to be better teachers than others. Most correlations between I.Q. scores and assessed

teaching ability have been positive but low. Thus Uttley<sup>386</sup> got  $r = + 0.19$ , Tarpey<sup>523</sup> got correlations from  $-0.113$  to  $+0.287$ , Walters<sup>584</sup> got correlations from  $-0.01$  to  $+0.11$ , Boardman<sup>656</sup> got  $+0.258$ , Skinner<sup>490</sup> quotes 23 researches all producing positive but low correlations lying between  $0.00$  and  $+0.54$ . Usually, however, the nature of the academic entrance qualifications required in order to enter college ensures the exclusion of anyone who is below average for their I.Q. score. Many writers have agreed that some cut off region seems to exist above which it is necessary to be in order to succeed as a teacher. Lovell<sup>339</sup> suggests a cut off point of about I.Q. 110, Tarpey<sup>485</sup> says 108-110, Vernon<sup>523</sup> also quotes 110 saying, further, that he had never found a successful teacher with an I.Q. below 100. Uttley<sup>565</sup> concluded from his own and other researches that although high I.Q. was necessary in order to do well as a teacher it did not follow that a person with high I.Q. would automatically turn out to be a good teacher. Baranyay<sup>26</sup>, Evans<sup>402</sup>, Halliwell<sup>239</sup>, Cortis<sup>114</sup> and the earlier work of Panton<sup>402</sup> all support these two claims.

A further aspect of teacher personality much investigated over the years has been the attitudes they hold. Several tests have been devised purely to measure the attitudes held by teachers or student teachers. The evidence of Evans<sup>186</sup> and of Solomon<sup>496</sup> would tend to suggest that these scales have some tendency to measure intellectually acquired knowledge of what constitutes an 'acceptable' attitude rather than attitudes which are necessarily part of the testee. The work of Hornsey<sup>271</sup> however showed that authoritarian student teachers

changed their opinions more than non authoritarian student teachers because of a greater need to conform. Vidulich and Kaiman<sup>271</sup> had shown this to be especially true when the authoritarian teacher was being pressured by a person held to have high status. Wilson and Goethals<sup>602</sup> provided more evidence to show that religious views affected general attitudes in teaching.

The most well known test of teachers' attitudes is the Minnesota Teacher Attitude Inventory which was developed by Cook, Leeds and Collis<sup>324</sup>. They found that teachers under 40 and those generally liked by children got higher scores than those over 40 and those who were disliked by children. Horn and Morrison<sup>270</sup> query the claim that M.T.A.I. measures a single trait of teacher personality claiming it measures at least five. Professor Oliver<sup>399</sup> queried the validity of M.T.A.I. on the grounds that the authors have made several value judgement decisions not necessarily universally agreed with. Evans<sup>185</sup> pointed out that random marking of the answer sheet is most likely to produce a negative score, whilst agreeing with the statements no matter what they said ensures being rated as likely to have good rapport with children. Gage<sup>206</sup>, Badd and Blakey<sup>67</sup> also pointed out that on chance alone low/negative scores were the most likely. Badd and Blakey further found that people who opted for extreme responses got a more favourable score than those who were moderate. Rossi<sup>450</sup>, Sorenson, Scott and Brinkley<sup>470</sup>, Evans<sup>180</sup>, Polmantier<sup>416</sup> and many co-workers all showed that M.T.A.I. was susceptible to faking. Sheldon<sup>480</sup> showed that people of high I.Q. got better scores on M.T.A.I.

than people of low I.Q.

Medley<sup>349</sup>, Tarpey<sup>524</sup>, Evans<sup>81</sup>, Jenkins<sup>285</sup> all found that M.T.A.I. scores did not predict teaching practice marks but Herbert and Turnbull<sup>258</sup>, Del<sup>143</sup>, Popham and Trimble<sup>421</sup> and Day<sup>142</sup> all found they did.

Generally the M.T.A.I. scores obtained by student teachers increase during their college careers and decrease again once they are in full time teaching.<sup>59, 181, 658, 32, 141, 272, 428.</sup> Rabinowitz and Rosenbaum<sup>428</sup> have shown that this decrease is mostly due to the lesser likelihood of extreme response being made as the young teacher grew older. Fred Kerlinger<sup>660/661</sup> by the mid 1950's had developed a new attitude test which he claimed had been built with regard to construct as well as predictive validity. By 1967<sup>302</sup> he was claiming that people exhibited two distinctly separate personality facets. He labelled these "progressivism" and "traditionalism". Typically, progressive student teachers saw 'sympathetic', 'warm' and 'friendly' as desirable teacher traits whilst 'traditionalist' student teachers saw 'efficient', 'conscientious' and 'reliable' as desirable teacher traits. Only Crocker and Williamson<sup>650</sup> have used Kerlinger's test in England to see if student teacher scores on it bore any relationship to teaching practice marks. No significant correlation was found.

Katherine Evans<sup>180, 181, 656</sup> developed and used her own test 'Teachers and teaching'. She and Walters<sup>584</sup> reported that it failed to predict teaching practice marks.

Professor Oliver having criticised M.T.A.I. for being based on

value judgements, developed a test with three scales 'Idealism', 'Naturalism' and Radicalism. Christian teachers, and older teachers and men as a group tended to be more tough minded than non Christians, young teachers and women teachers. Labour teachers were more naturalistic than Conservatives, as were non religious compared with religious and non grammar school teachers compared with grammar school teachers. Non graduate student teachers were more tender-minded than graduate student teachers.<sup>400, 539, 72.</sup>

Solomon<sup>496</sup> and Cortis<sup>115</sup> show modest correlations for one or other of the three scales with teaching practice. Steele<sup>658</sup> got a significant correlation (+0.185) between the total test and teaching practice marks.

Flexibility is another widely investigated teacher personality trait. For success in the classroom it is generally agreed the teacher needs to be flexible. Flanders<sup>241</sup>, Church<sup>656</sup>, Panton<sup>402</sup>, Joyce and Hodges<sup>290</sup> and many others having all stated in different ways that "the teacher who can exhibit a wide variety of teaching styles is potentially able to accomplish more than a teacher whose repertoire is relatively limited". Many of them have also shown a positive relationship exists between ability to adapt and assessed teaching ability<sup>402, 277, 294, 159, 505, 559, 618, 496, 158, 463, 54, 53, 121.</sup> Frequently the language of Guilford (convergent/divergent) or Getzels and Jackson (Creative) has been used by these and other researchers to mean adaptability/flexibility. There seems to be considerable evidence that for people to be rated as successful

divergers, they need to be rated as above average for conventional I.Q.<sup>75, 608, 433, 397.</sup> Torrance<sup>670</sup> had found that student teachers regarded as highly original when followed up some six years later were neither conforming nor non-conforming all the time. But they did appear to be more involved and more creative in their classroom teaching than did those who had been rated as low on originality when they were students. The 'original' teachers more than the unoriginal teachers, showed evidence that they had continued with their own learning. They were also less prepared to make suggestions to their superiors.

With the exception of flexibility it does seem that successful teachers do, and indeed because of their differing tasks and differing pupils need to, display different personality traits and attitudes. But this very fact coupled with the fact that the way another person's worth and behaviour is evaluated depends upon the personality and self ratings of the evaluator can be seen as something likely to lower the validity of teaching practice marks. Eric Hall<sup>646</sup> sees the evaluator's personality as one of four factors which interact to affect the performance of a student teacher. The other three being the student himself, the school he does his teaching practice in and the children he tries to teach. Thompson,<sup>540</sup> Haines,<sup>237</sup> Shipman<sup>483</sup> all found different reasons for students being anxious during their teaching practice and so perhaps not their normal personalities.

Colleges are no longer able to pick and choose the schools they use for practice teaching and so have to now use schools which they regard as 'poor'. Almost all schools would appear to be run by

head teachers who do not know what 'professional' education the students have received.<sup>110</sup> Evidence from Witrock<sup>607</sup> suggests that student behaviour often alters markedly once they know what their tutor expects of them on teaching practice. Thompson<sup>537</sup> showed that the way pupils rated their student teacher most affected the way the student behaved. Susan Klein<sup>689</sup> has recently shown that when student behaviour is deliberately varied from a positive attitude and response to the teaching they received to a negative one so too did the teacher behaviour alter from positive to negative. Anderson<sup>653</sup> has shown that the amount of group intimacy in a classroom affected girls whilst class friction lowered learning rates for pupils aware of the friction. Peek<sup>570</sup> has shown that pupils from poor socio-economic area schools were more likely to rate their student teachers as ineffective than pupils attending schools in high socio-economic areas. Turner<sup>561</sup> found similarly that the relationship between pupils and teachers varied with the pupils socio-economic background.

Learning for children from low as opposed to high socio-economic backgrounds required a more business like relationship on the part of the teacher. Not surprisingly by the end of a practice most students have moved significantly towards the behaviour patterns exhibited by the teachers in their host school.

Beery,<sup>418</sup> Dalton and Popham have all found that the more educational theory a student had met the better he tended to do on teaching practice.

It is often stated that to have a tutor in the classroom must seriously alter the situation. Canton, Rodgers, Caspari and Professor Eggleston have all at one time or another voiced this belief. The only experimental evidence that appears to exist however (Masling and Stern<sup>345</sup>) suggests that in fact the presence of an observer in the classroom is negligible.

One factor which makes the prediction of student teaching success (from any chosen predictor) more difficult is the habit of tutors only using part of a rating scale. In America, typically, student teachers receive grades from their supervisors which are bunched in the 'A' and 'B' categories<sup>570</sup>. In Britain, typically, the bunching occurs in the 'B' and 'C' categories.<sup>646</sup>

Where 'Pupil academic gain' is used as the criterion of teaching success Rudins<sup>454</sup> has pointed out that the effect of other teachers, parents, peers, club leaders, etc. cannot be measured. Rolfe<sup>449</sup> had shown that pupils tend to learn more in bigger schools whilst Jenny Poole<sup>417</sup> showed that the amount of questioning a teacher allowed the class to ask significantly affected the amount they learnt.

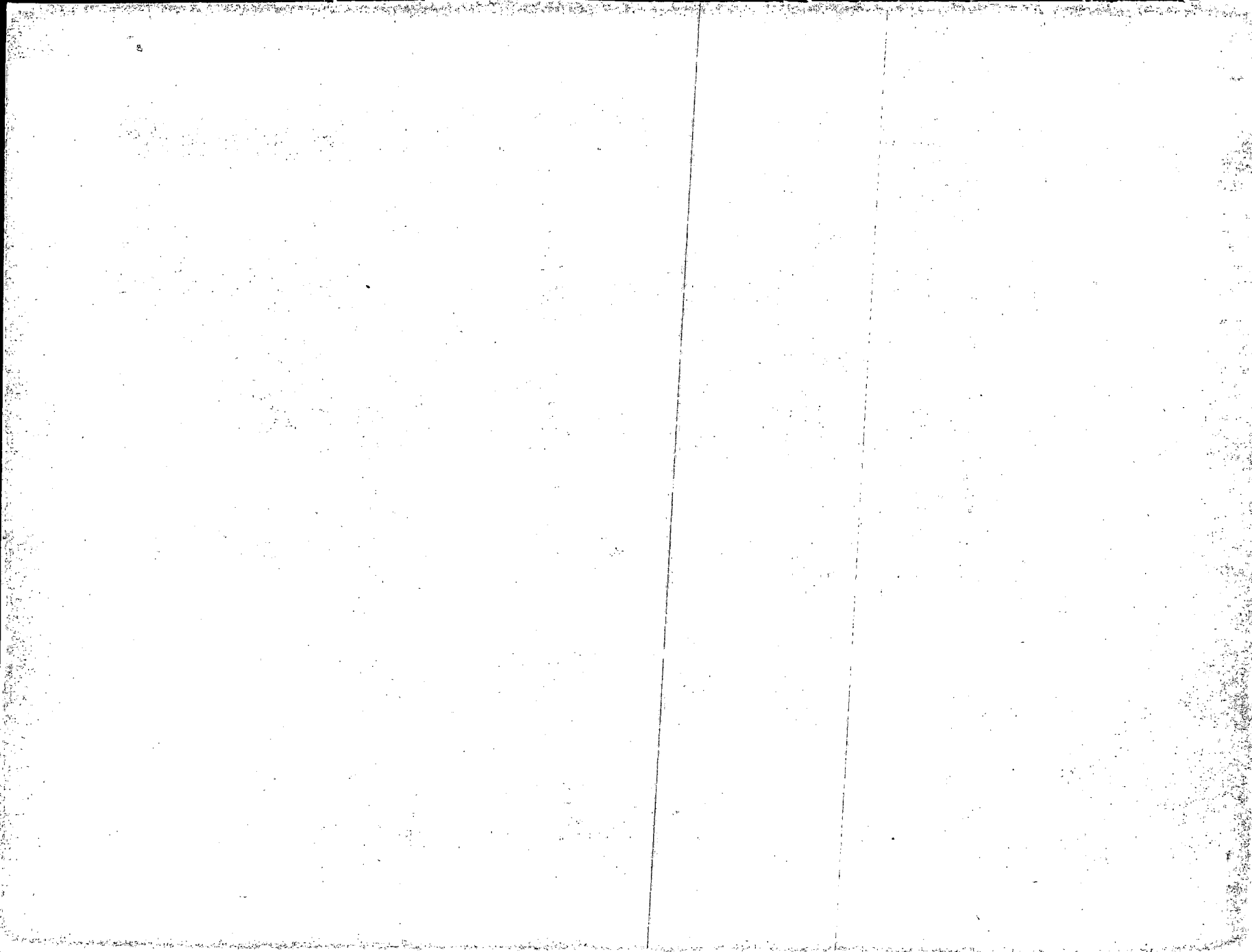
Hall<sup>238</sup>, Collier<sup>99</sup> and Shipman<sup>483</sup> have all shown that it is easier for a student to get a high teaching practice mark in schools rated by tutors as 'good' than it is for them to get a high mark in schools rated as 'poor'. Van Caille<sup>651</sup> found that the younger the children being taught the more likely it was that the student would get a good teaching practice mark, a finding supported by Margaret Williamson.<sup>650</sup>

Generally speaking although there is disagreement about average

student teachers classroom performance the evidence would suggest that people, whether teachers or laymen, can accurately agree about "poor" and "good" quality teaching<sup>321, 648, 174, 419, 348, 490, 110, 289.</sup> Beery<sup>35</sup> showed that in general, besides agreeing as to who were good and who were poor teachers, observers, from a variety of differing professions, when asked to rate 409 teachers for teaching ability, identified the group of unqualified teachers as being poorer than the qualified. Orlando Lupore<sup>340</sup> and Mildred Collins<sup>102</sup> similarly found that unqualified teachers were rated as significantly poorer than qualified teachers. Mildred Collins<sup>101</sup> found in another study that poor student teachers became poor qualified teachers. Only those poor student teachers who had very high academic qualifications managed to change their rating for the better and that only after several years of teaching experience. Meriams,<sup>174</sup> Swineford,<sup>520</sup> Fielstra,<sup>194</sup> Gowan,<sup>225</sup> Cole,<sup>97</sup> Labriola,<sup>314</sup> and 315 Pearce,<sup>406</sup> Tudhope,<sup>556</sup> Nisbet,<sup>509</sup> Simun and Asher,<sup>509</sup> Start,<sup>509</sup> and Joan Dean<sup>652</sup> all provide supporting evidence for the general conclusions which Lupore and Collins come to - namely that good student teachers tend to become good qualified teachers whilst poor student teachers tend to become poor qualified teachers in as far as their assessed classroom teaching ability is concerned.

Where promotion is used as the criterion of teaching success Walters<sup>554</sup> found a significant relationship between the amount of promotion received and college teaching practice marks but Wormald,<sup>612</sup> Wiseman and Start<sup>604</sup> and Nisbet<sup>393</sup> have all failed to find any

relationship between a students' college teaching practice marks and subsequent promotion in the teaching profession. This can partly be explained by the disparity of promotion between primary and secondary schools and between subjects where teachers are in short supply and those where there are plenty of teachers. Probably the single most important reason is that given by Nisbet<sup>393</sup> namely - ambition. Ambitious teachers apply for advancement more frequently than teachers with a lower level of ambition, but ambition does not appear to be related to assessed teaching ability.



Part Three

Aims of the Empirical Research

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Aims of the empirical research

In Britain during the era of the early Church colleges one of the main assumptions underlying selection of student teachers was that good teachers needed to be good practising Christians. This has gradually ceased to be regarded as an essential prerequisite. By the end of the nineteenth century the need for people entering teaching to be better educated was reflected in the demand that entering students should have at least passed the Queen's scholarship examination. At that time colleges could afford to pick and choose amongst the candidates. For the 12,120 candidates for the 1899 scholarship examinations only 2,732 college places existed.

Since then the ratio of applicants to places in colleges has fallen. In some years, for example 1970, less than the needed number of "acceptable" applicants applied for places. However the general trend in Britain since the second world war has been for the number of applicants to colleges, the number of students in colleges and the number of teachers employed in schools to rise. As a result for the first time in many years the general picture in the early 1970's is of enough teachers to staff the schools. This is partly reflected in the N.U.T. demands for entering students to have higher qualifications and in another of their demands for less children per teacher.

The recent steady rise in unemployment would seem to be again producing a situation similar to that of the 1930's where teaching was seen as a safe refuge from unemployment. The relative difficulty of gaining a place at university is also causing more students to consider colleges of education as sources of an higher education. The White Paper<sup>698</sup> based on the James report has also suggested that the time has nearly arrived for a cut back in the numbers of newly qualified teachers which are needed to staff the schools.

As a result of these factors for the first time in many years all colleges now have more applicants than places. Nationally selection may become a reality. The general aim of this study was to look at the ways in which people come to teaching as a career, the ways in which they were selected and the factors affecting the marks they were given whilst on teaching practice. The specific aim was to see whether it was possible to predict how well students will be judged to be performing when they are teaching.

To meet the needs of this aim several year groups of students at Bede College, Sunderland College and Shenstone College of Education were investigated. To the actual selection tools of G.C.E. grades and interview impressions were added an intelligence test and a specially developed test of verbal flexibility. The two additional tests were not used for selection purposes but were used to give a

measure of the students' convergent and divergent abilities. The test of flexibility was developed to test the hypothesis that "a successful teacher needs to be flexible". It was hoped that a relationship would be found to exist between test measured verbal flexibility and tutor measured classroom performance.

#### About the Tables

A total of 557 students were tested out of the 851 who formed the research samples. Six separate groups of students were studied and these groups can be identified by the following codings which are prefixed to their particular student's numbers.

- S = Sunderland College of Education 1963-66 intake
- B = Bede College of Education 1961-64 intake
- 1B = Bede College of Education 1963-66 intake
- 2B = Bede College of Education 1964-67 intake
- 3B = Bede College of Education 1967-1970 intake
- Sh = Shenstone College of Education 1970-1973 intake

Chapter Nine

Bede College 1961 - 1964

Bede College 1961-1964

1961 was the ~~second~~ year in which students in England and Wales entered colleges to follow a three year course of study leading to certification as a teacher. Previously non-graduates had normally followed a two year programme of training.

During the academic year 1960-1961 the staff of Bede College, Durham, interviewed and tested many young men who wished to become teachers. These were differently treated from subsequent years in that they were all given the National Institute of Industrial Psychology I.Q. test number 90 as part of the selection procedure. No information appears to exist as to how the N.I.I.P. test 90 results were used. Sixty five of the applicants tested on N.I.I.P. 90 were subsequently offered a place at Bede, accepted it and completed the three year course of professional preparation.

In 1964 Bede College used three categories to grade final examination results in Education - Distinction, Pass and Fail. In practice the two extreme categories were used sparingly. Of the 65 students who took the N.I.I.P. test and also took the final examination in Education:

2 students were awarded a Distinction in Education

61 students were awarded a Pass in Education

2 students were awarded a Failure in Education.

Of the two students gaining distinctions one ranked 11th on the

N.I.I.P. test of I.Q. The other ranked  $43\frac{1}{2}$ . The two failing students ranked 3rd and 45 for I.Q.

The N.I.I.P. scores were compared with teaching practice marks. 51 of the 65 students had got all three teaching practice marks recorded in their personal files. The College at that time used a scale from A to E to grade student teaching. These grades were converted to a numerical value on a thirteen point scale as follows:-

A = 13

A- = 12

B+ = 11

B = 10

B- = 9

C+ = 8

C = 7

C- = 6

D+ = 5

D = 4

D- = 3

E+ = 2

E = 1

Only one student failed the final teaching practice and only one was awarded the grade of 'A' out of the 51. The final teaching practice mark was not, at that time, a combination of the three practices and it would have been theoretically possible for a

student to get two As for his first and second year practices and yet fail to qualify as a teacher because he failed his final practice. The lack of use of the two extremes of the range of marks demonstrates the continuing presence of the marked kurtosis which Cattell<sup>83</sup> mentioned some 30 years earlier. Because of these two factors plus those mentioned in Chapter 7 concerning factors which affect teaching practice marks in all of the Bede samples the marks have been summed for the three practices. This means that in every case the mark used is the sum of three different people's opinions over a period of time (two years in the case of the 1961-64 students), in three different schools. Another possible factor which could not be investigated, as the information was not available, is that these Bede students will have carried out one of their first and second practices in a secondary school, the other in a primary school. Only the third practice would have been in a school where the age range taught was entirely of the students' own choosing.

The Pearson product moment correlation between N.I.I.P. 90 scores and total teaching practice marks was  $-0.25$ . This shows a relationship significant beyond the 0.10 level but just failing to reach significance at the 0.05 level. The N.I.I.P.<sup>674</sup> found this negative relationship to be very surprising but suggested it was probably due to the unreliability of the teaching practice marks.

The distribution of the I.Q. scores was reasonably normal with a shift of the mean towards superior I.Q. This would seem to

provide continuing support for the findings of Burt and of Terman that various professions tend to have their members grouped normally in I.Q. bands with means above the mean of the general population.

The teaching practice marks showed very heavy usage of the "B" and "C" categories for the second and third practices.

Contrary to most of the evidence previously cited regarding teaching practice marks and I.Q. scores, these particular results show a slight tendency for those students with lower I.Q. to be regarded as the better student teachers.

Chapter Ten

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Sunderland College of Education

1963 - 1966

Sunderland College of Education 1963-1966

Sunderland College of Education is a mixed L.E.A. college. In July 1966 there were 164 students in the third year and of these 27 volunteers were tested.

The final teaching practice at Sunderland College of Education was assessed by teams of four or five tutors. Each team saw 25 to 30 students at least once during the practice. The team of tutors then pooled their decisions and agreed on an average mark for each of their students.

Sunderland College used the letter grades from A to E with pluses and minuses when marking teaching practice. Of the 1963-1966 group of students only one failed the final teaching practice. This is felt at Sunderland to be due to a policy of advising failing students to leave after their first or second practice. Only the final teaching practice marks were available on the Sunderland students. When the volunteer sample was compared with the total population from which it had been drawn it was not significantly superior for assessed teaching ability although a slight tendency to do better appeared to exist.

Table No. 1

Test to compare the teaching practice marks awarded to a volunteer sample of Sunderland College of Education students (1963-1966) with the population as a whole.

'N' sample volunteers	'N' non volunteers	Degrees of freedom	't'	level of significance
27	137	162	0.72	N.S.

The following results obtained between Otis I.Q., C.P.T.P. first revision, and G.C.E. scores on the one hand and the final teaching practice marks on the other can therefore be extrapolated to the whole year group with a certain amount of caution.

Table No. 2

Product moment correlations between various predictors and final teaching practice marks for 27 third year students at Sunderland College of Education 1963-1966

Correlation between:	r
G.C.E. marks and final teaching practice mark	= 0.002
I.Q. score and final teaching practice mark	= -0.19
C.P.T.P. (flexibility) score and final teaching practice mark	= -0.09
C.P.T.P. score and G.C.E. mark	= -0.24
I.Q. score and G.C.E. mark	= +0.29
I.Q. score and C.P.T.P. score	= +0.39

Only the correlation between scores obtained on the test of flexibility and the I.Q. test were significant beyond the 0.05 level. None of the other correlations reached the 0.10 level. None of the predictors could in fact be used as a selection device if a) teaching practice results are regarded as important and b) the results from this sample were found to apply to the student teacher population in general.

Chapter Eleven

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Bede College of Education

1963 - 1966

Bede College 1963-1966

During the academic year 1962-1963 a total of 309 students filed application forms with Bede College. 139 of these were subsequently offered places for the academic years 1963-1966. Twenty of the 139 withdrew before the academic year started, mainly to take up offers of places at university. Of the 119 who entered Bede in September 1963 there were 112 who took the final examinations in June 1966.

Bede College during the academic year 1965-66 had a policy of not making it compulsory for students to take tests other than those directly concerned with their academic work. Thus anyone tested would be a volunteer. Another factor which could be expected to affect the number of people attending a testing session was the decision that testing for this study should happen on the week day allocated to 'Education' during what would normally be 'educational theory' time. At Bede attendance in the third year at all lectures was voluntary in 1966. The number turning up for a testing session on an education day being directly proportional to the popularity of any lecture which immediately preceded it.

To combat these two possible causes of a reduced sample size it was decided to carry out the testing immediately after tea rather than after any other lecture and to inform the students of the testing session via a notice signed by the principal (hopefully

the principal's signature would add considerable weight to the request to attend.) The following notice appeared on the student board approximately ten days prior to the testing.

"The gentlemen of the third year are asked to attend a testing session in the Little Theatre at 4.00 p.m. on the 14th of February 1966. Two tests will be given. They should take approximately  $1\frac{1}{4}$  hours."

K.G.C.

On the 14th February 1966 the main Geography students were away from the college on a field trip. The main Science students had had a visit by an invited lecturer and arrived after the Otis I.Q. test had started, so only took the flexibility test. Because of the impending final examinations and final teaching practice no other testing time was available.

87 students were tested.

3 failed to sign their names

15 were excluded because they were either shortened course students, or because their record files contained no record of their teaching practice marks for the first and/or second teaching practices.

The remaining 69 formed the research sample. Of these complete data was available on 45.

The first test, given shortly after 4.0 p.m. on Thursday 14th of February, was the Otis Gamma I.Q. test Form A, which is a general

intelligence test. It takes exactly half an hour excluding administration time. The Otis I.Q. test was followed immediately by the first edition of the C.P.T.P. flexibility test which also took exactly 30 minutes excluding administration time. Both of these tests are described in the appendices.

Once the final teaching practice was completed and assessed in late June 1966 the full range of data was available. This consisted of:-

1. Interview mark from two tutors
  2. G.C.E. results
  3. Otis I.Q. score
  4. Flexibility score
  5. Teaching practice marks
1. Interview marks were crude. Tutors gave three grades:-

Positive

Average

Negative

In practice some tutors tended to add pluses and minuses to these three grades. These were converted to numbers as follows:-

Positive	2
(Positive minus Average plus	1.5
Average	1
(Average minus Negative plus	0.5
Negative	0

Thus from two interviewing tutors it was possible to obtain a totalled interview mark ranging between 0 and 4, in nine possible categories.

2. G.C.E. results

In order to convert this to a numerical value 1 point was given for each Ordinary level pass and 2 points for each Advanced level pass. Thus a student entering College with 5 "O" levels and 2 "A" levels would get a total of 9 points.

3. Otis I.Q. score

This being already quoted as a number no conversion was required.

4. Flexibility score

Again this being a numerical score no conversion was required.

5. Teaching practice marks

At that time Bede tutors used a full range of grades from "A" to "E". If a student was awarded an "E" he had failed that particular practice. All "A" and "E" grades awarded during final practice were checked by external examiners. In practice most tutors used the additional grades of pluses and minuses.

The letter/grades were converted to numerical values as follows:-

A	13
A-	12
B+	11
B	10

B-	9
C+	8
C	7
C-	6
D+	5
D	4
D-	3
E+	2
E	1

From three teaching practices it therefore becomes  
theoretically possible for a student to acquire a total  
mark on a range from 3 to 39.

Tutor Assessment of Student Teaching at BedeCollege 1963-1966

During the three years at College a student will normally do three teaching practices. His first and second will be alternately in a Primary and a Secondary school or vice versa. His final practice is in a school of his own choosing (with regards to age range).

Tutors are assigned to a school or group of schools by the tutor in charge of teaching practice. Each tutor sees approximately 12 students a year. He is wholly responsible for the teaching practice marks which he gives to his students, but may call in other members of staff to advise him (or the student) if he desires.

Tutors tend to visit their students once a week. Those students requiring more help tend to get more than one visit each week.

New tutors joining the staff are given the following summary of what to look for on teaching practice. All tutors are supposed to use the summary as a guide enabling common standards to be established. (No check was made during 1965-1968 to see whether the guide was being followed or had even been read by supervising tutors. Certainly at least one dichotomy existed during that time. One group of tutors used the full range of marks from 'A' to 'E' for the first and second teaching practices, others refused to use the

'A' category on the grounds that it left no room for the student to strive for improvement or for tutors to show a student had improved on his second or third practice.)

All new tutors were given the following guide shortly before they were involved in their first teaching practice. This practice remained unaltered for the three groups of students studied.

CRITERIA OF ASSESSMENT OF PRACTICAL TEACHING

Purposes of the scheme

When the Ministry examined practical teaching the assessors belonged to a single central body which had wide experience of teaching standards. Under the present de-centralised system the assessors vary greatly in experience and many students are seen only by internal examiners. Conflicts of opinion on teaching grades are in practice not very frequent; but it seems likely that this agreement is due more to good will than to community of standards: whenever investigators have systematically compared the personal judgments made by different people on the same candidates they have revealed a certain proportion of disturbing discrepancies. It therefore seems desirable to attempt to work out a set of criteria which shall, more or less, be common to the staff as a whole.

It is not suggested that a tutor should systematically mark a particular student on all the items in the accompanying table and calculate an arithmetical average. The first purpose of the tables is to help to bring into line the all-round intuitive impressions we form of the students we observe. These general impressions are usually based on a small number of qualities observed in the student; it is suggested that when a tutor has formed a general impression of a student, he should look through

the list to see if any other criterion has escaped his attention which may lead him to modify his first impression.

The second purpose of the tables is to suggest standards by which to rate the discipline, the questioning skill and other qualities of a student.

## I Management of children

### (1) Discipline

(A student's performance must be judged in the light of the conditions of the particular school and class.)

A	B	C	D	E
No difficulty whatever in controlling class. Student has quiet authority	Control good. Student gets good order and usually secures everybody's attention before addressing class; but not always with good humour.	Control reasonably effective. Student succeeds in quelling talking but only by getting everybody annoyed and giving punishments. But he appears likely to establish competent control with a year or two's experience.	Control weak. Student has difficulty in stopping children talking and appears likely to have difficulties with discipline in ordinary school in his career.	No control.

(2) Relations with class

A	B	C	D
Has great natural capacity for getting in tune with children and evoking an enthusiastic response.	Good: he gets on well with children and evokes a lively response from them. Gives due attention to the individual.	He gets on reasonably well with children and can get down to their level. Tries to give attention to the individual.	Has difficulty in making real contact with children; tends to speak over their heads or outside their experience. Tends to forget about the individual.

## E

Fails to make contact with children.

(3) Enthusiasm and liveliness of manner(4) Giving Praise

A	B	C
Student is adept at giving commendation for good answers and selecting the strong points of wrong answers to build on for his next question. Always finds cause	Student habitually commends good answers but is not always successful in dealing encouragingly with bad answers. Rather indiscriminating in praise or	Student makes effort to commend good answers but has difficulty in finding anything to praise in wrong answers.

A

B

for praise in written work.

unencouraging in criticism

Uses discrimination and continually presents fresh standards for children's achievement.

of written work.

D

E

Student gives little praise for good answers and merely rejects wrong answers.

Student makes no comment on good answers and reproves children for wrong answers.

II Teaching skill

(1) Questioning

A

B

C

Student can conduct class through chain of reasoning by questions, making full use of wrong answers and continually referring to children's experience.

Student naturally works by questioning and relates his questions to the children's experience. He is able to conduct a class through a short chain of reasoning by

Student generally asks questions rather than giving lectures; he distributes questions over the whole class but pays special attention to the duller children.

B

questioning and building on wrong answers.

C

His questions are related to the children's experience and he attempts to build on wrong answers but he is hardly able to conduct a class through a chain of reasoning.

D

Student tends to lecture; fails to distribute questions widely; is apt to get away from the children's experience; makes little use of wrong answers; continues questioning too long.

E

Student continually lectures; his questions rarely use opportunities to refer to the children's experience.

- (2) Initiative and imagination (may refer both to scheme and to individual lessons)

A	B	C
Exceptionally fresh and inventive in approach to lesson material.	Has talent for devising fresh openings for topics; takes trouble to try out fresh ideas.	Willing to try fresh ideas if suggested by tutor.

D	E
Dull presentation; takes little trouble to get out of conventional rut.	Very dull and stereotyped method.

- (3) Material of lesson: preparation: notebook.
- (4) Exposition; clear explanation and vivid narrative.
- (5) Use of teaching aids: pictures, filmstrips, school broadcasts, science demonstrations, etc.
- (6) Organisation of practical work: art, craft, woodwork, science, drama, P.E., environmental studies, etc.

### III Personal Qualities

- (1) Reliability, conscientiousness

A

Very conscientious,  
takes great trouble  
over preparation,  
marking, etc.

B

Careful,  
conscientious,  
takes trouble  
over work.

C

Generally  
conscientious,  
but slack at  
times.

D

Careless,  
takes little trouble  
or pride in work.

E

Irresponsible  
and slack.

(2) Sincerity

(3) Keeness and co-operation in school activities.

(4) Acceptability with school staff.

(5) Voice and appearance.

Research Findings Bede College Students - 1963-1966

Two sets of zero order product moment correlations were computed from the data.

- a) Those correlations where the maximum size of sample for the two sets of data was used.

Table No. 3

<u>Bede College 1963-1966</u>			
Correlations between	r =	N =	level of significance
Total teaching practice and I.Q.	+.36	49	0.02
Total teaching practice and Flexibility score	+.38	69	0.01
Total teaching practice and G.C.E. score	+.07	69	N.S.
Total teaching practice and Interview	+.332	67	0.01
I.Q. and Flexibility score	+.464	49	0.001
I.Q. and G.C.E. score	+.46	49	0.001
I.Q. and Interview score	+.233	45	N.S.
Flexibility and G.C.E. score	+.16	69	N.S.
Flexibility and Interview score	+.33	67	0.01
G.C.E. score and Interview score	+.152	67	N.S.

Means and standard deviations for the various measures used in the investigation of students at Bede College, Durham, 1963-1966.

Criterion	Sample Size	Mean	Standard Deviation
Otis I.Q.	47	117.74	6.53
G.C.E. score	69	9.42	3.08
Flexibility score	69	69.16	13.97
Interview mark	67	2.88	0.79
Total T.P. mark	69	22.64	5.03

- b) The second set of correlations were computed for the 45 students on whom complete data was available. The following zero order correlations were the one from which the various levels of multiple correlation were subsequently calculated.

Table No. 5

Bede College 1963-1966

Correlation between	r	Sig. level for N = 45
Total teaching practice and I.Q.	+ .356	0.02
Total teaching practice and C.P.T.P. Flexibility score	+ .348	0.05
Total teaching practice and G.C.E. score	+ .046	N.S.
Total teaching practice and Interview	+ .381	at 0.01
I.Q. and Flexibility score	+ .489	0.001
I.Q. and G.C.E. score	+ .448	0.01
I.Q. and Interview score	+ .233	N.S.
Flexibility and G.C.E. score	+ .139	N.S.
Flexibility and Interview score	+ .232	N.S.
G.C.E. and Interview score	+ .238	N.S.

From this it can be seen that all of the correlations were positive with Otis I.Q. (significant beyond the 0.02 level) and C.P.T.P. (flexibility) score (significant beyond the 0.05 level) and interview grade (significant beyond the 0.05 level) all showing an ability considerably better than chance of predicting the aggregate mark obtained over three teaching practices. Only G.C.E. score failed to differ significantly from chance as a predictor of teaching practice performance as assessed by three different tutors.

Amongst the predictors there was a very considerable relationship between Otis I.Q. and flexibility score (beyond the 0.001) and also between Otis I.Q. and G.C.E. score. The rest were all non significant in their relationship with each other. These zero order correlations were then tried in battery to see how well they predicted teaching practice performance when used together. The multiples were calculated from the zero order correlations on the Birmingham University computer. They were as follows.

Table No. 6

Multiple Correlations based on the data from 45

Bede College 1963-66 students

T.P. = 1, I.Q. = 2, C.P.T.P. = 3, Interview = 4, G.C.E. = 5		
Correlation between	R=	Level of significance
R1.23	0.5400	0.001
R1.24	0.4698	0.01
R1.25	0.378	0.05 (just fails to reach 0.01)
R1.34	0.5611	0.001
R1.35	0.4895	0.001
R1.45	0.3838	0.01
R1.234	0.5900	0.001
R1.235	0.5563	0.001

R1.245	0.5017	0.001
R1.345	0.5671	0.001
R1.2345	0.6146	0.001

Whilst only the interview results appeared to have a highly significant predictive relationship with the criterion of teaching practice marks at the zero order when the various predictors were used in pairs, only a combination of G.C.E. score with I.Q. failed to reach significance beyond the 0.01 level.

Because the error attached to multiple correlations increases so rapidly with each succeeding level of multiple correlation it was decided to compute the multiple regression coefficients and interpret these rather than progress further with interpretation of the multiple correlation coefficients.

All four predictors were first looked at operating together as a battery. Then all combinations of three predictors from the four possible and finally all combinations of two predictors from the four possible.

Criterion (Teaching practice marks)	is variable No. 1
I.Q.	is variable No. 2
CPTP (Flexibility)	is variable No. 3
Interview	is variable No. 4
G.C.E.	is variable No. 5

Table No. 7

Beta weights and standard error of the beta weights  
 derived from the scores of Bede College students  
 1963-66

Variable No.	Beta Weight	Standard Error of Beta Weight
2	0.2745	0.1728
3	0.3757**	0.1577
4	0.2763	0.1577
5	-0.1950	0.1688
2	0.1931	0.1578
3	0.377**	0.1577
4	0.2484	0.1558
3	0.4310**	0.1539
4	0.3014	0.1569
5	-0.0856	0.1541
2	0.3653**	0.1685
4	0.3433**	0.1551
5	-0.1994	0.1687
2	0.3049	0.1719
3	0.4250**	0.1552
5	-0.1497	0.1668

Variable No.	Beta Weight	Standard Error of Beta Weight
2	0.2385	0.1552
3	0.4227**	0.1552
2	0.2826	0.1533
4	0.3152*	0.1533
2	0.4196*	0.1667
5	-0.1420	0.1667
3	0.4234**	0.1533
4	0.2828	0.1533
3	0.4921**	0.1505
5	-0.0224	0.1505
4	0.3923**	0.1535
5	-0.0474	0.1535

N = 45

\* Significant beyond the 0.05 level

\*\* Significant beyond the 0.01 level

Taking all four predictors together it would appear that only variable number three (flexibility score) makes a significant contribution to the total prediction of teaching

practice marks. This continues to be borne out when combinations of three from four are used. Only in the one case where the flexibility contribution is removed from the battery do we find that I.Q. and interview make a significant predictive contribution. At first sight this finding appears to be at variance with the zero order correlations at which level the correlations between I.Q. and the criterion ( $r = +0.356$ ) and Interview ( $r = +0.381$ ) are both higher than the correlation between flexibility and the criterion ( $r = +0.348$ ). However this is explained in the multiple battery by the inter-correlations between the predictors. In effect there is more common ground between the variables I.Q., Interview and G.C.E. than there is between flexibility and these variables. This overlap effect can still be seen when the variables are examined in batteries of two. Always the flexibility score when present makes an highly significant predictive contribution; only when it is absent from the battery do the other predictors make a significant predictive contribution. I.Q. when paired with G.C.E., interview when paired with I.Q., and interview when paired with G.C.E. (This effect is seen with the other samples and will be discussed further in the summary.)

Were the Arts students at Bede more divergent than the science students?

Liam Hudson<sup>274</sup> had reported that science students tend, as a group, to get lower scores on tests of divergent thinking ability than do arts students. El Meligi<sup>175</sup> had not found this difference in his later research. As one of the predictors being used was a test of verbal flexibility/divergent thinking ability it was necessary to find whether differences exist between these two groups. At the same time the other predictors being used and teaching practice performance were similarly compared.

The "science" student group was made up of 26 students taking either 'wing' science or mathematics as their main academic study during their three years at Bede. The remaining 43 students were classified as 'non science'.

Of the 26 'science' students only the 8 'main mathematicians' had taken the Otis I.Q. test, the wing science students having missed the first test, as previously mentioned, in order to attend a visiting lecturer's seminar. I.Q. was therefore not compared between the 'science' and 'non science' students.

Table No.

8

t test to compare the scores on various measures of 'science' and 'non science' students at Bede College 1963-1966.

Comparison between	N 'science' students	N non science students	Degrees of freedom	't'	Level of significance
G.C.E. scores	26	43	67	2.755	0.01
Interview marks	26	41	65	.230	N.S.
Teaching practice scores	26	43	67	1.055	N.S.
C.P.T.P. (flexibility) scores	26	43	67	.377	N.S.

These results appear to show more agreement with El Meligi than with Hudson in that the science and Arts students did not show a significant difference for their scores on the test of flexibility. Indeed the mean score for the science students was higher than that of the arts students, however this might be explained by the superiority of the science students in as far as their academic qualifications were concerned. Academically they were significantly superior (beyond the 0.01 level) to the non science students.

The two groups of students were not significantly different from each other with respect to either the marks they were awarded at interview or for teaching ability.

Chapter Twelve

Bede College of Education

1964 - 1967

Research findings Bede College students 1964-1967

The 1964-1967 Certificate students at Bede College were tested whilst in their second year in June 1966, some four months after their third year peers had been tested. Unlike the third year students they had had an opportunity to see the testing situation occur previously. Also unlike the third year they had more opportunity to know what it was all about - one of the conditions upon which testing was originally agreed to by the student union being that the third year should be told what I was trying to do after I had tested them.

Mr. Collier again agreed to sign a note requesting the second year students to turn up for testing in the Little Theatre. Sixty-five students attended the testing session and were given the Otis I.Q. test, and the C.P.T.P. (flexibility) test Second Revision. They also provided data concerning their academic qualifications at the time they had entered Bede College. There were at that time 122 men in the second year at Bede College. Of the 122 men two left before their final teaching practice, three were mature students on a shortened course, one was sick throughout the final teaching practice and nine had to be excluded because their second teaching practice marks were not available.

The Bede College Academic Board during 1966-67 had decided to abandon the scale from A to E with pluses and minuses and to use instead a four point scale of D for distinction, C for credit, P for

pass and F for fail for teaching practice assessment. As a result whilst the second practice grades were converted to marks on the 13 point scale from A = 13 to E = 1, the third year grades were converted to marks on the 4 point scale D = 3, C = 2, P = 1 and F = 0.

In the third year the grades were allocated as follows:

F to 3 students

P to 100 students

C to 15 students

D to 2 students

Thus once again very heavy use had been made of the middle grades (in this case pass and credit) and very little use of the extreme grades when assessing teaching practice.

However when the summated marks for all three practices were considered the distribution was much closer to normal. The distribution of the observed frequencies were tested by chi square goodness-of-fit to a normal distribution; with the mean of the observed teaching practice marks at 9.046, standard deviation at 1.672 and  $N = 65$ . For five classes of data three degrees of freedom were lost. The obtained chi square of 2.78 failed to reach significance at even the lowly 0.10 level. There was therefore no reason to assume that the data was not drawn from a normal distribution.

Table No. 9

t test to compare the scores for teaching practice marks of those 1964-1967 Bede College students who were tested with those of the students who were not.

'N' tested	'N' not tested	Degrees of freedom	't'	Level of significance
65	42	105	2.017	beyond 0.05 level

Thus it would appear that those students who were regarded as weaker teachers were significantly less likely to turn up for a testing session at which a series of tests were being used with the express purpose of trying to predict their teaching practice scores. So bearing in mind the significant difference between the tested sample and the remainder of the 1964-67 population the sample was then further investigated for the relationship of the various predictors to the criterion of assessed student teaching ability; and for their relationship with each other.

Table No.      10

Zero order correlations based on the tested sample  
of Bede College students 1964-1967

	Correlation	Level of significance
Otis I.Q. and G.C.E. score	$r = -0.215$	N.S.
Otis I.Q. and C.P.T.P. (flexibility)	$r = +0.074$	N.S.
Otis I.Q. and Interview score	$r = -0.120$	N.S.
G.C.E. and C.P.T.P. score	$r = +0.161$	N.S.
G.C.E. and Interview score	$r = +0.012$	N.S.
C.P.T.P. and Interview score	$r = -0.049$	N.S.
Otis and total teaching practice mark	$r = -0.086$	N.S.
G.C.E. and total teaching practice mark	$r = -0.082$	N.S.

Continued

C.P.T.P. and total teaching practice mark	$r = +0.091$	N.S.
Interview and total teaching practice mark	$r = -0.024$	N.S.
N = 65		

These correlations between I.Q., G.C.E. and Interview as predictors and teaching practice as the criterion were negative. (Negative predictive correlations only happened with one other set of data, namely the Shenstone 1970-73 sample where once again those students who came to be tested were significantly superior for measured teaching performance when compared with those who did not attend the testing session.) This may well be due to the distortion caused by the skewed nature of the volunteer sample. Such was the level of distortion of these zero order correlations, when compared with any of the other sample in the study, that as well as being themselves all not significantly different from chance as predictors of the aggregate teaching marks of the 1964-67 Bede volunteers, they also failed to reach a significant level of relationship with the criterion when used in all possible combinations as batteries of predictors.

Multiple correlations based on the data from 65 Bede  
College 1964-67 students

T.P. = 1, I.Q. = 2, C.P.T.P. = 3, Interview = 4, G.C.E. = 5.

Correlation between	R =	Level of significance
R1.23	0.1208	N.S.
R1.24	0.0871	N.S.
R1.25	0.1078	N.S.
R1.34	0.0931	N.S.
R1.35	0.1137	N.S.
R1.45	0.0852	N.S.
R1.234	0.1213	N.S.
R1.235	0.1319	N.S.
R1.245	0.1088	N.S.
R1.345	0.1154	N.S.
R1.2345	0.1324	N.S.

Multiple regression analysis was once again applied to  
this data.

Criterion (Teaching Practice Mark) is variable No. 1

I.Q. is variable No. 2

C.P.T.P. Flexibility is variable No. 3

Interview is variable No. 4

G.C.E. is variable No. 5

Beta weights and standard error of the beta weights  
 derived from the scores of Bede College students

1964-1967

Variable No.	Beta Weight	Standard Error of Beta Weight
2	0.0671	0.1280
3	0.0766	0.1259
4	0.0115	0.1251
5	0.0551	0.1285
2	0.0785	0.01252
3	0.0847	0.1245
4	0.0104	0.1250
2	0.0699	0.1279
4	0.0148	0.1250
5	0.0668	0.1270
3	0.0789	0.1258
4	0.0193	0.1242
5	0.0691	0.1257
2	0.0685	0.1271
3	0.0771	0.1258
5	0.0549	0.1284

Variable No.	Beta Weight	Standard Error of Beta Weight
2	0.0797	0.1244
3	0.0851	0.1244
2	0.0843	0.1249
4	0.0139	0.1249
2	0.0717	0.1270
5	0.0666	0.1270
3	0.0900	0.1242
4	0.0196	0.1242
3	0.0799	0.1257
5	0.0691	0.1257
4	0.0230	0.1240
5	0.0817	0.1240

N = 65

None of the Beta weights was significant at any level. Such was the distortion caused by the difference between the volunteers who were tested and those who did not attend the testing session that predictive ability, if any, of the various variables was to all effects destroyed. Even in multiple battery they never developed sufficient strength to make a significant prediction.

Were the Arts, Science and Practical Students different on any of the Predictors?

On this occasion, instead of comparing the G.C.E. scores, I.Q. scores and flexibility scores of Arts and Science students to see if any significant differences occurred, the students were grouped into three broad classes. There were a) sciences (including mathematics) b) Arts and c) practical subjects.

Table No. 13

t test to compare the scores on various measures of 'science' and 'Arts' students at Bede College  
1964-1967

Comparison between	N 'science' students	N 'arts' students	Degrees of freedom	't'	Level of significance
G.C.E. scores	14	29	41	3.41	0.01
Interview marks	14	29	41	0.47	N.S.
Teaching practice scores	14	29	41	0.38	N.S.
C.P.T.P. (flexibility) scores	14	29	41	0.661	N.S.

t test to compare the scores on various measures of 'Science' and 'Practical' students at Bede College 1964-1967.

Comparison between	N 'Science' students	N 'Practical' students	Degrees of freedom	't'	Level of significance
G.C.E. scores	14	20	32	4.283	0.01
Interview marks	14	20	32	0.696	N.S.
Teaching practice scores	14	20	32	0.756	N.S.
C.P.T.P. (flexibility) scores	14	20	32	0.099	N.S.

Table No. 15

t test to compare the scores on various measures of 'Arts' and 'Practical' students

Comparison between	N 'Arts' students	N Practical students	Degrees of freedom	't'	Level of significance
G.C.E. scores	29	20	47	0.392	N.S.
Interview marks	29	20	47	1.523	N.S.
T.P. scores	29	20	47	0.342	N.S.
C.P.T.P. (flexibility) scores	29	20	47	1.099	N.S.

Chapter Thirteen

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Bede College of Education

1967 - 1970

Research findings Bede College students 1967-1970

Because the Bede 1964-1967 students showed bias in favour of those who attended the testing session, in terms of their performance on the criterion of teaching practice marks, it was obviously necessary to attempt to test the whole of a year group rather than just those willing to attend a testing session.

A request was made to the Bede College Academic Board in July 1966 asking permission to test all would be Bede students at the time they were interviewed. The Academic Board agreed to this request and also accepted that no one should know the marks obtained on either of these tests before the students had left the college. In this way the offer of a place and subsequent attitudes towards the candidate's ability, academic or practical, could not be influenced by this knowledge.

A total of 163 applicants were tested during the year. Of those offered a place at Bede some withdrew because they gained university places, a few withdrew to continue their studies at school, others failed to get the minimum entry qualifications and a further few withdrew for 'personal reasons'. Several never arrived at the beginning of the academic year. 105 accepted the offer of a place and both arrived and stayed long enough to take part in at least one teaching practice.

A further group of 61 students were admitted to Bede College in 1967 who had not been tested during the academic year 1966-67.

On investigation these fell into two groups.

- i. Two students who had been interviewed in 1965-66 and were unable to take up places in September 1966. One was too young, the other had failed to gain enough passes in the General Certificate of Education.
- ii. The remaining students had been interviewed during the Christmas, Easter and Summer vacations.

(Unfortunately at the time I was not informed that vacation interviews had been arranged and indeed it was half way through the summer vacation of 1967 before I knew I had not tested a complete population.)

11 students were interviewed over Christmas and offered places.

10 students were interviewed over Easter and offered places.

33 students were interviewed over the Summer and offered places.

The staff at Bede in 1968 altered the method of grading teaching practice once again. As a result these grades were turned into marks as follows:

First year practice and second year practice

U = (unsatisfactory)	= 1
M/U or U/M = (marginal/unsatisfactory)	= 2
M = (marginal)	= 3
M/S = (marginal/satisfactory)	= 4
S = (Satisfactory)	= 5

Third year practice

Fail = 1

Pass = 3

Distinction = 5

When the teaching practice performance of those students who had been tested at interview was compared with the teaching practice performance of those who had not been tested the two groups were found to be significantly different.

Table No. 16

t test comparing the teaching practice marks of those who had taken the Otis I.Q. test and C.P.T.P. (flexibility) test on interview with those who had not

Comparison between	N	Degrees of freedom	t	Level of significance
a) 'tested'	104	163	2.001	0.05
b) 'not tested'	61			

As well as comparing the teaching practice marks of the two groups their interview and G.C.E. scores were compared.

Table No. 17

t tests to compare the G.C.E. and Interview marks of those students tested for Otis I.Q. and for C.P.T.P. (flexibility) with those not tested.

Bede entry 1967-1970.

Comparison between	N 'tested' students	N 'not tested' students	Degrees of freedom	't'	Level of significance
G.C.E. scores	105	60	163	0.642	N.S.
Interview marks	105	60	163	1.04	N.S.

Thus although those tested and those not tested were not significantly different for their G.C.E. scores and for the grades

they obtained on interview they were significantly different in their assessed teaching ability over three practices in three different schools. The students who had not been tested were regarded as significantly poorer (beyond 0.05 level) classroom teachers than those who had been tested.

Before going on with the main investigation it was necessary to see if any evidence existed as to why this should be. The application forms and clearing house forms of all those students admitted to Bede who completed the three year course but were not tested at interview were rescrutinised. They were, consequent upon this, grouped in several ways.

a) The teaching practice marks of those applying early enough to have been interviewed at either Christmas 1966 or Easter 1967 were compared with those interviewed during the summer vacation 1967. ("Early" and "late" applicants.)

Table No. 18

Comparison between	N	Degrees of freedom	't'	Level of significance
Early applicants and Late applicants	24  33	55	0.51	N.S.

Thus there was no significant difference between the teaching practice marks obtained by those students whose preference had been for a university place when they were broken down into two groups. Namely those applying for a place at a college of education at the same time as they applied for a place at university and those who waited for their G.C.E. 'A' level results, found that they were not good enough to gain entry to university, and so then applied for a place at a college of education.

c) The third grouping was to compare the teaching practice performance of those who had applied to universities with those who had not. This time the dates of applications to, and interviews at, Bede College were ignored.

Table No. 19

t test to compare those students at Bede College  
1967-1970 who had applied to university with  
those who had not (and were untested)

Comparison between	N	Degrees of freedom	t	Level of significance
'Failed' univ. students	35	55	2.445	0.02
and Non univ. applicants	22			

The students at Bede College between 1967 and 1970 who would have preferred to go to university were significantly ( 0.02) poorer over the three teaching practices than were those students who had only applied to colleges of education. One possible

interpretation of this finding would seem to be that these particular students were committed to getting an higher education, whatever it was, but were not particularly committed to teaching as a way of life. This lack of commitment had shown through in their practice teaching. Because of their effect the total group of non tested students were significantly poorer than the tested group of students when the two sets of aggregate teaching marks were compared.

This result would seem to have a probable relationship with the findings of Alan Smithers and David Hellowell<sup>695</sup> and <sup>696</sup> of the Bradford University School of Research and Education. They found that 69% of the male recruits in their third year at colleges of education would have ideally preferred careers outside education. This compared with a sample of student teachers in post graduate training amongst whom less than one third would have ideally chosen a career outside teaching. Smithers and Hellowell also interpret their findings as suggesting that colleges of education are being used as a second best source of higher education by students who fail to gain university places.

The rest of this chapter is concerned with the performance of those students who were tested at the time of their interview and who subsequently completed at least one teaching practice at Bede College, during the period 1967 to 1970.

Zero order correlations were calculated between the criterion of aggregate teaching practice and the predictors of G.C.E. scores, Otis I.Q., C.P.T.P. flexibility score and interview grades. They were also calculated between the four predictors and each other.

Table No. 20

Zero order correlations between various predictors and the assessed teaching performance of Bede College students 1967-1970

Correlation between	N = 105	r =	Level of significance
Total teaching practice and G.C.E. score		+0.001	N.S.
Total teaching practice and Otis I.Q.		+0.160	0.10
Total teaching practice and C.P.T.P. (flexibility)		+0.168	0.10
Total teaching practice and Interview grade		+0.14	N.S.
G.C.E. score and Otis I.Q.		+0.161	0.10
G.C.E. score and C.P.T.P. (Flexibility)		+0.010	N.S.
G.C.E. score and Interview grade		+0.0260	N.S.
Otis I.Q. and C.P.T.P. (Flexibility)		+0.116	N.S.
Otis I.Q. and Interview grade		+0.167	0.10
C.P.T.P. (flexibility) and interview grade		+0.116	N.S.

None of the predictors correlated significantly with the criterion of aggregate teaching practice performance at the 0.05 level although the Otis I.Q. and C.P.T.P. flexibility scores did correlate with the criterion beyond the 0.10 level. All of the predictors related positively with each other although once again none of the relationships reached the 0.05 level, only the relationships between a) G.C.E. scores and Otis I.Q. and b) Otis I.Q. and interview being significant beyond the 0.10 level. For this particular group of students therefore it would seem that none of the predictors could have been used alone for the selection of students with any degree of success in as far as predicting their future performance on teaching practice was concerned.

The multiple correlation coefficients <sup>were calculated</sup> and multiple regression analysis was then carried out.

Table No. 21

Multiple correlations based on the data from  
105 Bede College 1967-1970 students

T.P. = 1, I.Q. = 2, C.P.T.P. = 3, Interview = 4, G.C.E. = 5

Correlation between	R =	Level of significance
R1.23	0.2210	0.05
R1.24	0.1970	0.05
R1.25	0.1621	0.10
R1.34	0.2054	0.05
R1.35	0.1700	0.10
R1.45	0.1400	N.S.
R1.234	0.2405	0.02
R1.235	0.2224	at 0.02
R1.245	0.1987	0.05
R1.345	0.2054	0.05
R1.2345	0.2418	0.02

The multiple correlations were with one exception significant at least beyond the 0.10 level but in all combinations the multiples failed to exceed the 0.01 level. Probably of more

interest than the highest level of multiple correlation was the failure of the first order battery of interview and G.C.E. to predict teaching practice marks even at the lowly 0.10 level.

Once again the data was subjected to multiple regression analysis.

Criterion (Teaching Practice Mark) is variable No. 1  
 I.Q. is variable No. 2  
 C.P.T.P. Flexibility is variable No. 3  
 Interview is variable No. 4  
 G.C.E. is variable No. 5

Table No. 22

Beta weights and standard error of the beta weights derived from the scores of Bede College students 1967-1970

Variable No.	Beta weight	Standard Error of Beta Weight
2	0.1316	0.1007
3	0.1400	0.0992
4	0.0971	0.0999
5	-0.0250	0.0989
		Continued

Table No. (Continued)

Variable No.	Beta Weight	Standard Error of Beta Weight
2	0.1275	0.0994
3	0.1403	0.0992
4	0.0971	0.0999
2	0.1462	0.0996
3	0.1533	0.0983
5	-0.0250	0.0989
2	0.1448	0.1003
4	0.1165	0.0990
5	-0.0262	0.0989
3	0.1521	0.988
4	0.1167	0.988
5	0.0045	0.976
2	0.1422	0.0983
3	0.1535	0.0983
2	0.1405	0.0990
4	0.1165	0.0990
2	0.1642	0.989
5	-0.0263	0.989

Continued

Table No. (Continued)

Variable No.	Beta Weight	Standard Error of Beta Weight
3	0.1520	0.0988
4	0.116	0.0988
3	0.1700	0.0976
5	0.0016	0.0976
4	0.1401	0.0976
5	-0.0035	0.0976

N = 105

None of the Beta weights in this sample reached the 0.05 level in terms of its predictive contribution to the total of each predictive battery and in only one case, where C.P.T.P. flexibility and G.C.E. were considered as a predictive battery, did any component predictor make a contribution beyond the lowly 0.10 level of significance. In this case it was the flexibility which made the more significant contribution. There was however a clearly discernable trend for the flexibility contribution to be greater than any other predictor in every predictive battery where it was present.

Chapter Fourteen

Shenstone New College 1970-1973

Shenstone New College 1970-1973

Shenstone New College came into being in 1971 as the result of the merger of two colleges which had been liasing closely for several years. The two colleges were Summerfield College and Shenstone College. The merged college is mixed but with a very heavy preponderance of women students.

As a last check it was decided to try the test of flexibility on a sample which were being professionally educated away from the north east of England. The majority of the students at Shenstone New College come from the midlands but a fair proportion do come from the rest of the country. The merged college has some 850 students and 85 members of staff. All academic staff are involved in the supervision of teaching practice; the non education department staff doing the bulk of the individual supervision (seeing about four or five students per teaching practice) whilst education tutors see approximately thirty students once per practice. No "training" in teaching practice supervision techniques is given to new members of staff. Nor are they given any guidance as to interviewing techniques and selection criteria beyond the information as to what are the minimum educational requirements established by their own departments. Typically

academic departments such as English, History and Geography are able to ask for at least two "A" levels in the G.C.E. whilst other departments have to accept students with qualifications much closer to the minimum laid down by the Department of Education and Science.

The college entry of 1970 was not particularly different from the national entry with regards to General Certificate of Education qualifications. Roughly 39 per cent had two "A" levels and some 65 per cent had at least one "A" level.

The students were tested for their performance on the two tests of Otis I.Q. and C.P.T.P. flexibility in three different groups on three different occasions during June and July 1972. Only one group was virtually totally unrepresented, that being the small group of students preparing to teach in secondary schools. Almost all the men were in this group. Only three men were tested and so these were excluded from the data analysed. The remainder were all women students preparing to teach in first schools or middle schools. The G.C.E., interview and teaching practice marks of those students who were tested were compared with the marks of those students who were not tested.

Table No. 23

Tests to compare the marks for General Certificate, Interview and Teaching Practice of those students who were tested and those who were not. Shenstone New College 1970-1973.

Variable	'N' tested	'N' Non tested	Degrees of freedom	't'	Level of significance
G.C.E.				0.753	N.S.
Interview	166	74	238	0.539	N.S.
Teaching practice				3.443	beyond 0.0001

Thus the Shenstone students reacted similarly to, but much more strikingly than, the Bede 1964-1967 sample. When they knew what was being attempted those who knew they were regarded as having performed poorly on teaching practice were highly significantly more likely to stay away from any testing session which was attempting to show that their teaching practice marks could be predicted. Bearing in mind the limitations in interpretation this imposes, the data for those students who attended the testing sessions was further examined.

On Casual inspection the C.P.T.P. (flexibility) scores of the Shenstone women appeared to be very much higher than

those of the Bede college men. Direct comparison was only possible with the scores of the 1967-1970 men as this was the only group to be tested on the final version of the C.P.T.P. (flexibility) test. The Shenstone women were also compared with the Bede men for the three years 1963-66, 1966-67 and 1967-70 for Otis I.Q. Scores and G.C.E. Scores.

Table No. 24

Comparison of C.P.T.P. (flexibility) scores of Bede  
College men 1967-70 with Shenstone College women  
1970-1973

'N' Bede Men	'N' Shenstone Women	Degrees of Freedom	't'	Level of Significance
105	166	269	10.161	beyond 0.001

The Shenstone women as a group had scored very much higher than the Bede men but as the following tables show this does not appear to be a reflection of their measured intelligence nor of their academic knowledge as measured by G.C.E. results.

Table No. 25

Comparison of Otis I.Q. and G.C.E. results for Bede College men 1963-66, 1964-67, 1967-70 with Shenstone women 1970-1973.

Variable	Bede men date	Bede men 'N'	Shenstone Women 'N'	Degrees of freedom	't'	Level of significance
G.C.E.	1963-66	69	166	233	1.400	N.S.
Otis I.Q.		45		209	2.562	beyond 0.02
G.C.E.	1964-67	65	166	229	1.596	N.S.
Otis I.Q.		65		229	1.301	N.S.
G.C.E.	1967-70	105	166	269	0.977	N.S.
Otis I.Q.		105		269	1.934	beyond 0.10

A possible explanation links the work of Shipman<sup>482</sup> and Bernstein.<sup>700</sup> Shipman, as reported earlier in this thesis, has shown young men at Colleges of Education tend as a group score more highly on conventional tests of Intelligence and tend to come from upper working class families whilst the young women do not score quite as highly but tend more often to come from lower middle class families. Bernstein has

shown that middle class children and adults tend to use a more complex language structure "the elaborated code" than do working class children and adults. The Otis scores would seem to reflect this I.Q. difference once again whilst the C.P.T.P. (flexibility) scores probably reflect the different verbal backgrounds of the two sexes. Zero order correlations were computed for all of the variable.

Table No. 26

Zero order correlations: Shenstone New College 1970-1973

Correlation between	r	significance level for N = 166
Total teaching practice and I.Q.	-0.0056	N.S.
Total teaching practice and C.P.T.P. (Flexibility)	+0.406	Beyond 0.001
Total teaching practice and G.C.E. score	+0.106	N.S.
Total teaching practice and Interview	+0.076	N.S.
I.Q. and C.P.T.P. (Flexibility)	+0.246	Beyond 0.01
I.Q. and Interview	-0.007	N.S.
I.Q. and G.C.E.	+0.284	Beyond 0.01
C.P.T.P. (Flexibility) and Interview	+0.058	N.S.
C.P.T.P. (Flexibility) and G.C.E.	+0.166	Beyond 0.05
Interview and G.C.E.	+0.260	Beyond 0.01

The zero order correlations provided in some ways a similar pattern to those of the 1964-1967 students at Bede College. The correlations between I.Q., G.C.E., and Interview as predictors and teaching practice as the criterion were all very close to zero. Only C.P.T.P. flexibility at  $r = +0.406$  gave a significant (beyond the 0.001 level) prediction of the students teaching practice marks. This correlation was much higher than had been obtained before with any version of the C.P.T.P. It would almost certainly be a reflection of the much higher scores obtained by the women students and therefore is an indication that verbal flexibility and teaching ability (as measured by C.P.T.P. and by observing tutors) are two variables which are positively linked throughout the total range. Another possible hypothesis is that the test is more sensitive as a predictor of women student teachers' classroom performance.

The data was then subjected to multiple correlation and multiple regression analysis.

Table No. 27

Multiple Correlations based on the data from 166

Shenstone New College 1970-1973 students

T.P. = 1 I.Q. = 2 C.P.T.P. = 3 Interview = 4 G.C.E. = 5

Correlation between	R =	Level of significance
R1.23	0.4174	Beyond 0.001
R1.24	0.0763	N.S.
R1.25	0.1089	N.S.
R1.34	0.4094	Beyond 0.001
R1.35	0.4079	Beyond 0.001
R1.45	0.1173	N.S.
R1.234	0.4204	Beyond 0.001
R1.235	0.4226	Beyond 0.001
R1.245	0.1191	N.S.
R1.345	0.4103	Beyond 0.001
R1.2345	0.4239	Beyond 0.001

As would be expected all multiples containing C.P.T.P. (flexibility) were beyond the 0.001 level of significance in their ability to predict the teaching practice marks of the Shenstone students. No other battery reached any acceptable

level of significance.

Table No. 28

Beta weights and standard error of the beta weights derived from the scores of 166 Shenstone College Students 1970-1973.

Criterion (teaching practice marks) is Variable No. 1

I.Q. is Variable No. 2

C.P.T.P. (Flexibility) is Variable No. 3

Interview is Variable No. 4

G.C.E. is Variable No. 5

Variable No.	Beta Weight	Standard Error of Beta Weight
2	-0.1145	0.0832
3	0.4223***	0.0806
4	0.0353	0.0807
5	0.0592	0.0845
2	-0.0988	0.0801
3	0.4274***	0.0802
4	0.0505	0.0778
2	-0.1178	0.0828
3	0.4235***	0.0805
5	0.0692	0.0814

Continued

Variable No.	Beta Weight	Standard Error of Beta Weight
2	-0.0218	0.0813
4	0.0501	0.0807
5	0.0992	0.0842
3	0.3987***	0.0787
4	0.0456	0.0804
5	0.0280	0.0814
2	-0.0999	0.0801
3	0.4306***	0.0801
2	0.0065	0.0776
4	0.0760	0.0776
2	-0.0262	0.0809
5	0.1134	0.0809
3	0.4029***	0.0777
4	0.0526	0.0777
3	0.3994***	0.0787
5	0.0397	0.0787
4	0.0520	0.0804
5	0.0925	0.0804

\*\*\* Significant beyond the 0.001 level.

\*\* Significant beyond the 0.01 level.

\* Significant beyond the 0.05 level.

The multiple regression analysis provided much the same picture as multiple correlation had done. In all cases where the test of flexibility was a part of the predictive battery it was the only one which made a significant contribution to the prediction of student teaching practice marks. When the test of flexibility was absent none of the other batteries had a component which made a significant predictive contribution.

Summary and Conclusions

### Summary and Conclusions

Six samples were drawn from three colleges; four from Bede College of Education, Durham, one from Sunderland College of Education, Sunderland, and one from Shenstone New College, Worcestershire. Five of the six samples were already students at college and were volunteers.

Two of the volunteer groups (Bede 1964-1967 and Shenstone 1970-1973) knew the purpose of the research before they were tested. The Bede group was significantly (0.05) superior to the remainder of the population from which it was drawn in terms of assessed teaching performance. It was not however superior in terms of interview grades received or academic entry qualifications. Similarly the Shenstone students who attended the testing sessions were significantly superior (beyond the 0.001 level) for assessed teaching ability but were not significantly different from their parent population for interview grades or G.C.E. results. One possible explanation of this is that they also knew how well, or how badly they had performed during their first two teaching practices. It could well be that the students who either felt they had performed poorly or who had been told they had performed poorly were the ones who were more likely to stay

away from a testing session designed to predict teaching success, (however confidential the tutor claimed the results would be).

The one sample which was not students already at a college of education was a group wishing to enter Bede College in September 1967. These differed in several important ways:

One: the majority were seventeen and eighteen year old boys who were still at school

Two: they were under the impression that the I.Q. and flexibility tests were part of the selection procedure

Three: they were not volunteers

Four: the tested students who subsequently studied at Bede, despite having no choice, still differed significantly ( 0.05) from the smaller group of students who studied at Bede but who had not been tested, when their teaching marks were compared.

Investigation showed that no significant difference appeared to exist for the grades these two groups received at interview or for their academic qualifications. The group who had not been tested and who were significantly poorer on teaching practice had all been interviewed during the three vacations prior to entry. No significant difference emerged between

the early and late applicants. However when those who as their first wish had preferred to go to university were compared with the rest they were regarded as significantly (0.02) poorer student teachers. It would seem likely that their commitment was to getting an higher education rather than to teaching, and that this had perhaps led to a lack of involvement in the practical classroom based aspects of their course of study. This in turn had resulted in lower marks from the supervising tutors. This would appear to reflect the same sort of attitudes and involvement found by Smithers and Hellowell<sup>695</sup> and <sup>696</sup> at Bradford University who found that 69% of men in colleges of education would have ideally chosen careers outside teaching but going to a college of education was better than no higher education at all.

Liam Hudson's<sup>274</sup> work on divergent thinking meant that the scores of the "science" and "non science" students needed to be compared on the test of flexibility. No significant difference was found for either the 1963-66 or the 1964-1967 students when broken down into science/non science, or science/arts/practical groups in as far as their flexibility scores were concerned. This would seem to support the findings of El Meligi<sup>175</sup> who could not detect a

significant difference between the creativity scores of Arts and Science sixth formers rather than <sup>the</sup> better known work of Hudson. Certainly in as far as this study was concerned there seemed to be no reason to treat the science and non science students as if they belonged to different populations in as far as their C.P.T.P. scores were concerned.

The same Bede students showed no difference for interview grades or for I.Q. scores. However at Bede College the science students were significantly superior ( 0.01) to all other students for their G.C.E. qualifications. This is undoubtedly due to the high reputation of the Bede College 'Wing Science' course and the freedom of the science department to pick from a larger body of applicants than any other college department. The fact that the science department tutors appear not to have regarded these students more highly than other departmental interviewers is probably due to the well known phenomenon of individual graders tending to settle down with the same mean and deviation he or she always uses and to be unable to adjust for very long to the fact that their sample is generally poorer or better than most samples.

The Shenstone College women had scored significantly (0.001) higher than the Bede College men on the test of

flexibility. Upon investigating this further it appeared that there was no difference between the groups for G.C.E. results but that the group of men were consistently higher scorers (at varying levels of significance) on the Otis I.Q. test. The most likely explanation would seem to be that more of the men were from upper working class homes and were relatively underfunctioning compared with the women. This would appear to support Shipman's<sup>482</sup> findings at Worcester College. The difference in scores on the C.P.T.P. (flexibility) test are probably similarly based in the different class origins of men and women students and can be explained by the highly verbal nature of the flexibility test showing the differing degrees to which the two sexes have developed their elaborated codes.<sup>700</sup>

Throughout the study four variables were used both singly and in all possible combinations to see their predictive powers relative to the fifth variable, the criterion of tutor assessed student teaching ability.

The Criterion is itself regarded as being highly suspect by many. Statements are made each year to the effect that there is little or no relationship between student teaching performance and subsequent teaching performance. Many of the students investigated in various researches have shown changes in measured attitudes once they have been teaching for a short

time, but that is not the same thing as measured classroom performance.<sup>32</sup>, 141, 142, 272, 428, 658.

Evidence in plenty exists to show that the school in which a student is placed, the ability and attitudes of the class teacher, the personality, knowledge and beliefs of the supervising tutor and the ages of the children being taught all have a significant effect on the marks a student is given.<sup>23</sup>, 99, 110, 307, 367, 409, 425, 426, 455, 483, 537, 540, 561, 570, 614, 645, 646, 650, 651, 653.

Yet despite the overwhelming evidence showing many factors which lower the validity of the teaching practice mark it appears, despite widely held opinions to the contrary, that there is a significant relationship between the marks awarded at college for student classroom teaching and subsequent assessments, usually during early career years, of classroom performance.<sup>98</sup>, 101, 174, 194, 225, 314, 315, 406, 509, 520, 556, 652.

Evidence from this study was strong to support Cattell's<sup>83</sup> findings of some 40 years ago that college tutors do not use the full range of marks. However when marks for all three practices were combined the resulting distributions did not deviate significantly from normal.

The Predictors mentioned below have all been researched

frequently over the years with the exception of flexibility which has paradoxically been mentioned more frequently than any other variable.

General Certificate of Education. Several studies<sup>26, 55, 239, 339, 348</sup> have shown that no significant relationship exists between G.C.E. (or similar pre college examinations) and student teaching performance. Others<sup>26, 239</sup> obtained significant results only after the extreme ends of the continuum for one variable (teaching ability) were compared for pre college academic performance. Harvey<sup>245</sup> found a significant relationship (0.05) for only one of his four samples. Mathis and Park<sup>348</sup> obtained a significant (0.01) result for secondary but not primary teachers. In this present study G.C.E. results for five samples of students from three different colleges were compared with teaching practice marks. The correlations of  $r = +0.002$  ( $N = 27$ ),  $+0.07$  ( $N = 69$ ),  $+0.161$  ( $N = 65$ )  $+0.001$  ( $N = 105$ ) and  $+0.106$  ( $N = 166$ ) were all non significant but similarly to those found in previous studies they were all positive.

Warburton's<sup>245</sup> explanation that 'the minimum entry qualification of five ordinary level passes ensures that only part of the population is studied' helps to explain this series of low predictive correlations over the years. This

would indeed be even more likely today than in earlier years for five 'O' level passes is rapidly becoming a mythical entry qualification except for a very small proportion of mature students and those wishing to teach severe shortage subjects. By 1972 some 68.4% of entrants had at least one pass at the advanced level in the G.C.E. Whereas in the mid 1960's only between one and three hundred applicants were 'qualified' but rejected, by 1972 there were 196 students rejected because they had not got at least one advanced level pass out of the 1090 who were turned down by the colleges.<sup>701</sup>

Interview. There is a considerable body of research evidence to show that usually we cannot interview with any predictive certainty of selecting the more able student teachers. Wrong perceptual cues, interviewer personality, shortage of candidates for certain subjects all combine to reduce most correlations to around zero.<sup>26, 55, 112, 116, 169, 245, 411, 590, 636.</sup> The short time given for interviews appears to be another factor which diminishes the likelihood of a valid evaluation being made.

There is not enough time to really get to know the interviewee and so, as Audley<sup>702</sup> has shown, in an average interview lasting fifteen minutes most decisions are arrived at after only four minutes.

Burroughs<sup>70</sup> showed that carefully structured interviews of students near to graduation did produce a significant positive prediction of teaching performance on subsequent P.G.C.E. courses whilst Bowden<sup>55</sup> and Harvey<sup>245</sup> obtained a significant relationship for women but not men students. Only Walters<sup>584</sup> and Halliwell<sup>239</sup> appear to have found consistently that interview grades predicted teaching practice marks.

In this study the relationship between interview grades and subsequent teaching performance was obtained for four samples:

Bede 1963-1966,	N = 67,	r = +0.332**
Bede 1964-1967,	N = 65,	r = +0.024
Bede 1967-1970,	N = 105,	r = +0.140
Shenstone 1970-1973,	N = 166,	r = +0.076.

The single study involving women students would thus not appear to support the results of Bowden's and Harvey's researches. Really only one hypothesis appears to exist when we look at these figures. Since by chance alone we should expect to find that some five out of every hundred correlations would be significant beyond the 0.05 level, the few that have occurred could well fall into this category, including the Bede 1963-1966 sample. In general it would

appear that tutors when interviewing prospective students cannot successfully predict future teaching performance.

Intelligence Quotients. Many researchers into teaching have attempted to find a link between the assessed value of the teachers' classroom performance and the I.Q.s of those teachers. Usually the correlations have been positive; almost always they have been low. Skinner<sup>490</sup> in 1947 reported 23 researches. All were positive. All but two were below +0.30. Since then Cortis<sup>115</sup>, Crocker<sup>123</sup>, Evans<sup>181</sup>, Nandi<sup>386</sup>, Torpey<sup>523</sup>, Uttley<sup>565</sup>, Walters<sup>584</sup> and Boardman<sup>656</sup> are amongst the many British researchers who report a series of correlations between -0.113 and +0.287, mostly too near to zero to be significant. This current research was only marginally different, in its findings, from its predecessors in that four of the six samples produced negative correlations. The largest of these was  $r = -0.25$  for the 51 Bede College students tested on N.I.I.P. 33 prior to entering college in 1961. The highly verbal nature of this test and the result obtained adds weight to Cortis's<sup>115</sup> suggestion that high verbal ability might well be a handicap in the teaching situation. The zero order correlations obtained were:-

Bede 1961-1964	$r = -0.25^*$ N = 51 (N.I.I.P. 33)
Sunderland 1963-1966	$r = -0.19$ N = 27 (Otis)
Bede 1963-1966	$r = +0.36^*$ N = 49 (Otis)

Bede 1964-1967	$r = -0.120$	$N = 65$	(Otis)
Bede 1967-1970	$r = +0.160$	$N = 105$	(Otis)
Shenstone 1970-1973	$r = -0.0056$	$N = 166$	(Otis)

\*Significant beyond the 0.05 level.

The low level generally found in such correlations is usually explained by such persons as Vernon<sup>523</sup>, Lovell<sup>539</sup>, and Simeon<sup>485</sup> as being the result of only studying part of the distribution. Vernon claims he has never seen a good teacher with an I.Q. below 100 whilst the cut off above which he feels I.Q. and teaching ability are probably randomly related is put at 110. Simeon agrees with this level saying the cut off is probably around 108-110, Lovell puts it lower, at 100. Taking the Simeon/Vernon cut off point as a) existing and b) referring to tests with a mean of 100 and a standard deviation of about 15, then a similar cut off point for Otis would be around 106 to 108. In all samples which were tested on Otis over 85% obtained scores above this level, the actual percentage being higher for all of the Bede samples. If such a cut off point does exist then once again these results would support the belief that the academic qualifications needed to enter a college of education ensure that most student teachers are above this point.

Flexibility. A large part of this study was to develop a test of flexibility (appendix two) and see whether a relationship existed between verbal flexibility as measured by a test and student teaching performance. This flexibility might be merely the ability to change teaching styles in order that the differing whims of class teachers and supervising tutors can be met. T. Derrick<sup>703</sup> has shown in a recent study that one of the problems that students claim to face is the need to conform to the demands of teachers who want conformity and 'realistic' behaviour from the children, whilst their tutors tend to want to see individualistic children. Witrock<sup>607</sup> has shown that this ability to change behavioural styles is present to at least some degree in most students.

The ability to be flexible would seem essential if the student is to meet the initial problem that Ryans<sup>455</sup> highlights, namely of having attended a different school (at least for the most recent 7 or 8 years if returning to primary schools on teaching practice) and so having to rapidly assimilate new social mores, styles of relationships, etc. Another reason for needing to be flexible is shown in Turner's<sup>561</sup> work. He found that different teaching styles suited the needs of children from different social backgrounds, whilst Thelen<sup>649</sup> and Flandor<sup>241</sup> have shown that it is the teacher with the

widest range of teaching and personality styles who most often succeeds in the classroom. Many studies refer to flexibility as being essential to good teaching, (indeed it is said to be the most frequently used word when describing essential attributes of teachers<sup>241</sup>) and yet no test appears to have been developed specifically to measure the relationship of this trait to teaching performance, although many studies have used measures of adaptability, creativeness, divergence, initiative and resourcefulness. The zero order correlations between flexibility scores and teaching practice marks for the Bede and Shenstone samples were:

Bede 1963-1966,	N = 45,	r = +0.348	0.05
Bede 1964-1967,	N = 65,	r = +0.091	N.S.
Bede 1967-1970,	N = 105,	r = +0.168	<del>(0.07)</del> N.S.
Shenstone 1970-1972,	N = 166,	r = +0.406	0.001

In general it would appear from these figures that the test of flexibility is able to predict the marks awarded to student teachers. Provided we accept <sup>that</sup> the variety of words such as "adaptability" are essentially being used to describe the same trait then this work would appear to support the researches of a great many other workers.<sup>53, 54, 121, 158, 159, 217, 241, 277, 290, 294, 402, 463, 496, 505, 514, 558, 559, 618, 621, 656, 669, 670.</sup>

The difference between the correlations obtained for the various samples can be explained partly by the fact that the

Bede 1964-1967 group's general results were distorted by the large number who chose to stay away from the testing session and one would expect lower correlations anyway for the Bede 1967-1970 sample, this being the only group where testing and teaching were tested consecutively as opposed to concurrently. The high correlation for the Shenstone 1970-1973 sample is probably due to the fact that they were all women students and could be expected to have higher verbal ability than men student teachers.

The Predictors used in Multiple Battery. The various predictors for the four main samples were intercorrelated and then used in multiple correlation battery and in multiple regression analysis. Whereas only a few years ago only the most promising batteries would have been inspected via this method (i.e. those predictors with the lowest correlations with each other) modern computers are easily able to consider all possible predictive combinations.

Multiple Correlations. In every case the increase in correlation from the first order multiple to the third order multiple was very small and would not have compensated for the rapid increase in accompanying error. Probably of most interest are the following points:-

- a) In three out of four of the samples the battery of

I.Q. and flexibility produced the highest multiple correlation. In the fourth this combination was second to the combination of flexibility and interview. Flexibility and interview were the second best battery for the three where I.Q. and flexibility were best. Thus flexibility combined either with I.Q. or with interview marks was always present in the best predictive first order batteries for every sample.

b) The worst predictive battery in every sample was the combination of G.C.E. marks and interview grades. Yet these are the very tools used by the colleges in their selection process.

Multiple Regressions. When all possible combinations of predictors were examined to see what weight the individual predictors made to the batteries it rapidly became apparent that in all cases it was the test of flexibility which was providing the significant contribution. At times this appeared to run contrary to the zero order correlations where the flexibility scores did not always show the highest relationship. However in all cases the intercorrelations between the variables other than flexibility were higher than with flexibility when the whole range of intercorrelations

was considered. (At times this was quite a small difference which led to the flexibility scores having the lowest common ground with the other variables within a particular sample.)

From both multiple correlation and multiple regression analysis it therefore appears reasonable to accept that the C.P.T.P. test of flexibility is the most stable of the four predictors which have been considered.

We already know that the marks awarded to student teachers bears a significant relationship to the marks awarded to the same people a few years later when assessed in the classroom. A question now poses itself:

Are flexible people more able to adapt to the manifest personality traits of interviewing tutors and so get high interview marks; do they then more successfully adapt to the needs, demands and personalities of supervising tutors when on teaching practice and similarly to visiting headmasters and H.M.I.'s later on, when teaching full time; are people who do well on flexibility tests better teachers or just more flexible? Certainly one thing does appear clear, we can accept the hypothesis that a test of verbal flexibility will predict, albeit at a fairly low level, the marks that college of education tutors will give to their students.

Tables.

Basic data concerning Bede College Students 1961 to 1964

Student Number	N.I.I.P. Score	T.P.1	T.P.2	T.P.3	T.P. Aggregate
B1	79	B-	B	C	26
B2	91	C+	B	B	29
B3	74	B	B	B	30
B4	104	C	C-	C	20
B5	61	B	B	B	30
B6	81.75	C	C	C	21
B7	78	C+	B	B+	29
B8	74	B-	B	B	29
B9	74	C-	C	C	20
B10	110	C-	C-	E	13
B11	61.25	C	B	B	27
B12	61.25	B	C+	C	25
B13	67.25	A-	B	B	32
B14	93.25	B	C	B	27
B15	64.25	C	C	C	21
B16	84.50	C	C	C	21
B17	67.25	C+	A	B	31
B18	87	C	C+	B	27
B19	67	C	C	D	18
B20	110	C-	C-	B	22
B21	85	C	C+	C+	23
B22	67.25	C	C	C+	22

Student Number	N.I.I.P. Score	T.P.1	T.P.2	T.P.3	T.P. Aggregate
B23	80.25	B	C	C	24
B24	79	C-	C+	B	24
B25	90.50	C	C-	C	20
B26	90	C	C+	B-	24
B27	85	D	C	C	18
B28	64.50	C	C	C	21
B29	82	C	C-	D	17
B30	56	C	B-	B	26
B31	81	C-	C+	B	24
B32	67	C	C+	B	25
B33	90	C-	D	C	17
B34	101	C-	C	C	20
B35	81	C+	C	B	26
B36	82	C	C	B-	23
B37	80	D	C	C-	17
B38	89.50	D	C-	C	17
B39	96	D	D	D	12
B40	95	B	B	B	30
B41	101	C	B-	C	23
B42	79	C	B	C	24
B43	102.25	C	C	C	21
B44	110	C-	B	D	20
B45	98	C	C	C	21
B46	60.25	B	B	B	30

Student Number	N.I.I.P. Score	T.P.1	T.P.2	T.P.3	T.P. Aggregate
B47	46.50	D	C-	C	17
B48	90	D	B	A	27
B49	70.25	C-	C	C	21
B50	94	B	B	B	30
B51	66	C	B	C	24

## Final Teaching Practice Marks of the 1963-66 Students

at Sunderland College of Education

(T.P. Marks of Volunteer Sample are blocked in)

Student No.	T.P. Mark	Student No.	T.P. Mark	Student No.	T.P. Mark	Student No.	T.P. Mark
S1	8	S21	7	S41	12	S61	8
S2	10	S22	10	S42	8	S62	9
S3	7	S23	6	S43	9	S63	11
S4	7	S24	6	S44	11	S64	7
S5	8	S25	8	S45	8	S65	7
S6	6	S26	6	S46	8	S66	6
S7	7	S27	6	S47	7	S67	8
S8	7	S28	9	S48	7	S68	7
S9	7	S29	8	S49	7	S69	8
S10	5	S30	7	S50	8	S70	7
S11	7	S31	11	S51	4	S71	7
S12	7	S32	9	S52	8	S72	7
S13	5	S33	6	S53	6	S73	10
S14	11	S34	10	S54	8	S74	10
S15	5	S35	6	S55	11	S75	7
S16	8	S36	11	S56	7	S76	12
S17	9	S37	8	S57	10	S77	8
S18	8	S38	8	S58	5	S78	6
S19	9	S39	8	S59	6	S79	7
S20	7	S40	9	S60	8	S80	6

Student No.	T.P. Mark	Student No.	T.P. Mark	Student No.	T.P. Mark	Student No.	T.P. Mark
S81	9	S102	7	S123	18	S144	9
S82	11	S103	9	S124	11	S145	9
S83	8	S104	9	S125	6	S146	6
S84	8	S105	7	S126	9	S147	8
S85	6	S106	6	S127	8	S148	7
S86	7	S107	8	S128	4	S149	7
S87	6	S108	11	S129	8	S150	7
S88	8	S109	12	S130	7	S151	8
S89	9	S110	8	S131	9	S152	8
S90	7	S111	6	S132	6	S153	11
S91	11	S112	10	S133	11	S154	11
S92	11	S113	13	S134	6	S155	7
S93	11	S114	10	S135	7	S156	6
S94	11	S115	12	S136	7	S157	11
S95	11	S116	8	S137	8	S158	11
S96	6	S117	8	S138	7	S159	1
S97	12	S118	11	S139	12	S160	13
S98	7	S119	8	S140	8	S161	8
S99	8	S120	7	S141	7	S162	8
S100	12	S121	7	S142	10	S163	11
S101	11	S122	7	S143	11	S164	7

Sunderland College of Education 1963-66 student volunteer sample. Teaching practice, G.C.E., I.Q. and Flexibility scores

Student No.	G.C.E. score	O.T.I.S. I.Q.	C.P.T.P. (Flexibility)	Final T.P. Mark
S17	8	107	58	9
S21	11	116	53	7
S27	13	121	52	6
S28	7	123	66	9
S31	5	121	64	11
S36	7	114	88	11
S37	12	114	39	8
* S38	8	123	77	8
S45	7	105	68	8
* S49	4	114	85	7
S53	6	112	46	6
S60	15	121	78	8
S67	13	103	61	8
S73	12	122	45	10
S77	11	124	62	8
S82	10	112	57	11
S85	9	125	79	6
S94	12	120	64	11
S97	17	123	50	12
* S112	5	119	64	10
S126	10	118	69	9

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N = 27

Student No.	G.C.E. score	O.T.I.S. I.Q.	C.P.T.P. (Flexibility)	Final T.P. mark
S129	9	117	62	8
S130	10	117	47	7
S139	6	110	58	12
S146	10	124	58	6
S148	14	148	93	7
S149	5	125	80	7

\* Mature student with Scottish Leaving Certificate.

\*\* Mature student.

## Basic data concerning Bede College students 1963 to 1966

Complete data available	Student No.	Otis I.Q.	CPT <sup>2</sup> Flexibility	Inter-view Score	GCE Score	TPI grade	TPII grade	TP III grade	Total TP Mark	Science student = S
	1B1	-	80	2	12	C	B-	C	23	S
	1B2	-	60	3.5	11	C	A	B	30	S
	1B3	-	49	3	11	D	D+	C	16	S
	1B4	-	61	2.5	14	C+	B	A-	30	S
	1B5	-	82	3	11	C	A	C	27	S
	1B6	114	79	-	6	C-	C+	C+	22	
*	1B7	115	62	2	8	C	C	B	24	
*	1B8	121	61	2	13	C+	B-	C+	25	
	1B9	-	69	2	13	C+	B+	B+	30	S
	1B10	-	62	4	12	C	C-	B+	18	S
	1B11	-	74	3	6	C	C	D+	22	S
	1B12	-	100	3	16	C	C	C	21	S
*	1B13	112	48	3	8	B	C+	C+	26	
*	1B14	127	81	4	10	C	C+	B	25	S
*	1B15	120	63	4	7	B	C	C+	25	
*	1B16	119	79	3	11	C-	C	C	20	
	1B17	-	71	3	8	C	C	C	21	S
	1B18	-	55	2	7	C+	C-	B	24	
*	1B19	114	78	4	9	B	B	B+	31	
*	1B20	130	87	3	8	B	B	B+	31	

Complete data available	Student No.	Otis I.Q.	CPT@ Flexibility	Inter-view Score	GCE Score	TPI grade	TPII grade	TP III grade	Total TP Mark	Science student = S
	1B21	-	41	2	12	D-	D	D	11	S
*	1B22	119	64	3	10	C	C+	C+	23	
	1B23	-	79	4	10	C-	C+	C	21	
*	1B24	118	70	2	7	D	D-	C-	13	
*	1B25	130	81	4	12	C	C	C	21	
*	1B26	120	86	4	11	C	B-	C	23	
*	1B27	125	66	3	10	C+	C	C	22	
*	1B28	113	45	4	11	C	C	C+	21	
*	1B29	127	88	4	12	C	C	B	24	S
*	1B30	118	80	2	8	C	C	C+	22	
*	1B31	-	69	2	7	D+	C-	D	15	S
*	1B32	122	76	2	5	B-	A	B	32	
*	1B33	115	49	3	9	C-	C+	B-	23	
*	1B34	115	69	4	7	D+	C	C	19	
*	1B35	109	44	3	5	C	C+	B-	24	
*	1B36	122	60	1	10	C	D-	D	14	S
*	1B37	116	63	3	5	B	C+	B	28	
*	1B38	123	82	4	10	B-	C+	B	27	S
*	1B39	118	67	4	11	D	C	B-	20	
	1B40	122	87	-	9	B	B	B	30	
*	1B41	119	82	2	6	B-	C	C	23	
*	1B42	124	92	2	8	B	B-	C	26	

Complete data available	Student No.	Otis I.Q.	CPT@ Flexibility	Interview Score	GCE Score	TPI grade	TPII grade	TP III grade	Total TP Mark	Science student = S
*	1B43	123	67	3	10	C	C	C+	22	
*	1B44	111	35	1	9	E	C	E	9	
*	1B45	109	63	3	6	C	C+	D	19	
*	1B46	104	61	2	6	D+	C-	C-	19	
*	1B47	109	77	3	11	C	B	C	24	
*	1B48	113	82	4	6	C	C	C+	22	
*	1B49	121	86	3	7	C+	C	B	25	
*	1B50	110	74	3	8	D+	C	B	22	
*	1B51	122	66	3	11	C-	D-	C+	17	
	1B52	-	40	2	10	E	D-	C	10	S
	1B53	-	59	3	7	B-	C	B	26	
*	1B54	121	75	4	10	C+	C	B-	24	
	1B55	-	52	2	14	C	C	C-	20	S
	1B56	-	61	3	8	C	C-	C	20	S
	1B57	-	91	4	17	C-	C+	B+	25	S
*	1B58	107	61	3	5	D-	D	C	17	S
	1B59	-	80	4	11	C-	B	C+	24	S
*	1B60	117	78	2	14	C	C+	C	22	
*	1B61	122	61	4	13	B	B+	B-	30	
	1B62	-	78	3	19	C-	B+	C+	25	S
*	1B63	124	61	2	10	B-	B-	C+	26	
*	1B64	127	70	4	9	C	A-	A	32	S

Complete data available	Student No.	Otis I.Q.	CPT <sub>2</sub> Flexibility	Interview Score	GCE Score	TPI grade	TPII grade	TP III grade	Total TP Mark	Science student = S
*	1B65	111	55	3	4	C	C	A	21	S
*	1B66	105	59	2	5	C	C+	C	22	
	1B67	-	103	4	9	C+	C-	C	21	S
*	1B68	119	60	4	14	C-	B-	B	25	
*	1B69	112	76	3	11	B	C	C	24	

## Basic Data concerning Bede College Students 1964 to 1967

Student Number	Otis I.Q.	C.P.T.P. (Flexibility)	Interview Score	G.C.E. Score	T.P.II Mark	T.P.III Mark	T.P.total Mark	Science = S Arts = A Practical = P
2B1	116	74	3	5	10	1	11	-
2B2	109	74	4	17	8	1	9	A
2B3	104	59	3	8	8	1	9	A
2B4	105	56	4	9	6	1	7	A
2B5	127	84	2	10	9	2	11	A
2B6	110	57	3	6	7	1	8	A
2B7	119	77	1.5	10	7	1	8	P
2B8	113	63	4	10	7	2	9	S
2B9	133	65	4	7	8	1	9	A
2B10	104	75	1.5	7	10	1	11	A
2B11	103	63	3	9	7	1	8	P
2B12	112	63	2	10	10	1	11	P
2B13	123	63	4	15	10	2	12	S
2B14	121	72	4	7	7	1	8	A
2B15	104	66	3	7	10	1	11	P
2B16	112	61	3	8	7	1	8	P
2B17	121	70	4	7	10	1	11	P
2B18	124	33	1	7	6	0	6	-
2B19	112	72	4	13	8	1	9	S
2B20	116	61	4	9	7	1	8	A
2B21	132	87	4	13	6	1	7	S
2B22	114	44	3	11	6	1	7	A

Student Number	Otis I.Q.	C.P.T.P. (Flexibility)	Interview Score	G.C.E. Score	T.P.II Mark	T.P.III Mark	T.P. total mark	Science = S Arts = A Practical = P
2B23	121	44	4	11	10	1	11	S
2B24	122	100	3	10	7	2	9	A
2B25	132	84	1.5	9	8	1	9	A
2B26	127	102	3	5	7	1	8	A
2B27	111	73	4	10	6	1	7	A
2B28	116	85	3	14	8	1	9	A
2B29	121	70	1.5	12	9	1	10	S
2B30	122	62	3	15	7	1	8	S
2B31	112	71	4	10	7	1	8	P
2B32	121	68	4	7	7	1	8	P
2B33	110	66	3.5	8	9	1	10	P
2B34	121	64	2	10	6	1	7	S
2B35	124	76	0.5	10	7	1	8	P
2B36	123	61	3	11	7	1	8	A
2B37	112	92	4	13	8	1	9	A
2B38	109	57	4	6	9	2	11	A
2B39	120	75	4	12	6	1	7	P
2B40	93	59	3	5	7	1	8	A
2B41	109	82	3	11	8	1	9	P
2B42	129	104	2	16	8	1	9	S
2B43	129	81	2.5	10	8	1	9	A
2B44	104	66	3	8	7	2	9	P
2B45	112	85	3	5	7	1	8	P

Student Number	Otis I.Q.	C.P.T.P. (Flexibility)	Interview Score	G.C.E. Score	T.P.II Mark	T.P.III Mark	T.P. total mark	Science = S Arts = A Practical = P
2B46	113	44	4	13	8	1	9	S
2B47	106	72	4	10	6	1	7	A
2B48	128	85	2	10	9	1	10	S
2B49	128	68	3	9	8	1	9	P
2B50	122	71	2	6	10	1	11	P
2B51	123	75	4	10	11	2	13	A
2B52	107	63	1	7	10	1	11	P
2B53	106	74	3	7	13	2	15	A
2B54	122	71	4	7	7	2	9	A
2B55	113	59	4	9	6	1	7	P
2B56	119	51	2	9	7	2	9	P
2B57	108	66	1	13	7	1	8	S
2B58	122	67	2	13	6	1	7	P
2B59	109	68	3	9	6	1	7	A
2B60	113	63	3	8	8	1	9	A
2B61	99	63	3	9	10	1	11	S
2B62	123	78	2.5	12	7	1	8	A
2B63	114	75	4	8	9	1	10	S
2B64	118	63	3	5	7	3	10	A
2B65	110	66	2	10	9	2	11	A

Basic data concerning those students at Bede College  
During 1967-1970 who had not been tested at the time  
of their interview

Student No.	'failed Univ'	College only	Interviewed during			Teaching Practice total marks
			Christmas	Easter	Summer	
3B2		*			*	13
3B3		*			*	15
3B7		*			*	15
3B9		*			*	15
3B12		*		*		15
3B14	*				*	15
3B20		*	*			15
3B25	*				*	15
3B28	*				*	9
3B31	*				*	13
3B32	*			*		13
3B37	*				*	15
3B40	*			*		13
3B42		*	*			15
3B44	*				*	11
3B49	*		*			15
3B55		*			*	15
3B57	*				*	13
3B58		*		*		15
3B59	*				*	15

Student No.	'failed Univ.'	College only	Interviewed during			Teaching Practice total marks
			Christmas	Easter	Summer	
3B60	*				*	15
3B63	*			*		15
3B64		*		*		13
3B66		*		*		15
3B67	*				*	15
3B71	*				*	13
3B72	*				*	13
3B75	*		*			10
3B78		*	*			15
3B83	*				*	13
3B90	*		*			11
3B94	*		*			15
3B98	*			*		15
3B100		*		*		15
3B101		*		*		15
3B104		*			*	15
3B107		*			*	15
3B109		*	*			13
3B111	*				*	15
3B112		*	*			15
3B122	*				*	15
3B125		*	*			15
3B126	*			*		13

Student No.	'failed Univ.'	College only	Interviewed during			Teaching Practice total marks
			Christmas	Easter	Summer	
3B127	*				*	13
3B132	*				*	15
3B135		*		*		15
3B139		*			*	11
3B142	*		*			15
3B145	*				*	15
3B146	*				*	11
3B150	*				*	15
3B154	*			*		11
3B161	*				*	15
3B163		*			*	15
3B164	*				*	15
3B167**	*				*	11
3B168**	*				*	12

\*\*These two withdrew after their first practice. Their score on the first practice is added to the mean year mark for the second and third practices.

## Basic data concerning Bede College Students 1967 to 1970

Student Number	Otis I.Q.	GPTP (Flexibility)	Interview Score	G.C.E. Score	TPI mark	TPII mark	TPIII mark	TP total mark	Not tested = *
3B1	119	50	4	9	5	5	5	15	
3B2	-	-	1	5	5	5	3	13	*
3B3	-	-	3	7	5	5	5	15	*
3B4	115	70	4	5	5	5	5	15	
3B5	126	58	4	12	5	5	3	13	
3B6	-	-	2	6	3	5	5	13	*
3B7	-	-	2	13	5	5	5	15	*
3B8	121	55	3	11	5	5	5	15	
3B9	-	-	3	5	5	5	5	15	*
3B10	114	45	4	12	5	5	5	15	
3B11	123	50	2	10	5	5	5	15	
3B12	-	-	3	7	5	5	5	15	*
3B13	124	46	1.5	11	5	5	5	15	
3B14	-	-	2	14	5	5	5	15	*
3B15	121	56	1.5	12	5	5	5	15	
3B16	-	-	1	8	3	5	5	13	*
3B17	127	40	3	12	5	5	5	15	
3B18	104	44	1	9	5	5	3	13	
3B19	113	56	4	5	5	5	5	15	
3B20	-	-	4	8	5	5	5	15	*

Student Number	Otis I.Q.	CPTP (Flexibility)	Interview Score	G.C.E. Score	TPI mark	TPII mark	TPIII mark	TP total mark	Not tested = *
3B21	112	43	1.5	7	5	5	5	15	
3B22	105	44	2	5	5	5	5	15	
3B23	101	54	2	7	5	5	5	15	
3B24	126	43	2	9	5	5	5	15	
3B25	-	-	2	13	5	5	5	15	*
3B26	111	53	2.5	5	5	5	5	15	
3B27	125	53	2	6	5	5	5	15	
3B28	-	-	2	15	3	1	5	9	*
3B29	114	58	4	8	5	5	5	15	
3B30	132	52	4	15	5	5	5	15	
3B31	-	-	3	7	5	5	3	13	*
3B32	-	-	4	14	5	3	5	13	*
3B33	115	77	2	7	3	5	5	13	
3B34	118	54	2	9	3	5	5	13	
3B35	104	55	3	13	5	5	5	15	
3B36	117	74	3	7	5	5	5	15	
3B37	-	-	2.5	12	5	5	5	15	*
3B38	120	55	2	7	5	5	5	15	
3B39	116	37	2	7	3	5	5	13	
3B40	-	-	2.5	10	3	5	5	13	*
3B41	120	48	2	12	5	5	5	15	
3B42	-	-	3	5	5	5	5	15	*

Student Number	Otis I.Q.	CPTP (Flexibility)	Interview Score	G.C.E. Score	TPI mark	TPII mark	TPIII mark	TP total mark	Not tested = *
3B43	126	45	3	6	5	5	5	15	
3B44	-	-	2	15	5	1	5	15	*
3B45	103	63	4	10	5	5	5	15	
3B46	118	52	2	10	5	5	5	15	
3B47	118	57	4	10	3	5	5	13	
3B48	115	45	4	11	5	5	5	15	
3B49	-	-	3	13	5	5	5	15	*
3B50	104	58	3	8	5	5	5	15	
3B51	116	53	2.5	10	5	5	5	15	
3B52	109	43	1.5	13	5	5	5	15	
3B53	110	40	2	10	5	5	5	15	
3B54	114	51	1.5	10	5	3	5	13	
3B55	-	-	3	7	5	5	5	15	*
3B56	126	49	2	7	5	1	5	11	
3B57	-	-	3	5	5	3	5	13	*
3B58	-	-	2	12	5	5	5	15	*
3B59	-	-	3	9	5	5	5	15	*
3B60	-	-	2.5	8	5	5	5	15	*
3B61	126	47	4	10	5	5	5	15	
3B62	121	38	2	8	3	3	5	11	
3B63	-	-	1	14	5	5	5	15	*
3B64	-	-	2	6	5	3	5	13	*
3B65	117	44	2	8	5	5	5	15	
3B66	-	-	2	7	5	5	5	15	*

Student Number	Otis I.Q.	CPTP (Flexibility)	Interview Score	G.C.E. Score	TPI mark	TPII mark	TPIII mark	TP total mark	Not tested = *
3B67	-	-	2	10	5	5	5	15	*
3B68	121	68	2	5	3	5	5	13	
3B69	121	42	4	8	5	5	5	15	
3B70	123	72	2	11	5	5	5	15	
3B71	-	-	2	11	5	3	5	13	*
3B72	-	-	2	10	5	3	5	13	*
3B73	118	72	3	7	5	5	5	15	
3B74	113	42	4	12	5	5	5	15	
3B75	-	-	2.5	11	2	3	5	10	*
3B76	126	53	2.5	7	5	5	5	15	
3B77	121	41	3	7	5	5	5	15	
3B78	-	-	3	6	5	5	5	15	*
3B79	108	54	2	6	5	5	5	15	
3B80	120	41	1	9	5	5	5	15	
3B81	-	-	3	14	5	5	5	15	*
3B82	106	39	1.5	7	5	5	5	15	
3B83	-	-	3	9	3	5	5	13	*
3B84	119	65	3	9	5	5	5	15	
3B85	114	38	1	6	5	5	5	15	
3B86	120	42	2	15	3	5	5	13	
3B87	127	65	2	7	5	5	5	15	
3B88	126	45	2	15	5	5	5	15	
3B89	130	75	2	10	5	5	5	15	
3B90	-	-	3	11	5	1	5	11	*

Student Number	Otis I.Q.	CPTP (Flexibility)	Interview Score	G.C.E. Score	TPI mark	TPII mark	TPIII mark	TP total mark	Not tested = *
3B91	112	45	0	13	3	3	5	11	
3B92	126	60	2.5	9	5	5	1	11	
3B93	-	-	3	7	5	3	5	13	*
3B94	-	-	1.5	10	5	5	5	15	*
3B95	119	50	1.5	15	5	5	5	15	
3B96	107	58	3	9	5	5	5	15	
3B97	114	51	4	11	5	5	5	15	
3B98	-	-	3	11	5	5	5	15	*
3B99	103	60	4	9	5	5	5	15	
3B100	-	-	4	9	5	5	5	15	*
3B101	-	-	3	5	5	5	5	15	*
3B102	123	66	4	8	5	5	5	15	
3B103	122	59	4	8	5	5	5	15	
3B104	-	-	2	8	5	5	5	15	*
3B105	111	48	2	8	3	5	5	13	
3B106	109	70	4	7	5	5	5	15	
3B107	-	-	2	5	5	5	5	15	*
3B108	-	-	4	12	5	4	5	14	*
3B109	-	-	2	7	5	3	5	13	*
3B110	116	37	3	6	3	5	5	13	
3B111	-	-	3	12	5	5	5	15	*
3B112	-	-	1	8	5	5	5	15	*
3B113	121	42	1.5	12	5	5	5	15	
3B114	122	52	1	11	3	5	5	13	

Student Number	Otis I.Q.	CPTP (Flexibility)	Interview Score	G.C.E. Score	TPI mark	TPII mark	TPIII mark	TP total mark	Not tested = *
3B115	127	52	2	7	5	5	5	15	
3B116	121	71	2	11	5	5	5	15	
3B117	113	45	3	16	5	5	5	15	
3B118	121	49	1	13	5	5	5	15	
3B119	109	44	4	12	5	5	5	15	
3B120	106	43	4	8	5	5	5	15	
3B121	121	47	2	9	5	5	5	15	
3B122	-	-	3	6	5	5	5	15	*
3B123	107	44	3	11	5	5	5	15	
3B124	99	65	2	12	5	5	5	15	
3B125	-	-	1.5	8	5	5	5	15	*
3B126	-	-	2	11	5	5	3	13	*
3B127	-	-	1.5	12	5	3	5	13	*
3B128	100	56	1.5	11	5	5	5	15	
3B129	119	48	3	11	5	3	5	13	
3B130	127	85	2	16	5	5	5	15	
3B131	124	55	4	8	5	5	5	15	
3B132	-	-	2	8	5	5	5	15	*
3B133	123	47	2	8	5	5	5	15	
3B134	120	47	0	8	5	5	5	15	
3B135	-	-	4	5	5	5	5	15	*
3B136	123	79	2	8	5	5	5	15	
3B137	113	63	3	10	5	5	5	15	
3B138	113	40	4	16	5	5	3	13	

Student Number	Otis I.Q.	CPTP (Flexibility)	Interview Score	G.C.E. Score	TPI mark	TPII mark	TPIII mark	TP total mark	Not tested = *
3B139	-	-	2	6	5	5	1	11	*
3B140	115	71	2	10	5	5	5	15	
3B141	121	46	4	12	5	5	5	15	
3B142	-	-	2.5	12	5	5	5	15	*
3B143	125	113	2.5	14	5	5	5	15	
3B144	-	-	2	12	5	5	5	15	*
3B145	-	-	1.5	7	5	5	5	15	*
3B146	-	-	3	11	1	5	5	11	*
3B147	120	49	1.5	7	5	5	5	15	
3B148	100	26	2	9	3	1	5	9	
3B149	114	63	3	7	5	5	5	15	
3B150	-	-	1	10	5	5	5	15	*
3B151	124	45	2	6	5	5	5	15	
3B152	100	41	1.5	7	2	5	5	12	
3B153	122	49	3	13	5	5	5	15	
3B154	-	-	2.5	5	5	5	1	11	*
3B155	117	70	2	12	5	5	5	15	
3B156	96	64	4	5	5	5	5	15	
3B157	115	39	2	12	3	5	5	13	
3B158	108	84	4	9	5	5	1	11	
3B159	113	38	0	8	5	5	5	15	
3B160	112	58	4	12	5	5	5	15	
3B161	-	-	3	9	5	5	5	15	*
3B162	114	56	3	11	5	5	5	15	

Student Number	Otis I.Q.	CPTP (Flexibility)	Interview Score	G.C.E. Score	TPI mark	TPII mark	TPIII mark	TP total mark	Not tested = *
3B163	-	-	2	7	5	5	5	15	*
3B164	-	-	3	12	5	5	5	15	*
3B165	115	48	4	11	5	5	5	15	
3B166	111	79	2	7	5	5	5	15	
3B167	-	-	3		2	4.5	4.5	11	*
3B168	-	-	3		3	4.5	4.5	12	*

Students No. 3B167 and 3B168 withdrew after their first practice because of their teaching performance. They were given the mean year grade for the two subsequent practices.

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 1	-	-	4	9	4	*
Sh 2	123	60	4	10	4	
Sh 3	-	-	6	5	5	*
Sh 4	121	73	4	10	3	
Sh 5	130	58	4	13	4	
Sh 6	115	56	5	10	5	
Sh 7	114	62	4	13	5	
Sh 8	100	60	5	6	4	
Sh 9	101	50	5	8	3	
Sh 10	114	73	4	10	5	
Sh 11	117	58	4	7	3	
Sh 12	105	74	3	5	5	
Sh 13	124	70	3	9	5	
Sh 14	-	-	5	11	4	*
Sh 15	103	66	6	13	6	
Sh 16	-	-	4	11	3	*
Sh 17	127	89	7	10	6	

Continued

Table No. 34 (Continued)

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 18	-	-	2	5	4	*
Sh 19	115	72	4	11	5	
Sh 20	-	-	7	9	4	*
Sh 21	-	-	4	9	3	*
Sh 22	-	-	6	9	4	*
Sh 23	113	91	4	7	5	
Sh 24	-	-	5	7	3	*
Sh 25	-	-	4	14	5	*
Sh 26	110	88	3	7	5	
Sh 27	122	63	4	7	2	
Sh 28	115	85	3	12	6	
Sh 29	113	85	5	7	4	
Sh 30	104	62	4	5	6	
Sh 31	107	61	3	5	6	
Sh 32	112	63	3	7	5	
Sh 33	-	-	5	7	4	*
Sh 34	120	63	4	6	4	
Sh 35	-	-	3	9	3	*
Sh 36	-	-	7	16	4	*

Table No. 34 (Continued)

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 37	114	68	5	8	6	
Sh 38	-	-	4	7	4	*
Sh 39	120	82	5	12	5	
Sh 40	116	61	4	10	5	
Sh 41	120	84	5	10	4	
Sh 42	106	77	3	11	6	
Sh 43	119	91	6	8	6	
Sh 44	112	92	4	12	5	
Sh 45	-	-	6	8	6	*
Sh 46	103	97	5	7	6	
Sh 47	121	40	5	9	2	
Sh 48	83	50	5	7	3	
Sh 49	103	81	3	8	5	
Sh 50	118	72	6	9	6	
Sh 51	118	91	4	7	6	
Sh 52	101	43	5	9	6	
Sh 53	113	54	4	15	4	
Sh 54	104	62	4	10	5	
Sh 55	122	78	7	7	4	

Continued

Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 56	117	89	7	14	6	
Sh 57	117	107	7	14	4	
Sh 58	107	70	5	8	6	
Sh 59	116	69	5	14	4	
Sh 60	108	71	5	7	4	
Sh 61	124	117	2	8	5	
Sh 62	104	72	4	8	6	
Sh 63	108	58	5	6	3	
Sh 64	109	70	4	13	5	
Sh 65	98	62	5	10	5	
Sh 66	-	-	4	12	2	*
Sh 67	-	-	5	7	1	* Withdrew
Sh 68	-	-	4	7	1	* Withdrew
Sh 69	119	63	4	13	5	
Sh 70	127	58	5	15	4	
Sh 71	118	74	4	10	4	
Sh 72	124	58	4	7	4	
Sh 73	127	67	3	10	4	
Sh 74	-	-	4	6	4	*

Continued

Table No. 34 (Continued)

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 75	108	58	3	11	4	
Sh 76	125	67	3	12	4	
Sh 77	124	76	6	14	4	
Sh 78	115	77	6	7	4	
Sh 79	-	-	5	5	5	*
Sh 80	124	97	4	6	5	
Sh 81	93	56	3	6	5	
Sh 82	-	-	4	10	1	* Withdrawn
Sh 83	-	-	4	4	3	*
Sh 84	-	-	7	6	4	*
Sh 85	127	79	5	12	4	
Sh 86	106	71	4	10	6	
Sh 87	123	67	3	10	6	
Sh 88	-	-	6	8	5	*
Sh 89	123	68	3	5	2	
Sh 90	127	75	4	8	5	
Sh 91	-	-	5	17	2	*
Sh 92	109	94	6	10	6	
Sh 93	-	-	4	6	5	*

Continued

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 94	-	-	4	6	4	*
Sh 95	111	81	5	7	5	
Sh 96	109	60	3	7	3	
Sh 97	125	76	4	9	5	
Sh 98	117	71	4	8	4	
Sh 99	109	76	6	4	4	
Sh 100	121	93	6	15	5	
Sh 101	117	68	4	7	4	
Sh 102	133	91	2	12	4	
Sh 103	109	63	4	10	3	
Sh 104	115	61	4	14	3	
Sh 105	-	-	4	5	5	*
Sh 106	113	77	3	10	6	
Sh 107	113	74	4	5	5	
Sh 108			4	10	5	*
Sh 109	100	54	5	6	4	
Sh 110	-	-	4	11	3	*
Sh 111	123	62	4	10	4	
Sh 112	-	-	6	7	5	*

Continued

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 113	115	56	6	11	4	
Sh 114	109	100	4	9	5	
Sh 115	119	90	4	11	6	
Sh 116	-	-	4	13	5	*
Sh 117	116	52	4	7	4	
Sh 118	123	61	5	6	3	
Sh 119	-	-	3	8	5	*
Sh 120	124	78	4	10	4	
Sh 121	-	-	4	14	3	*
Sh 122	-	-	6	10	5	*
Sh 123	111	75	4	6	6	
Sh 124	122	64	4	11	4	
Sh 125	123	77	5	14	4	
Sh 126	-	-	3	11	2	*
Sh 127	110	44	4	6	3	
Sh 128	108	59	6	5	4	
Sh 129	109	57	3	9	4	
Sh 130	109	65	4	7	5	
Sh 131	108	93	6	11	4	
Sh 132	112	79	4	6	5	

Table No. 34 (Continued)

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 133	110	48	4	13	3	
Sh 134	112	68	6	10	5	
Sh 135	128	83	5	10	4	
Sh 136	113	82	4	9	4	
Sh 137	117	55	4	10	4	
Sh 138	124	90	5	10	5	
Sh 139	105	67	4	7	4	
Sh 140	113	67	4	12	4	
Sh 141	-	-	5	7	4	*
Sh 142	118	67	4	7	4	
Sh 143	122	61	5	9	3	
Sh 144	-	-	5	14	6	*
Sh 145	-	-	5	8	3	*
Sh 146	109	113	5	7	4	
Sh 147	111	69	7	10	5	
Sh 148	-	-	6	6	6	*
Sh 149	110	83	4	5	4	
Sh 150	113	79	4	7	4	
Sh 151	-	-	4	7	4	*
Sh 152	119	76	6	11	4	

Continued

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 153	100	78	4	6	4	
Sh 154	113	64	4	5	4	
Sh 155	114	75	5	12	6	
Sh 156	112	90	6	8	4	
Sh 157	110	50	4	13	4	
Sh 158	108	59	6	9	4	
Sh 159	-	-	7	12	4	*
Sh 160	123	67	4	6	6	
Sh 161	102	47	4	11	3	
Sh 162	125	72	3	7	5	
Sh 163	-	-	3	8	6	*
Sh 164	111	68	5	12	4	
Sh 165	127	89	7	4	6	
Sh 166	-	-	4	12	4	*
Sh 167	108	112	5	10	6	
Sh 168	111	69	7	4	3	
Sh 169	-	-	4	10	2	
Sh 170	114	91	4	8	5	
Sh 171	-	-	4	7	5	*
Sh 172	122	64	4	5	6	

Table No. 34 (Continued)

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 173	131	87	3	8	4	
Sh 174	117	86	3	9	6	
Sh 175	112	56	5	9	4	
Sh 176	119	83	6	12	5	
Sh 177	115	59	4	5	4	
Sh 178	113	81	6	12	5	
Sh 179	109	60	4	8	4	
Sh 180	-	-	6	9	6	*
Sh 181	-	-	4	6	6	*
Sh 182	106	98	4	7	4	
Sh 183	115	63	4	5	6	
Sh 184	-	-	4	15	4	*
Sh 185	108	62	4	6	4	
Sh 186	126	77	5	9	5	
Sh 187	116	71	5	12	5	
Sh 188	100	62	4	6	4	
Sh 189	109	53	4	7	4	
Sh 190	114	84	4	9	6	
Sh 191	116	75	5	9	6	
Sh 192	114	76	3	10	4	

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 193	128	81	2	6	5	
Sh 194	-	-	3	8	5	*
Sh 195	109	98	4	8	4	
Sh 196	120	58	3	14	5	
Sh 197	-	-	3	6	3	*
Sh 198	-	-	4	6	2	*
Sh 199	-	-	4	6	4	*
Sh 200	121	102	4	10	6	
Sh 201	125	51	4	6	2	
Sh 202	-	-	5	11	4	*
Sh 203	-	-	4	8	5	*
Sh 204	126	78	5	11	6	
Sh 205	-	-	5	10	3	*
Sh 206	101	70	3	8	5	
Sh 207	110	66	4	9	4	
Sh 208	123	58	6	12	3	
Sh 209	-	-	6	5	2	*
Sh 210	135		5	13	4	
Sh 211	102	45	3	6	2	
Sh 212	109	44	5	7	4	

Table No. 34 (Continued)

## Basic Data Concerning Shenstone College Students

1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 213	112	71	4	4	4	
Sh 214	-	-	4	8	4	*
Sh 215	113	86	4	5	4	
Sh 216	107	68	6	9	5	
Sh 217	-	-	5	8	4	*
Sh 218	-	-	4	6	3	*
Sh 219	131	60	6	10	5	
Sh 220	-	-	5	5	4	*
Sh 221	112	71	7	10	6	
Sh 222	-	-	5	12	5	*
Sh 223	-	-	3	8	3	*
Sh 224	112	65	5	4	4	
Sh 225	109	76	4	10	6	
Sh 226	-	-	5	8	4	*
Sh 227	-	-	6	13	6	*
Sh 228	-	-	5	10	6	*
Sh 229	-	-	3	7	5	*
Sh 230	-	-	4	5	4	*
Sh 231	-	-	3	5	4	*
Sh 232	-	-	5	11	4	*

Table No. 34 (Continued)

Basic Data Concerning Shenstone College Students  
1970-1973

Student Number	Otis I.Q.	CPTP Flexibility	Interview Score	GCE Score	Teaching Practice Total Grade	Incomplete data available = *
Sh 233	-	-	3	5	4	*
Sh 234	-	-	5	4	5	*
Sh 235	-	-	4	7	4	*
Sh 236	-	-	4	9	2	*
Sh 237	-	-	3	5	4	*
Sh 238	-	-	4	11	2	*
Sh 239	103	53	4	7	4	
Sh 240	101	69	5	8	4	
Sh 241	-	-	4	5	3	*
Sh 242	104	55	3	5	4	

N = 242

Students tested = 166

Students not listed above = 19. Included 2 foreign nationals for whom English was not their first language and 17 who either left before the second teaching practice or for whom teaching practice information was incomplete.

Appendix One

Description of three predictors used  
in the empirical research

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Appendix One

Throughout this study the dependent criterion has been student teaching practice ability as assessed by their college of education tutors. Various possible predictors were explored to see if they showed a relationship with the dependent criterion

1. Interview grades - being the summed marks provided by two interviewing tutors
2. General Certificate of Education passes - the grade given depending on the number and level of passes a student had gained
3. Otis Gamma I.Q. scores as obtained on the quick scoring Am version.
4. Scores on the progressive version of a test of flexibility (called C.P.T.P. in later versions) which is described in detail in appendix two.

Interview grades

Over the period covered by this research the interviewing techniques used at Bede College did not alter, at least in theory. The same version of a duplicated sheet was filled in by the interviewing tutors throughout the period 1960 to 1967. (Copy in back of thesis.)

One change which may have affected the interviewing situation was the rapid expansion of the college during the first half of the 1960's. The college staff more than doubled. Many of the new members of staff were 'in transit' and moved on after two or three years.

~~Most new tutors went through an interviewing apprenticeship~~ which consisted of joining a member of staff who was already experienced in the interviewing process. Often this apprenticeship lasted for a single afternoon of interviews.

The general pattern was for an applicant to be interviewed by two tutors, separately. The first would usually be a member of the department in which the applicant hoped to study his main subject. The second would be with a tutor outside that subject. Usually this second tutor would be a member of the education department. Very late applicants tended to be interviewed by the admissions tutor, vice-principal or principal.

All application forms and interviewing forms went to the principal who made the final decisions and offers of a place.

Tutors under "Summary" ticked one of three estimates

Positive

Average

Negative

These were given a numerical value of two, one or nothing for the purposes of this study. In practice some tutors added plus or minus to the grade they gave, so the marks were modified to

Positive = 2

Positive minus ) =  
Average plus ) =  $1\frac{1}{2}$

Average = 1

Average minus ) =  
Negative plus ) =  $\frac{1}{2}$

Negative = 0

Thus from two tutors a student could get any one of nine combined grades from 0 to 4.

One further problem was caused by some tutors who did not tick any of the three choices. Here another category of ticks was used to estimate what grade would have been given out of the three positive, average, negative. This estimate was taken from a box headed:

"Overall Grade Tick" and broken down to

++

+

Acceptable

-

Reject

Again the tutor ticked the one he felt best suited the candidate he had interviewed. No tutor failed to use at least one of these two overall impression boxes.

General Certificate of Education

Several researchers have used School Certificate and General Certificate of Education passes as predictors of future academic or teaching performance. Saer<sup>675</sup> had found that women students with the Higher School Certificate were significantly superior to those women with only the School Certificate when their performance on teaching practice was concerned. Claudine Morgan<sup>676</sup> used grades obtained for ordinary level passes in the G.C.E. and translated Advanced level G.C.E. letter grades into numerical equivalents. She found no relationship between teaching practice marks (as awarded by six tutors over three practices) and actual grades obtained in G.C.E. Nor was there a relationship between teaching practice marks and the students predicted G.C.E. marks. The student's head teacher having done the predicting.

John Mann<sup>662</sup> had used the number of passes in G.C.E. as a coarse measure of the academic qualification of students when they entered colleges, a method which Walters<sup>584</sup> also used and at the same time pointed out that the predictive value of the actual G.C.E. results was higher than those known at the time of the student's interview. Harvey<sup>245</sup> with one exception had found that G.C.E. grades failed to show a significant relationship with teaching practice marks. Baranyay<sup>26</sup> had found that the best student teachers were significantly better qualified, academically, than the worst. Research findings then would suggest that General Certificate of Education marks were not a particularly trustworthy predictor of

teaching practice marks. However they are used in the selection process. The Department of Education and Science lays down certain minimum requirements. Colleges often add their own. Simons<sup>486</sup> had found that the academic entry qualifications of students at various colleges were significantly superior or inferior to the national average. Within colleges too scarcity subjects tend to have a larger proportion of students with low academic entry qualifications.

Because performance in the General Certificate of Education is one of the screening factors used when deciding whether to offer a student a place or not it was felt pertinent to look at the relationship between G.C.E. passes and teaching performance. Actual rather than potential passes were used as the predictive measure. These were treated in the same way as John Mann had treated his data namely one point was given for every pass at the ordinary level. Unlike Mann's method however passes at the Advanced level were given two points. Various objections to this method can be seen: a person scraping a grade six pass gets the same credit as someone getting a grade one pass. Similarly at advanced level an E would get the same reward as an A. Another problem was the differing policy towards the ordinary level held in different schools. Some see ordinary level as a wide field of study and pupils take as many as ten, eleven or twelve subjects. Others see ordinary level as the stage at which subjects due to be dropped at advanced level are taken and so shed. Thus a sciences 'A' level pupil might not take

any sciences at 'O' level but instead take the 'Arts' subjects such as English Language, a foreign language, etc. Should a student with a subject at the Advanced level be credited with a point for 'O' level in that subject even if he had not taken it?

The more the variables were considered the less did catering for them appear to be possible. It was therefore accepted that:

A level pass = 2 points

O level pass = 1 point

was at best a crude estimate of a student's academic worth.

The Otis Gamma I.Q. test consists of 80 mixed verbal and non-verbal items. The 1954 version is based on the 1939 version.<sup>687</sup> This in its turn was developed from Arthur Otis's work with American forces during the first World War. The current version has a split half reliability index of +0.88 based on the scores of 489 freshmen who entered the College of the Holy Cross, Worcester, Massachusetts in 1953.

The author claims that the purpose of the Gamma test is to measure the 'degree of brightness' of pupils and as such is a measure of I.Q.

The Otis gamma I.Q. test was chosen for several reasons:-

1. It takes half an hour to administer and so fitted in well with the test of flexibility in the total time available.
2. The version suitable for British testees is not commonly used in schools and so the risk of applicants having recently taken it was slight. The author had found that 'practice effect' raised Gamma I.Q. scores by 4 points. Similar improvements due to practice occur for most testees with most intelligence tests. The less familiar the test the less likely was this form of contamination of results to have occurred.
3. The Otis Gamma I.Q. test is a traditional, academically oriented test. As such it fitted very well into the concept of a test of convergent thinking ability.

4. Several British investigators have used Otis as a predictor of teaching success. None have used it in conjunction with a test of flexibility. Evans<sup>186</sup> got low nonsignificant positive correlations between Otis I.Q. scores and teaching practice marks. Two other researchers who got different results were Nandi<sup>586</sup> who got a highly significant correlation of +0.40 for the relationship between Otis and teaching practice marks for 284 student teachers on an emergency training course shortly after the second World War and Walters who conversely got three virtually zero correlations for 116 students, 125 students and 125 students during the 1950's. His correlations ranged from -0.01 to +0.11. It would therefore be interesting to see whether the present investigation supported the results of either of these earlier workers.

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Appendix Two

Development of the test of Flexibility

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Appendix TwoDevelopment of the test of flexibility

In an earlier seventeen week study<sup>121</sup> in America an eighteen item test was put together. Fourteen of the items were taken from Guilford's<sup>678</sup> "Factor analytic study of problem solving abilities", one had been written by L. L. Thurstone and two were new items. The test took 45 minutes plus a small amount of administration time. Each item was separately timed and required a different time, between two and four minutes.

One of the first tasks in the present study was to construct an improved test. Several of the items used in the initial study were discarded for one or more of three reasons:-

- a) The test had to be cut down in length in order to reduce the amount of time taken
- b) Several items showed no ability to discriminate between 'whole test' high scorers and 'whole test' low scorers.
- c) Several items failed to meet Guilford's own criterion of being problems capable of more than one acceptable solution, that is they failed to be items which were testing ability to think divergently. The test used however had to be a test of divergent thinking if it was to be used to investigate the hypothesis that  
"A person needs to be flexible if he is to be a successful teacher. Possibly flexibility in terms of relationships with children, ability to manipulate materials, and ability to alter one's own style of

presentation would be reflected in scores obtained on a written test of flexibility/divergent thinking ability."

1. The test had to be cut from 45 minutes to 30 minutes if it and an I.Q. test were both to be given in the time allocated for testing. It was essential therefore to delete only those items which did little or nothing to contribute to the test's reliability (reliability of a test increases with length provided the individual items are reliable and valid).
2. The test as a whole had to either a) not differentiate between 'science' and 'arts' students as found by Liam Hudson<sup>274</sup> with his sixth form boys or b) have two sets of standardised norms for the differing types of student.
3. Each question had to have enough time to exhaust the imagination of all students otherwise maximum credit might tend to go to the swiftest writer rather than to the most divergent thinker.
4. Each question had to elicit responses which the examiner was capable of marking.
5. The test needed to be reliable.
6. Each item needed to show a high discrimination figure.
7. The test as a whole needed to show an high predictive validity correlation with the criterion of student teaching marks.

#### Items

The first 18 question version of the test had been given to 69 students in their final year at the University of North Carolina

during the Spring of 1965. All of the students were volunteers due to start their practice teaching sessions in local schools. Item discrimination analysis was carried out on individual questions by comparing the performance of the 20 students getting the lowest total mark on the test with the performance of those 20 getting the highest total mark. Each group was approximately 29% of the total number of students.

The formula  $\frac{H - L}{N}$  was adapted for the purposes of item discrimination. Normally

H = the sum of scores of the high group on a particular question

L = the sum of scores of the low group on a particular question

N = the number of testees in one of the groups where a question

has been simply either right or wrong.

In this case it was decided to find the mean score for each question. (The mean being the mean of the scores for the forty students making up the high and low groups.) If an individual's score was below the mean he contributed no points to his group's total. If his score was above the mean he contributed one point to his groups total. H was used to represent the score of the high group L was used to represent the score of the low group.

The items will now be considered in the order in which they were discarded concluding with the ten questions used in the final version of the test.

Items discarded after the first version of the test <sup>of</sup> flexibility

1. "Suggest two improvements for the elephant involving drastic changes."

Time allowed two minutes.

Score: one point per valid improvement. Maximum 2 points.

Total group mean = 1.45

Number in high group exceeding mean = 13

Number in low group exceeding mean = 8

$$\frac{H - L}{N} = \frac{5}{20} = +0.25$$

This item therefore discriminated in favour of the high scoring group but the value would be regarded as low for discriminatory purposes. Although one of Guilford's own items it was discarded because i. The limit of two responses did not meet the criterion of maximum chance to respond ii. It was also felt that interpretation of what constituted a valid drastic change was too subjective for marking purposes and iii. The item discrimination figure was too low.

2. "Suggest two improvements for the elephant involving minor changes."

Time allowed one minute.

Score: one point per valid improvement. Maximum 2 points.

Total group mean = 1.3

Number in high group exceeding mean = 9

Number in low group exceeding mean = 3

$$\frac{H - L}{N} = \frac{6}{20} = +0.3$$

Once again the discrimination index was positive and approaching what is generally felt to be an acceptable value. The question was

discarded however because it failed to offer maximum chance to respond and again the decision as to what constituted a minor improvement was too subjective for marking purposes.

3. "Write as many words as you can think of similar in meaning to the word HARD".

Time allowed one minute.

Score: one point per acceptable answer.

Total group mean = 3.225

Number in high group exceeding the mean = 14

Number in low group exceeding the mean = 6

$$\frac{H - L}{N} = \frac{8}{20} = +.40$$

~~This item although of reasonable discriminatory powers was discarded because of the low number of responses only one student achieved a score of eight, the mean for the high sub group being only 4.3 and it was felt that the question would fail to provide enough plausible alternatives where the time allowance was standardised at three minutes. The word "hard" was therefore replaced with the word tough in the first revision, as it appeared to offer more alternatives.~~

4. "List all of the attributes you can think of for chewing gum."

Time allowed two minutes.

Score: one point for each acceptable answer.

Total group mean = 5.825

Number in the high group exceeding the mean = 11

Number in the low group exceeding the mean = 7

$$\frac{H - L}{N} = \frac{4}{20} = +0.20$$

The question showed a low positive discrimination but many answers had been disqualified because they were 'uses' rather than 'attributes'. It was decided to try the question again changing the one word from 'attributes' to 'uses'.

5. "You wish to drive a nail into a wooden post. You have none of the tools usually used for this purpose. List the attributes that a usable object or device should have."

Time allowed two minutes.

Score: one point for each acceptable answer.

Total group mean = 3.485

Number in the high group exceeding the mean = 11

Number in the low group exceeding the mean = 8

$$\frac{H - L}{N} = \frac{3}{20} = +0.15$$

This question produced a very small difference between the two groups in the favour of the high group and was discarded because of its poor discriminatory powers.

6. "List as many different ways as you can think of in which an orange differs from an apple."

Time allowed 4 minutes.

Score: one point for each acceptable answer.

Total group mean = 8.825

Number in the high group exceeding the mean = 15

Number in the low group exceeding the mean = 4

$$\frac{H - L}{N} = \frac{11}{20} = +0.55$$

This was a very satisfactory item and was only discarded because of its similarity to another item which was retained throughout the various revisions.

7. "Indicate the object which would be most useful in helping to start a fire

A fountain pen, an onion, a light bulb, a pocket watch, a football."

Time allowed, one minute.

Score: one point for the correct answer.

Total group mean = 0.075

Only three out of the forty students agreed with Guilford's answer - a pocket watch. The question was discarded because it failed to meet the criterion for divergent questions of having a variety of possible solutions. No item analysis was carried out as any result would be valueless.

8. "List as many fluids as you can think of which burn."

Time allowed two minutes.

Score: one point per acceptable answer.

Total group mean = 6.375

Number in the high group exceeding the mean = 13

Number in the low group exceeding the mean = 5

$$\frac{H - L}{N} = \frac{8}{20} = +0.4$$

The item therefore discriminated satisfactorily in favour of the high group. It was replaced with a more limited question using the word 'liquids' in place of 'fluids', because so many of the non

science students in a post test discussion claimed they had not known that gases were fluids.

9. "Arrange the following four words so that the first is associated with the second, the second with the third and the third with the fourth

Pig Pen Read Write

Time allowed one minute.

Score: one point for each correct pair of associations. Maximum three.

Total group mean 2.425

Number in the high group exceeding the mean = 11

Number in the low group exceeding the mean = 10

$$\frac{H - L}{N} = \frac{1}{20} = +0.05$$

This item showed virtually no ability to discriminate between the two groups and by only allowing one correct solution failed to be a question measuring flexibility or divergent ability.

10. "State one way in which words in the following pairs are similar."

quarter - fifth

nickel - quarter

quarter - innings

Time one minute.

Points one for each correct answer.

Total group mean = 1.65

Number in the high group exceeding the mean = 14

Number in the low group exceeding the mean = 6

$$\frac{H - L}{N} = \frac{8}{20} = +0.40$$

This item although producing an acceptable positive discrimination figure was discarded because it failed to allow flexible responses and also was an unsuitable item for British students.

11. "Put these sentences in pairs if they express the same kind of ideas.

1. He walks home every night.
2. Some animals make good pets.
3. Artists are sometimes well paid.
4. The train gathered speed as it left.
  - A. Bats are real friends.
  - B. ~~Deer~~ are excellent game.
  - C. Exercise promotes good health.
  - D. The storm approached rapidly.
  - E. The picture sold for twice its real value.

Time allowed one and a half minutes.

Points one per correct grouping.

Total group mean = 2.775

Number in the high group exceeding the mean = 11

Number in the low group exceeding the mean = 9

$$\frac{H - L}{N} = \frac{2}{20} = +0.10$$

This item was rejected because it lacked discriminatory powers and failed to allow flexibility of responses.

12. "Produce three words to complete a chain of associations

between the two given words. DO NOT WRITE A SENTENCE.

RED \_\_\_\_\_ BEAR."

Time allowed two minutes.

Points: One per correct group of associations. Maximum four.

Total group mean = 2.7

Number in high group exceeding the mean = 12

Number in low group exceeding the mean = 5

$$\frac{H - L}{N} = \frac{7}{20} = +0.35$$

This item was acceptable in terms of its discrimination value but failed to allow any flexibility of quantity of responses and so was rejected. It was also a difficult question to mark as some of the associations were clear to the examiner.

13. "Arrange the following words into four mutually exclusive groups - 1. Blue. 2. Cutter. 3. Driver. 4. Heavy. 5. Larger. 6. Light. 7. Little. 8. Long. 9. Opener. 10. Orange. 11. Redder. 12. Short.

Time allowed two and a half minutes.

Points: one per correct group of associations. Maximum 4.

Total group mean = 1.925

Number in the high group exceeding the mean = 15

Number in the low group exceeding the mean = 9

$$\frac{H - L}{N} = \frac{6}{20} = +0.3$$

This question was rejected because there was only one acceptable right answer. It therefore failed to meet the criterion requirements

of a divergent question.

The first revised version of the test of flexibility was shorter, half an hour as opposed to three-quarters, contained less questions, ten rather than eighteen, and every question ran for the same length of time, three minutes.

Thirteen students from St. Hild's College Durham took both the test of flexibility and the Otis Gamma I.Q. test form A. Initially it had been hoped that the Hild's students would be a research sample. As the numbers were so small, the occasion was used instead to see whether the test items did reasonably exhaust most of the testees and also to try out the total testing procedure in the time which would be available at Bede College. This would be one hour and twenty minutes maximum, assuming the students were ready promptly at the start of a testing session. Two pages were added at the front of the test and remained unchanged in one of the final versions. The first of these asked for information about the students' academic qualifications, the second page contained a brief explanation of what the test was about and what to do. Both of these are shown on pages 474 to 475 covering the final version of the test. An alternative front page for applicants was also devised and is shown on page 473.

One question was deleted after the 1963 to 1966 students at Bede College had been tested.

14. "List as many liquids as you can which burn."

19 students had formed the low group and 19 had formed the

high group both being 27.5% of those who took the test.

The mean score for the total group was 9.37.

Number in the high group exceeding the mean = 14

Number in the low group exceeding the mean = 9

$$\frac{H - L}{N} = \frac{5}{19} = +0.56$$

The question produced a very satisfactory figure for its power to discriminate between the two groups but problems arose

1. what were genuinely different liquids (- gin, rum, brandy, whiskey?),
2. the interpretation of the word burn; for if, as one student wrote, "hot coffee burn's your tongue", then so will any hot liquid a testee cares to list. A third problem was within the more narrow concept of the question, that is of liquids which could be ignited and which would burn alone or with a wick. Knowing that Amyl Acetate burns and that Carbon tetrachloride does not (easily the most popular wrong choice) was one thing, knowing whether some of the names listed even existed was quite another. The question was therefore discarded because of the lack of ability of the examiner to decide whether some of the answers were acceptable or not.

One question was therefore changed prior to the test being given to the 1964 to 1967 year group. The test was also given a title and a manual written to go with it as it seemed possible that the next year of testing several people would be looking after testing sessions at the same time.

The next pages are the final version of the test of flexibility starting with the two alternate front pages, one for students

already at college who would know their G.C.E. results and one for students applying for a place who usually would not. The letters C.P.T.P. were chosen after the first revision had apparently successfully predicted those students regarded as the worst student teachers, a feat which the earlier American version had also accomplished. They stand for the 'Crocker Poor Teach Predictor' and as later results show are to some extent an overstatement of the test's proficiency. The test pages are followed by the manual which is then followed by an item analysis which refers to the questions by number only.

C.P.T.P.

(Form A - Applicants)

Surname (Print Please) .....

Christian Name(s) .....

Age ..... Date of Birth .....

DO NOT TURN OVER UNTIL TOLD

C.P.T.P.

(Form B - Students)

Surname (PRINT PLEASE) .....

Christian Name(s) .....

Age ..... Date of Birth .....

COLLEGE .....

Year you first entered College .....

Academic qualifications PRIOR to entering College

G.C.E. Ordinary Level (subjects please) .....

.....

G.C.E. Advanced Level (subjects please) .....

.....

Other Examinations (subjects please) .....

.....

DO NOT TURN OVER UNTIL TOLD

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD

496

This is a test to see how flexible you are in your thinking.

Write your answers below the question.

DO NOT write long sentences. You get marks for the number of DIFFERENT answers which you write, thus it is important not to waste time on unnecessary words.

DO NOT turn over the page until you are told to do so. Each question is timed separately and you are given three (3) minutes in which to answer each question. Start to read and answer the next question as soon as you have turned over.

---

DO NOT TURN OVER UNTIL TOLD

1. Suggest as many different improvements for a telephone kiosk as you can think of.

DO NOT TURN OVER UNTIL TOLD

2. Write as many words as you can think of which are similar in meaning to the word TOUGH.

DO NOT TURN OVER UNTIL TOLD

3. List as many different uses for chewing gum as you can think of.

DO NOT TURN OVER UNTIL TOLD

4. List as many different types of use for a house brick as you can think of.

DO NOT TURN OVER UNTIL TOLD

5. List as many different ways as you can think of in which an apple differs from a pear.

DO NOT TURN OVER UNTIL TOLD

6. A man is sitting dozing in his favourite armchair. Suddenly he leaps up and runs from the room. Give as many different explanations as possible for his leaving.

DO NOT TURN OVER UNTIL TOLD

7. List as many DIFFERENT uses for an OLD CAR TYRE as you can think of.

DO NOT TURN OVER UNTIL TOLD

8. List as many things as you can think of which could be made by using both of the following:

A broom handle and a Nail.

DO NOT TURN OVER UNTIL TOLD

9. You decide to go for a picnic and to make the sandwiches when you get there. When you arrive you find you have forgotten to bring a knife for cutting the cheese. All that you have, apart from food, are,

1. a mouth organ,
2. matches,
3. a thermos flask, and
4. a guitar.

How could these items be used to cut the cheese?

Give as many methods as possible.

DO NOT TURN OVER UNTIL TOLD

10. You are shipwrecked on a tropical island with a group of intelligent 13 year old boys and girls. There is no prospect of rescue. You decide to hold school every morning. What will you teach? (Assume your knowledge is sufficient to be able to teach anything you wish.)

DO NOT TURN OVER UNTIL TOLD

C.P.T.P. (Flexibility)

Manual for the Second Revision

C.P.T.P. MANUAL (2nd revision)

The examiner will require the following in order to administer the test.

1. Two pencils per testee
2. One copy of the C.P.T.P. test per testee.

Care should be taken to ensure that the correct form has been provided (e.g. A or B).

Form A A research form for use with students already attending a College of Education.

Form B A research form for use with students who are applying for a place at a College of Education.

3. A reliable stop watch
4. The 'Manual of Instructions to Testees'
5. Desks sufficiently spaced to avoid copying.

INSTRUCTIONS TO TESTEES

The instructions are the same whether form A or form B of the test is used.

Examiner will say:-

"I shall explain the test to you once you have filled in the front page. Do not turn over when you have filled in the front page but please put your pencils down."

When it appears that all testees have finished writing the examiner will say:-

"Has everyone finished?"

Provided everyone has finished, say:-

"Please turn over one page and read the instructions carefully."

Examiner will then read the following instructions aloud, slowly and carefully whilst the testee is reading them.

This is a test to see how flexible you are in your thinking. Write your answers below the question.

DO NOT write long sentences. You get marks for the number of DIFFERENT answers which you write, thus it is important not to waste time on unnecessary words. (Stop reading at this point and say)

"Let me give you an example. Suppose the question read - give as many different ways as possible to improve an elephant - you decide to change its colour and write ...

paint it pink, paint it yellow, paint it blue etc. You  
will only get one mark for changing its colour."

(This example should also help to reduce examination tension.)

At the end of the printed instructions the examiner will say:-

"If you fill up the answer space below a question you may continue on the BACK of the previous page. (Demonstrate in your own booklet.) At no time turn back, or over, unless the examiner tells you."

"Now, turn to question one and start straight away."

The stop watch should be started at this point.

As each question is reached the examiner should read it out aloud.

Testees can then be sure they are answering the right question (with duplicated hand assembled booklets the risk of a blank page or repeated page exists.)

After three minutes say:-

"Stop! Turn over and continue straight away with question two."

This instruction continues up to number ten. After number ten say:-

"Stop! Put your pens down please. Close your test book and pass it to the front."

MANUAL FOR C.P.T.P.Question 1

Suggest as many different improvements for a telephone kiosk as you can think of.

Acceptable Answers (examples)

- |                        |                                   |
|------------------------|-----------------------------------|
| 1. Larger etc.         | 11. Waste paper basket            |
| 2. Sound Proofing      | 12. Slots for coins other than    |
| 3. Better lighting     | 3d., 6d., 1/-d.                   |
| 4. Seat                | 13. Change machine                |
| 5. Bigger parcel shelf | 14. Waiting room or waiting seats |
| 6. Heating             | 15. Clock                         |
| 7. Ventilation         | 16. Tear proof directory          |
| 8. Coat hook, etc.     | 17. Ash tray                      |
| 9. Scribbling paper    | 18. Mouthpiece cleanser after use |
| 10. Pencil             | 19. Easily opened door            |
|                        | 20. More comfortable flooring.    |

Above are examples of acceptable answers.

The same type of answer appearing twice only gets one mark e.g. scribbling paper and jotter.

Unacceptable Answers (examples)

- |                               |                                 |
|-------------------------------|---------------------------------|
| 1. Painted a different colour | 6. Different coloured telephone |
| 2. Radio                      | 7. All glass or all solid walls |
| 3. Magazines                  | 8. Flowers                      |
| 4. Full length mirror         | 9. More than one 'phone per box |

5. Refreshment Machines/  
cigarettes etc.

10. Soft lights.

Question 2

Write as many words as you can think of which are similar in meaning to the word TOUGH.

Acceptable Answers (examples taken from Zoget's Thesaurus<sup>679</sup>)

- |                 |                  |
|-----------------|------------------|
| 1. Adhesive     | 19. Robust       |
| 2. Aggressive   | 20. Ruffianly    |
| 3. Arduous      | 21. Severe       |
| 4. Coarse       | 22. Sticky       |
| 5. Cohesive     | 23. Stiff        |
| 6. Dense        | 24. Stringy      |
| 7. Difficult    | 25. Strong       |
| 8. Formidable   | 26. Tenacious    |
| 9. Gristly      | 27. Unfeeling    |
| 10. Hard        | 28. Unmanageable |
| 11. Hoary       | 29. Unyielding   |
| 12. Inflexible  | 30. Viscid       |
| 13. Insensitive | 31. Viscous      |
| 14. Laborious   | 32. Hardy        |
| 15. Leathery    | 33. Rough        |
| 16. Refractory  | 34. Bully        |
| 17. Resistant   | 35. Thug         |
| 18. Rigorous    |                  |

Question 3.

List as many different uses for chewing gum as you can think of.

Acceptable Answers (examples)

- |                                     |   |
|-------------------------------------|---|
| 1. Sticking pictures up             | 16. Jaw exerciser                                       |
| 2. Mending a hole in shoe           | 17. Time passer   |
| 3. Chewing or eating                | 18. Enjoyment   |
| 4. Holding a wire on a battery      | 19. Hard peices in a tin<br>makes a rattle              |
| 5. Insulating a wire                | 20. Aids concentration                                  |
| 6. Holding decorations on a tree    | 21. Wards off hunger pangs                              |
| 7. Blokcing Keyholes                | 22. Provides business for shops                         |
| 8. Cleaning teeth                   | 23. For demonstrating elasticity                        |
| 9. Making models                    | 24. For blowing bubbles                                 |
| 10. Making Marbles                  | 25. Temporary tooth filling                             |
| 11. Throwing at people              | 26. Fill holes in anything<br>(flute, petrol tank etc.) |
| 12. Practical jokes - on seats etc. | 27. To stick on something smooth<br>so as to lift it.   |
| 13. Give as a present               | 28. Hold a cup to a saucer                              |
| 14. Make a ring                     | 29. For making popping noises.                          |
| 15. Sticking paper together         |   |

Unacceptable Answers (examples)

- |  |                         |
|--|-------------------------|
| 1. To hold telephone kiosk door<br>closed. | 4. As fertiliser        |
| 2. Dye and use as a beauty spot            | 5. Stretched, as string |
| 3. Stick to tables, beds etc.              |                         |

Question 4

List as many different types of use for a house brick as you can think of.

Acceptable Answers (examples)

- |   |  |
|---|--|
| 1. Building a house                                 | 18. To stand on for better view                      |
| 2. Making a path                                    | 19. Drop to demonstrate gravity                      |
| 3. As a block for sculptors                         | 20. As a pendulum bob                                |
| 4. As a hammer etc.                                 | 21. Sell in various "buy a brick forms" painted etc. |
| 5. Stepping stones in a stream                      | 22. As a nail file                                   |
| 6. Doll's house furniture                           | 23. For making fire-place smaller                    |
| 7. Throwing through windows or at people, etc.      | 24. As an anchor                                     |
| 8. Surround for camp fire                           | 25. As a footstool                                   |
| 9. Hold down tent wall                              | 26. As a weight for drowning something               |
| 10. As a seat                                       | 27. For holding dustbin lid down                     |
| 11. Broken, use to make paths, fill plant pots etc. | 28. As a door-stop                                   |
| 12. Side of a jumping frame                         | 29. As a joke present                                |
| 13. Skittles  | 30. To fill up a hole                                |
| 14. Wrapped, hot, as water bottle                   | 31. Weigh down car in snow                           |
| 15. As paper weight                                 | 32. Home for insects to live under                   |
| 16. Demonstration model of solid shapes             |  |
| 17. Diving brick in swimming pool                   |  |

Unacceptable Answers (examples)

- |                          |                   |
|--------------------------|-------------------|
| 1. Give to teething baby | 2. As a book-mark |
|--------------------------|-------------------|

Question 5

List as many different ways as you can think of in which an apple differs from a pear.

Acceptable Answers (examples)

1. Shape - apple rounder
2. Taste - apple crisper  
feel to mouth etc.
3. Colours - Apples brighter
4. Pears grow on pear trees,  
Apples on apple trees.
5. Stone cells in pears
6. Apples store better
7. Greater historical/mythical/  
Biblical, etc. significance  
of apple.
8. Greater variety
9. Skins different texture
10. Pears more often canned
11. Can't get cider from pears
12. Toffee apples not toffee pears
13. Apple has more core or Ovary  
central rather than basal as  
in pear.

---

Unacceptable Answers (examples)

1. Description of trees
2. Description of "word" rather than "fruit".

A man is sitting dozing in his favourite armchair. Suddenly he leaps up and runs from the room. Give as many different explanations as possible for his leaving.

Any possible reason should be accepted whether serious, frivolous, crude, etc. Examples such as "He woke up" are not acceptable as they are not reasons for running from the room.

Commonly given examples include -

Cooking burning

House on fire

Forgot to post football pools

Forgot was going to pick up wife

Dog crying to go out

Burglar breaking in

Should be at work

Heard mother-in-law's voice

In the wrong house etc.

Question 7

List as many different uses for an old car tyre as you can think of.

Acceptable Answers (example)

As fuel in furnace

Base for remould

Boat fender

For an old car wheel

Seat of a swing

Hanging gardens

Garden border edges

---

As part of an obstacle course

Life belt.

Question 8

List as many things as you can think of which could be made by using both of the following:-

A broom handle and a nail.

Acceptable Answers include -

A tall spinning top

A coat-hanger

Paper picker-upper

For making air holes in lawn (in a can etc.)

A beam balance

For pulling fruit off trees

Ski stick

Fishing Rod

Weapon (Spear etc.)

Window pole (opener)

Toasting fork

Pendulum

Shepherd's crook

Hand rail

Towel rail etc.

Hat stand

Catherine Wheel stake on Guy Fawkes night

Clothes prop

---

Not acceptable are those articles which do not require both the handle and the nail. e.g. A club, hammer.

Question 9

You decide to go for a picnic and to make the sandwiches when you get there. When you arrive you find you have forgotten to bring a knife for cutting the cheese. All that you have apart from food are -

1. A mouth organ
2. Matches
3. A thermos flask
4. A guitar

How could these items be used to cut the cheese? Give as many methods as possible.

Acceptable Examples

1. Use end plate of mouth organ as a knife
2. Force matches through cheese
3. Flatten cheese with thermos then snap off pieces
4. Use edge of thermos cup as a knife
5. Use wire from guitar as a cheese wire
6. Break thermos and use glass as a knife
7. Use sides of match-box as a knife
8. Use hole in centre of guitar as knife edge

Question 10

You are ship-wrecked on a tropical island with a group of intelligent 13 year old boys and girls. There is no prospect of rescue. You decide to hold school every morning. What will you teach? (Assume your knowledge is sufficient to be able to teach anything you wish.)

The two points in this question are that a) they are intelligent and so their formal academic education will have already gone a long way. b) There is no prospect of rescue so education should, in the first instance, be aimed at survival of the group and the individuals.

Acceptable Answers include

Fishing, hunting, farming, building, net making, weaving, house building, plumbing, nursing, house craft, cooking, hygiene, boat making, etc.

Unacceptable Answers include

English, Mathematics, History, French, German, etc.

Item analysis of the second revision of the C.P.T.P. flexibility test. (Based on 38 scripts being the bottom and top 27.5 per cent of the 1963 to 1966 year group at Bede College, Durham.)

Question one

Low group scores

High group scores

5

8

4

7

6

6

3

5

3

N = 38

11

7

9

4

Mean = 5.9

7

3

9

3

10

2

8

5

7

4

11

6

8

4

6

6

9

7

6

1

8

3

7

1

7

= 77

= 149

No. above mean = 5

No. above mean = 17

$$\frac{H - L}{N} = \frac{12}{19} = +0.632$$

Question two

Low group scores

High group scores

3

3

3

3

3

5

3

3

5

4

4

3

N = 38

3

5

2

4

Mean = 3.71

3

4

4

4

2

5

2

6

3

3

5

1

4

5

3

8

3

6

1

7

3

3

= 59

= 82

. above mean = 5

No. above mean = 11

$$\frac{H - L}{N} = \frac{6}{19} = +0.316$$

Question Three

Low group scores

High group scores

4

9

5

3

7

9

3

9

6

9

N = 38

4

7

4

Mean = 6.42

10

4

7

6

6

2

5

5

8

5

9

5

8

3

7

9

8

5

5

5

9

5

10

3

6

---

= 90

---

= 144

. above mean = 2

No. above mean = 14

$$\frac{H - L}{N} = \frac{12}{19} = +0.632$$

Question Four

Low group scores

High group scores

9

11

8

8

6

9

7

9

5

8

N = 38

4

9

5

7

Mean = 7.815

6

8

4

10

6

10

7

7

8

11

9

11

8

11

3

12

7

10

6

10

6

10

6

6

= 120

= 177

above mean = 5

No. above mean = 16

$$\frac{H - L}{N} = \frac{11}{19} = +0.579$$

Low group scores

High group scores

5		9
4		10
6		9
5		11
4	N = 38	12
6		14
6	Mean = 8.263	11
7		12
8		8
6		9
5		12
6		10
7		9
8		13
3		11
7		8
8		10
7		12
7		

= 115

= 199

No. above mean = 0

No. above mean = 17

$$\frac{H - L}{N} = \frac{17}{19} = +0.895$$

Low group scores

High group scores

7		9
11		10
7		8
6		9
6	N = 38	16
6	Mean = 9.68	12
7		15
10		8
6		13
9		10
4		12
5		17
9		13
8		14
5		9
12		17
111		12
9		7
7		12

= 145

= 223

No. above mean = 4

No. above mean = 13

$$\frac{H - L}{N} = \frac{9}{19} = +0.474$$

Question Seven

The item discrimination index for this question was based on the responses of 48 students in the year group 1964-1967 at Bede College, being two equal groups both 33.8% of the testees.

Low group scores

High group scores

8	5		10	9
11	5		8	10
8	6		8	10
8	4		8	13
7	3	N = 48	7	12
8	6	Mean = 7.7	9	8
8	5		9	9
8	5		9	12
6	6		11	11
5	6		11	10
2	3		11	9
2	5		11	7

---

= 140

---

= 232

No. above mean = 8

No. above mean = 22

$$\frac{H - L}{N} = \frac{14}{24} = +0.58$$

Low group scores

High group scores

5

9

4

7

3

7

5

4

N = 38

2

5

2

5

Mean = 4.79

4

5

3

9

2

4

3

5

1

10

2

7

3

3

5

5

0

7

1

8

5

7

7

4

6

8

---

= 63

---

= 119

No. above mean = 6

No. above mean = 15

$$\frac{H - L}{N} = \frac{9}{19} = +0.474$$

Low group scores

High group scores

4

7

3

6

1

6

4

6

N = 38

1

5

5

4

Mean = 4.21

6

8

3

6

2

4

0

5

2

2

3

4

4

6

4

3

5

3

4

4

3

7

5

7

2

6

= 61

= 99

No. above mean = 4

No. above mean = 12

$$\frac{H - L}{N} = \frac{8}{19} = +0.421$$

Low group scores

High group scores

5		9
8		11
4		10
3		10
7	N = 38	14
8		13
8	Mean = 9.6	11
8		9
10		10
4		15
<hr/>		
7		13
6		15
7		10
11		17
10		16
5		13
6		10
8		8
10		17

---

= 135

---

= 230

No. above mean = 4

No. above mean = 16

$$\frac{H - L}{N} = \frac{12}{19} = +0.632$$

Item discrimination indices

Question 1	=	+0.632
Question 2	=	+0.316
Question 3	=	+0.632
Question 4	=	+0.579
Question 5	=	+0.895
Question 6	=	+0.478
Question 7	=	+0.580
Question 8	=	+0.474
Question 9	=	+0.421
Question 10	=	+0.632

---

Each item in the test was therefore positive and above +0.30.

The individual items were all contributing towards the total test's power to discriminate.

Reliability

The reliability of the test was calculated by the split half technique and the Spearman-Brown formula<sup>335</sup>.

The 19~~63~~-19~~66~~ applicants to Bede College papers were divided into two groups. Scores on questions one, three, five, seven and nine were placed in one group, on questions two, four, six, eight and ten in the other. The partial tetrachoric technique<sup>122</sup> was used to calculate the split half correlation.

Split half correlation coefficient = +0.60.

When this was fed into the Spearman-Brown formula 
$$R = \frac{2r_{12}}{1 + r_{12}}$$

the correlation of reliability of the test was found to be +0.75.

Validity

The predictive validity of the test was the relationship between the student test scores and the criterion of teaching practice marks. At  $r = +0.38$  it was lower than desired but was nevertheless significant beyond the 0.01 level.

The reliability figure of +0.75 could be most easily increased by increasing the length of the test. Doubling its length could be expected to increase the reliability figure from +0.75 to approximately +0.86<sup>125</sup> but such an increase in reliability would only be accomplished by an increase in validity of from +0.38 to about +0.40. Cronbach<sup>125</sup> argues on pages 131 and 132 of the "Essentials of Psychological

Testing" that the extra time would be better used to measure another aspect of behaviour. It therefore seemed better policy to continue to keep the C.P.T.P. test short and to continue to measure I.Q.'s via the equally short Otis Gamma I.Q. test. The flexibility test was consequently used with the main sample of applicants to Bede College without any further alteration to its content or format.

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