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*Physical education for slow learning girls in North
Ease schools with special reference to the effect of
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amongst adolescent educational subnormal (mild)
girls*

Lilian Groves

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Physical Education for slow learning
girls in North East Schools with special
reference to the effect of creative dance
on behaviour and friendship patterns amongst
adolescent educationally subnormal (mild) girls.

Submitted for M.Ed. degree

Durham University

January, 1975.

by Lilian Groves.

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"Sound education is the act of helping human beings of all ages to grow and develop to a fuller stature of mind, body and spirit and to live well in their world. It should be remembered that education is for every type and variety of life."

Professor L.A. Reid.

Acknowledgements

The writer wishes to thank the directors of education and the physical education advisors of Darlington, Durham, Gateshead, Hartlepool, Newcastle and Northumberland for their co-operation. Thanks are also due to all the headteachers, physical educationalists, and girls of the schools involved in the study.

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Abstract

PART 1. The results of a survey in one hundred Secondary and twenty five special schools revealed :

- (a) Considerable support from headteachers and physical educationalists for the view that physical education can give experience of success to those with a history of failure.
- (b) Little concern for the desirability of finding appropriate material and teaching techniques designed especially for slow-learning girls.
- (c) A lack of both proper facilities and appropriate staff in special schools.

PART 2. Experimental work was undertaken with four groups of adolescent educationally subnormal (mild) girls from three different schools, one of these groups acting as control. These groups were given :

- (a) Programmes of 'creative dance' emphasising both partner and group experience.
- (b) Sociometric tests before and after the programme.
- (c) Behaviour assessment tests before and after the programme.

As a result of this work the following points emerged:

- A. (i) The sociometric status of girls in the control group was relatively constant, although those girls of low sociometric status were more strongly rejected in the second test than in the first test.

- (ii) The sociometric status of girls in one of the experimental groups¹ from a school with a well established physical education programme was also relatively constant and a reversal of the predicted 'sociodynamic' trend was statistically insignificant.
 - (iii) After a rather more substantial dance programme two other experimental groups showed greater change in sociometric status and the reversal of the predicted 'sociodynamic' trend was statistically significant.
- B.
- (i) After behaviour assessment tests, the girls in the control group achieved significantly lower scores in the second test.
 - (ii) The girls in the two experimental groups (as in A.iii) achieved significantly better scores in the second test.
 - (iii) In one experimental group (as in A.ii) changes in behaviour, though positive, were insignificant.

Summary

In this study there was some evidence that programmes of creative dance led to better behaviour as judged by teachers and to changes in social interaction, as measured by sociometric tests, which could be interpreted as beneficial.

1. This group met together only for physical education and home economics

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CHAPTER 1INTRODUCTION

At one time (see Ministry of Education pamphlet No. 5 1946) only children with an intelligent quotient of less than 70 were regarded as educationally subnormal. Now special schools frequently include children with higher intelligent quotients many of whom have been referred by 'normal' schools because they were a disruptive force in the classroom. One headmaster claimed that more than half the pupils in his special school had been referred for this reason.

The criterion for selection for 'special education' varies from one authority to another. One special school (described as School A in the second part of this study) took a high proportion of girls with I.Q.'s of over 70, who had created discipline problems in 'normal' schools. A residential school visited in the course of this study (but not used in part two) had only thirty three girls on the roll, many of whom suffered from severe emotional problems. During the previous school year one girl had attempted to commit suicide by jumping from the school roof, while another attacked a teacher, fracturing her skull. Yet this school was designated 'educationally subnormal' and not 'maladjusted'. School B in part two of this study was virtually restricted to children with an I.Q. of under 70, a high proportion of whom had obvious physical disabilities.

All the schools visited for this study were in North East England. A high proportion of the pupils in these schools came from 'educational priority areas'. In this, the north east seemed to be reflecting the national pattern. Wiseman (1964) and Williams and Gruber (1967)

reported the high incidence of children from the lower social classes attending special schools. They also reported a tendency for children in these schools to come from large families. This trend was also reflected in the north east schools. In one class of sixteen girls, eleven came from families with five or more children. In another class of twenty girls in the same school, four came from families of over ten children and another six from families with five or six children. The majority of pupils in this particular school received free school dinners. The American Association of Mental Deficiency reported that many educable mentally retarded (E.M.R.), the equivalent of education^{ally}ally subnormal (mild) in Britain, came from 'culturally deprived areas'. The function of educationally subnormal (mild)³ schools may be seen as compensatory, though, as was pointed out by William and Gruber (1967) it may seem that "the education service is fighting a losing battle against social forces." ¹.

In areas where there is a high concentration of 'deprived' families there is often insufficient provision for 'special' education. The north east, a relatively depressed economic region, appears to spend less per head on special education than some other parts of the country. Table 1 takes figures from Taylor and Ayre (1969) ² and shows how authorities in the North East compare with similar authorities elsewhere. (Since part 1 of this study was carried out before local government re-organisation and figures are not yet available for new authorities, the old authorities are referred to throughout the study). The table further shows the variation of expenditure within the area, thus one may compare the expenditures in Newcastle of £843 per 1,000 with Middlesbrough's £465 per 1,000 and, outside the area, Warwickshire's £755 with Northumberland's £426.

1. William and Gruber (1967) p.127.
2. Taylor and Ayre (1969) p.109.
3. The term (mild) is used to distinguish the schools under discussion from the 'new' E.S.N. schools (severe) i.e. those previously known as junior training centres. Such schools were not involved in this thesis.

TABLE 1

EXPENDITURE ON SPECIAL EDUCATION PER
1,000 OF THE POPULATION IN 1969 ^{1.}

<u>1. County Boroughs (Average £736)</u>		<u>2. Counties (average £544)</u>	
Liverpool	£1353	I.L.E.A.	£1106
Coventry	£1194	Warwickshire	£ 755
Manchester	£1001	Herefordshire	£ 645
Birmingham	£ 926	Derbyshire	£ 577
<u>Newcastle upon</u>	£ 843	<u>Durham</u>	£ 570
<u>Tyne</u>		Northamptonshire	£ 508
Stoke on Trent	£ 811	<u>Northumberland</u>	£ 426
<u>Hartlepool</u>	£ 770	Westmorland	£ 412
<u>Gateshead</u>	£770	<u>North Riding of</u>	£ 408
Oldham	£ 755	<u>Yorkshire</u>	
<u>Darlington</u>	£ 744	Cumberland	£ 334
<u>Sunderland</u>	£ 673		
<u>Tynemouth</u>	£ 633		
<u>South Shields</u>	£ 607		
<u>Middlesbrough</u>	£ 465		

But 11 county boroughs
outside the north east
spent less than Middlesbrough.

But Cornwall £306.

In areas where expenditure is low we may expect a substantial proportion of retarded children in 'normal' schools. In some cases the rationale behind keeping educationally subnormal or slow learning children in 'normal' schools is philosophical rather than economic. Some large comprehensives have well staffed and well equipped remedial departments. Even so a number of commentators imply that the lot of the slow learner in a large secondary school is not a happy one.

1. Taylor and Ayre (1969) p.107.

The Department of Education and Science (1971) reported :-

"The needs of the slowest pupils seem to have received less than their fair share of consideration.Slow learners are frequently bored, experience a loss of status and become increasingly reluctant to take part in the extra-curricular life of the school." 1.

Bynner et al (1972) speaking of the problem of slow learners for whom no special education provision had been made, said:

"....the school's insistence on teaching the slow learner subjects in which he cannot succeed, often damages his self-confidence and self-respect, leads to his rejection by his teachers and by his more fortunate age mates and makes him vulnerable to neurotic or delinquent behaviour and to arrested social development." 2.

It was because such reports suggested that slow learners in 'normal' schools showed many of the problems of their contemporaries in special schools that the survey described in part one of this study included both types of school.

Tansley and Gulliford (1960) point out that educationally retarded children have the same basic needs of all children.

Summarised, they suggest these are :-

1. Security.
2. Giving and receiving affection.
3. Acceptance by other children.
4. Recognition and self-esteem.
5. Independence and responsibility
6. New experiences and activities.

1. Department of Education and Science (1971). P.23.
2. Bynner et al (1972) P.50.

Teachers concerned with these children must search for ways of giving meaningful success through which they can develop self-esteem; through which they can acquire acceptance by other children and so on. It is not only those children who are 'at the bottom of the pile' in large secondary schools who suffer from lack of acceptance by other children, and from lack of self-esteem. The children in the special schools described in part two of this study were all anxious to keep the name of the school they attended from those they met out of school. One girl said to the writer, "I'm not here because I'm daft you know. They wouldn't keep me at the other school because I wouldn't sit still."

This study set out to discover whether some aspects of physical education could give educationally subnormal children meaningful success.

There is evidence that retarded children on the whole lag well behind children of normal intelligence in the development of physical skills. It is generally accepted, however, that they are more like their peers in terms of physical ability than academic ability. Some educationally subnormal children may indeed be superior to the 'norm' in tests of motor ability (See Rarick & Dobbins 1973). As one North East teacher wrote :-

"The lowest streams show a much wider spread of ability than the 'A' streams. These girls range from the highly gifted to the painfully slow".

Many retarded children who experience repeated failure in academic situations may well find success in movement experiences. A girl quoted above was a very gifted 'mover', but she had been excluded from physical education classes at her previous school

because of misbehaviour in the classroom. Children who frequently fail are often emotionally disturbed and are either very aggressive like this girl or very withdrawn. They often find difficulty in making satisfactory human relationships (see Cromwell, Johnson, Bruce, Bynner etc.).

Movement can be designed to require increased degrees of interpersonal co-operation. (The work of Veronica Sherbourne is worth noting here.) Physical tasks are relatively concrete and retarded children function best in concrete situations.

Moran and Kalakian (1974) suggested that :

"Being successful at something valued by oneself and others, creates a potent force in the enhancement of self-worth feelings. If success is experienced in one school situation, the individual may carry over heightened levels of motivation to other learning areas." 1.

If physical education can be used in this way, then it is a very valuable aspect of the curriculum.

Oliver, Rarick and others (see Chapter 2) have found evidence of success in physical education improving other aspects of school work and improving social relationships among educationally subnormal boys. There is little evidence at present of similar 'carry over' amongst educationally subnormal girls. It may be that the type of material used in the few studies involving adolescent girls was inappropriate to their needs.

The survey undertaken in the Michaelmas term of 1972 (described in Chapter 3) attempted to identify suitable programmes for retarded girls of secondary age. The survey was carried out by means of

1. Moran & Kalakian (1974). P.3.

questionnaires followed up by personal visits to a number of the schools involved. It was designed to discover :-

1. What programmes of physical activities were offered to educationally subnormal/slow learning girls in north east schools and which were judged most successful by teachers and pupils.
2. What gains were expected by heads and physical education teachers to result from a well-presented physical education programme for these girls.
3. The particular problems facing special schools in presenting a P.E. programme and whether these problems were different in North East special schools from those in other areas (as shown in a national survey described in Chapter 3).

It was also felt desirable to attempt to establish whether a programme of some aspect of physical education would have a similar effect on non-physical aspects of development amongst educationally subnormal adolescent girls as Oliver found to obtain for adolescent boys.

A pilot project was carried out by the writer in 1970-71. Dance was offered to one group of educationally subnormal girls and a problem-solving type of gymnastics to another. Both groups made significant improvement in 'unforthcomingness' (or withdrawal tendencies) and in 'social receptiveness' (as measured by a sociometric test). The dance group also made significant improvement in 'restlessness' (i.e. their ability to remain absorbed in a variety of tasks greatly increased). While no overall reduction was shown in the amount of aggression displayed in non-physical

situations, individuals who 'shone' in physical performance made significant gains in overall behaviour patterns including aggression. The same girls also made significant gains in peer rating.

A more substantial follow-up study was proposed. This study, described in detail in part two of this thesis, was designed to examine the hypothesis that lessons in creative dance over and above the normal P.E. programme can result in positive changes in classroom behaviour and also improve relationships in the class.

Considerable problems arose in attempting to make provision^{1.} for the Hawthorne effect and in the provision of any control group.

Special schools in the area were very small. There were also fewer girls than boys in such schools; the majority of schools in the North East had fewer than twenty five girls over the age of twelve years. If any examination of social interaction in the classroom was to be possible, it was clearly desirable to work with a normal class unit. This meant it was only possible to have an experimental and control group from the one school open to the writer which provided solely for secondary age girls. It was difficult to draw a control group from another school as schools differed so radically. However it was felt that drawing experimental groups from several schools with different problems and programmes could produce some measure of control. i.e. it could show whether any changes in behaviour occurring after extra dance lessons took place, regardless of school ethos, organisation and programme, and regardless of the personality of the class teacher. What it would not show was whether any changes took place because of the personality or skill of the visiting teacher rather than the material used.

1. 'Hawthorne effect' is the term commonly used to describe the phenomenon of improved test scores brought about by the subjects' realisation that they are involved in an experimental situation.

An obvious solution would be to have the class taught by their own class teacher. None of the teachers involved was a trained physical education or dance teacher. However, in one case, the class teacher continued the work begun by the visiting teacher and it was possible to re-test after a further's term's lessons. Any improvement between the first and second re-tests would be unlikely to be due to the Hawthorne effect.

Three schools were used in the project and in one school (the all girls' school mentioned above) a second class acted as control group.

All four groups were given sociometric tests and their class teachers completed behaviour assessment forms for each girl.

These were repeated at the end of the experiment. In the case of one class where the class teacher continued to teach dance, the girls were re-tested after a further term. The two groups drawn from the same school (described as School C) were also given pre- and post-experimental assessments on their success in fulfilling basic movement tasks. Photography and observation checks were also used. The procedure and the results of the experiment are given in detail in part two of this thesis.

CHAPTER 2

REVIEW OF THE LITERATURE

The debate on the relationship of body and mind has been of interest to educationalists throughout the centuries. The latin tag "Orandum ut sit mens sana in corpore sano" has been the watchword of others besides physical educationalists. Socrates stated:

"It is a matter of common knowledge that grave mistakes can often be traced to bad health".

(quoted in Van Dalen 1953) ^{1.}

Doctors this century have become much more aware of the effect on the body of a troubled mind and psychosomatic medicine is well established.

The current child-centred approach to education at primary level acknowledges the manner in which mind, body, and personality are interwoven. However the 'initiation model' of education presented by R.S. Peters and his followers places much less importance on the psychosomatic unity of man. The self-awareness which comes from the mastery of physical skills is in danger of being discounted. Thus the place of physical education in the school curriculum may be under considerable pressure.

Yet Piaget, Kephart, Delgado, Fostig and others emphasised the primacy of motor development. Kephart (1960) said

"Motor patterns are the foundation for more complex learning, because motor patterns provide the basis for meaningful orientation." ^{2.}

1. Van Dalen (1953) p. 61 - quote from Xenophen Memcrabilia.
2. Kephart (1960) p. 32

He suggested that all intelligence developed primarily from motor functions and that, if intelligence had not developed fully, it was necessary to return to training basic motor functions. The controversial Doman-Deleato programme now in wide use with brain damaged children is based upon this thesis.

Forbes (1972), applying the proposition to children in educationally subnormal schools and remedial classes, suggested:

"Instead of noting that some children have difficulty in catching a ball or jumping or skipping, but not doing anything about it because of the pressure to provide adequate reading and spelling attainment, we may do well to develop the basic neuro-muscular skills first." 2.

In recent years there has been growing interest in the part which physical education may play in the development of educationally subnormal and handicapped children. 1974 saw the first Department of Education and Science Course entirely devoted to physical education for handicapped children; several physical education specialist colleges have recently offered their students an option dealing with this aspect of their subject; one physical education college and the Art of Movement Studio now offer one term courses to qualified teachers; the University of London has accepted an option on physical education for handicapped children in the examination for their Bachelor of Education degree from 1975 onwards; the Physical Education Association for Great Britain has set up a long term study group to look at physical education for the handicapped and the Spastic Society runs courses on the subject.

1. See Doman (1966) & Deleato (1963) for thinking behind programme of re-education of basic motor skills.
1. Forbes (1972) p.34

All these courses and working parties have a special section on work with retarded and mentally handicapped children. As yet there are no full length courses devoted to this aspect of physical education. This is partially because any physical education teacher needs first to master the subject - to develop skills and to understand normal methods of skill learning - before this may be applied to teaching in special schools. So colleges leave the choice of option as late as possible in a course. If teachers are already working in special schools they are likely to be general practitioners and so a term is probably as long as they would take for such a specialist course. Another possible reason why longer courses have not yet been offered is that research in this area is still relatively limited, but here, too, there has been a considerable growth in recent years.

Research into the relationship between motor development and school progress

The number of studies into the relationship between intellectual and motor development, particularly dealing with children in special schools and institutions is growing.

Ismail (1967) described a number of studies dealing with the normal population most of which found that the relationship was tenuous. For example, Klausmeier, Lehmann and Beeman showed that there was a correlation between low level physical development and low achievement in reading and arithmetic in boys but not in girls, and Burley and Anderson (1955) showed some correlation between measurements of power (through tests of jump and reach) and intelligence scores and arithmetical performance. Ismail suggested that the low correlation found in most other studies was due to an imprecision in defining the motor domain. Ismail and Gruber (1965 and 1967) carried out an extensive study of fifth and sixth graders using

forty two different items to measure motor and intellectual abilities. They found that, while physical growth was not significantly related to intelligence, co-ordination and rhythm were significantly and positively related to academic achievement. They found that balance and other kinesthetic skills were more significantly related to academic achievement in girls than in boys. With both sexes they found that while strength, speed, and accuracy of aim were virtually unrelated to intelligence they did bear some relationship to academic achievement.

The relationship between academic achievement and motor performance has been shown in a number of other reports and studies. Several pointed to the physical ineptness of intellectually less able children in 'normal' schools. The Cheshire Education Committee report (1973) stated that:

"By the time they reach the secondary school, children of low intelligence are generally of poorer physical development and are less physically able than the more intelligent." 1.

The report went on to say;

"Some dull children have excellent co-ordination but the majority suffer from lack of contrast in range and quality of movement, poor manipulation and tactile ability, clumsiness in their normal movements and a proneness to accidents because of this clumsiness." 1.

Allen (1971) working with a small group of junior-aged boys found some evidence of a possible correlation between motor impairment and the ability to read and write commensurate with a child's age and recorded I.Q. He gave the Stott test of motor impairment to a group of boys referred to a remedial centre for protracted failure in reading and writing. He found 54.5% suffered from general motor impairment (as defined by

1. Cheshire L.E.A. (1973) p.207.

Stott 1966). He also found 50% of the same boys suffered from directional confusion and mixed lateral dominance (as shown in the Harris test of lateral dominance). Gulliford (1969) also found a connection between difficulty over space and body awareness and reversal problems in language. Tansley (1967) and Lunt (1973) also found a connection between physical problems of space and rhythm and reading problems.

A number of studies in this country and in America show that those of low academic standing are not involved in school athletics. The best known in this country is that of McIntosh and colleagues (1966) in London. Their study indicated a close connection between mental ability (as shown in school 'streaming') and physical ability (as shown by membership of school or house teams). Children in the higher streams of secondary schools had a disproportionate number of places in school teams. For example, an A stream girl was shown to have a 1:4 chance of playing on her school tennis team, while an 'E' stream child's chance of doing so was 'nil'. The study by the National Foundation for Educational Research into the work of twelve comprehensive schools supported McIntosh's findings. This study showed that boys and girls of greater intellectual ability were $2\frac{1}{2}$ times more likely to represent their school at games than were those with low academic ability. Even where children were taught in mixed ability groups the ratio still stood at 2:1.

Membership of school teams is not, however, entirely based on physical ability. Competitive play demands the ability to 'read' a fast changing situation, to anticipate the opponent's next move, to adapt one's own desires to those of one's team mates

1. See Ross et al (1972)

and to keep one's head in the face of challenge. A further complication is that many children who do not achieve academic success reject the whole culture of the school and thus are unlikely to wish to represent the school. As has already been shown, many such children come from the lower social classes and are thus unlikely to be supporters of the school system.

Nevertheless, other studies have shown a connection between low academic achievement and physical ineptness particularly amongst children in special schools. Malpass (1960), Francis and Rarick (1960), Stein (1963), Brace (1966), Broadhead (1970) and Rarick and Dobbins (1973) have all shown this retardation and indicate that the greater the mental retardation the poorer the level of physical skill. Francis and Rarick (1960) showed that the mean for educationally mentally retarded children was two to four years behind the published 'norms' in the areas of strength, balance and agility.

A more recent study by Rarick and Dobbins (1973) showed that:

"E.M.R. children included in this investigation were considerably less able in motor tasks requiring elements of muscular strength and power, gross and fine motor control, flexibility and balance than intellectually normal children of the same age and sex."

They added that:

"in all tests some children scored well above 1. the mean for normal children."

This bears out the statement made by a North East physical education teacher, quoted in Chapter One. Rarick and Dobbins' investigation

1. Rarick & Dobbins (1973) p.162.

was conducted with children from middle to upper middle class socio-economic section of society. These children were therefore what is sometimes termed 'true' subnormal children i.e. not those who have been intellectually misclassified because of poor social background. The results of this study suggest that subnormal intelligence does not solely account for poor physical ability, nor, naturally, does poor physical ability necessarily imply poor intellectual development.

Gordon (1973) was concerned that children of average and above average intellect could be wrongly classified as retarded because they were physically very inept. He reported two studies carried out with primary children in which this appeared to be happening. However most studies seem to indicate that those rightly classified as retarded frequently had problems with motor skills.

Relationship between physical and social development

Oliver and Keog (1967) reporting on clinical observations of educationally subnormal boys found that the majority of them had considerable difficulties with co-ordination and rhythmic movement. They felt however, that the relationship between motor performance and intellectual ability was difficult to establish. They did establish a significant relationship between physical abilities and social development.

Perhaps the reason for this relationship may lie in the fact that retarded children do not readily pick up 'rules' of play;

they may thus have been rejected by their peers at an early stage and have consequently missed the opportunity to become more skilful through practice. The practice of playing together with others, which affords much useful social training, would also have been missing.

There is evidence that even children of average or above average intelligence are rejected at play by their peers if they are physically clumsy. (See Curtis 1971 & Symes 1972). Symes's study also showed that children rejected in games situations are also rejected in non-games situations. Kretchmer (1960) shows that children who are rejected by their peers in physical situations tend to become defensive and hostile and to develop anxieties and phobias.

A study carried out in Glasgow and reported by Stott (1966) indicated a positive relationship between physical clumsiness and emotional disturbance. Delinquent youths were shown to have poorer motor co-ordination than comparable non-delinquents. The Department of Education and Science pamphlet on the education of maladjusted children developed the body-mind theme:

"Many maladjusted children show most obviously the influence of an unhappy mind on the body. When they are admitted, too many of them are weedy, with hang dog appearance, slouching or tense as if they expected to be attacked." 1.

For those who fail in academic skills failure in physical skills may be even more distressing than for those who are academically able.

1. Department of Education and Science (1965) p.23

Curtis (1971) suggested that :

"If controlled movement means mastery and grace, then uncontrolled movement means failure, awkwardness and disgrace." 1.

Can more retarded children be helped towards greater mastery of movement ?

If one accepts that there is some relationship between academic achievement, emotional stability, social acceptability and physical ability it is not unreasonable to suggest that improved physical performance could well have a beneficial effect upon social relationships and emotional stability.

Further, one might reasonably expect that, especially with children whose school failure has been largely due to adverse environmental conditions, the experience of achieving success in one aspect of school life might improve motivation in other aspects of school life.

There is a growing body of research in which these suppositions have been put to the test.

The effect of additional physical education programmes upon intellectual and social development

"I believe in the importance of physical education for all children, but I feel that in the past the importance for children with psychological problems has not been given enough attention and may be underestimated."

(Personal communication from senior educational psychologist for Kent L.E.A., October 1973).

1. Curtis (1971) p.35

Oliver (1958), in the earliest of British studies with retarded children using physical education, found that there was an improvement of I.Q. scores following an intensive physical education programme. In the 'Packwood' experiment he took twenty boys aged thirteen to fifteen who were in a residential special school, and gave them two hours forty minutes physical education per day over a period of ten weeks. They were compared with a control group following the normal school programme of three physical education sessions a week including one of games. Both groups were given a series of tests before and after the experimental period. Very highly significant gains were shown by the experimental group in tests of physical achievement. More interesting were the significant gains made by the experimental group in tests of intellectual and emotional development.

Several writers (e.g. Moran and Kalakian 1974) criticised Oliver's findings on the grounds that no attempt was made to control a 'Hawthorne' effect. Oliver acknowledges the probable effect of a feeling of importance amongst the boys in the experimental group, but attributes the gains to a combination of (a) the effect of achievement and success, (b) improved adjustment, (c) improved physical condition as well as to the Hawthorne effect.

Solomon and Prangle (1967) attempted to repeat Oliver's study and were unable to confirm the improvement in mental characteristics. Oliver suggests that testing conditions were unsuitable in this experiment. Corder (1966) and Lowe (1966) attempted to reproduce the Packwood experiment, while making allowance for a Hawthorne effect. Their results were similar to those of Oliver.

A more recent and wider investigation was carried out by Rarick and Broadhead (1968 & 1970). This study examined the role of physical education in the modification of the motor, intellectual, social and emotional behaviour of 275 educationally mentally retarded and 206 minimal brain damaged children of elementary school age. One group of children followed an art programme in an attempt to cater for the Hawthorne effect. Two groups followed special activity programmes, and one group, acting as 'control', followed its normal programme. The children were all taken for their special activity by their own class teacher for thirty minutes each school day for twenty weeks.

The following findings were reported :-

1. Children who participated in one of the specially planned experimental programmes were subject to significantly greater positive changes in their motor, intellectual and emotional development than were the children in the control group.
2. Children involved in the physical education programmes showed greater improvement in motor performance while younger children in the art programme showed greater improvement in emotional behaviour.
3. An individually orientated programme of physical education was more successful than a group orientated programme in producing changes in motor, intellectual and emotional behaviour.
4. Older boys showed more positive changes in behaviour than younger boys and than girls in any age group.

Few studies show improvement amongst girls following an experimental physical education programme.

One of the few investigations directed entirely at girls was that of Adams (1971). He examined the effect of a special 'adapted' programme of physical education upon the social adjustment and motor proficiency of educationally mentally retarded girls (I.Q. 50 to 75) and compared them with girls following the 'regular' school programme in mixed ability groups. He found that retarded children in both 'regular' and 'adapted' programmes made significantly greater motor performance gain than did the intellectually 'normal' (I.Q. 90 - 110) control subjects. Where retarded girls were given individual and partner activities within small groups, there was statistically significant improvement in social adjustment (as seen in Cowell's Social Adjustment Index and his Personal Distance Scale), over those retarded children following the regular programme. Yet, since he mentions that the 'regular' groups had fifty to eighty girls in them and the 'adapted' or 'special' classes had ten or eleven girls in them, one might consider that the study tells us more about the advantages to be gained by taking retarded girls in small groups than about the type of programme suitable for them.

Corder (1966) also carried out a study with educationally subnormal girls using a 'fitness' programme similar to that used in a number of boys' studies. Thirty girls were randomly assigned to an experimental and a control group. The experimental group received one hour's fitness training per school day for six weeks. The difference between the pre- and post-test results showed no significant changes in I.Q. gains between the groups, but, of course, the period was very short.

Amongst adolescent girls one expects to find - regardless of intellectual ability - less interest in physical activities than amongst a group of similar boys. Jephcott (1967), Schools Council (1967) and Ward (1971) have all produced evidence of the importance placed upon physical education by adolescent boys, but have also indicated that for girls it was of much less interest. Ward (1971) suggests that "Mating and considerations of attractiveness are important to the girls' adolescent role and most physical activity does not appear to be recognised as enhancing these elements of the girls' self-interest." ¹.

The use of dance

The two aspects of physical education which have a very 'feminine' aura are dance and Olympic gymnastics. The latter has become extremely popular with girls of all ages and intellectual abilities since Olga Korbet made her mark in the Munich Olympics. No study has yet been made using this type of activity with retarded girls. One of the British women gymnastic coaches has suggested that only girls with considerable powers of concentration as well as physical ability and courage can hope to succeed in this activity. (Personal communication).

The use of dance and 'movement' with educationally subnormal children is a comparatively new venture, but in the nineteen forties and fifties it was used fairly widely as a means of therapy in hospitals for the mentally ill. Most accounts of dance at this time and since then have been descriptive rather than objective. Indeed, there has been some reluctance amongst dance teachers and lecturers to subject their work to objective tests.

1. Ward (1971) p.xiii.

Bruce's work in dance with handicapped children is perhaps the best known (1965, 1969, 1973). She visited many schools for the handicapped in this country and America. She found that in schools where dance flourished so, too, did lively written work and expressive paintings. She said that in her experience

"dance has been the opening pathway to so many other activities - to music, to painting, to the awareness of shape and form, to relationships and to words." 1.

She further suggested that since dance offered no possibility of failure and lots of possibility of success it had a very positive effect upon the total development of retarded girls.

Others have made similar claims for dance. Alvin (1965) wrote that moving to music can help handicapped children become much more conscious of the relationship of their body to both their surroundings, and to other people, and help their social adjustment.

Two more objective reports come from Australia and U.S.A. respectively. Neale (1964) reported on a research project carried out with children aged eight to nine years having I.Q.s ranging from 36 to 62. The group had thirty 'Art of Movement' (dance) lessons spread over five months with a specialist teacher. A control group had normal physical activity 'play' periods. Neale reported that the experimental group:

"developed a cohesion and camaraderie which one usually considers indicative of higher levels of intellectual functioning." 2.

1. Bruce (1973). Lecture to P.E.A.
2. Neale (1964) p.40.

Gittins (1971) carried out a research project designed to :

"determine the effect, if any, of a period of Modern Educational Dance on measurable physical, perceptual motor, psycholinguistic and intellectual skills of trainable mentally retarded children attending a public special education school." 1.

Sixty children were randomly grouped as follows :-

- (a) experimental group which received three Modern Educational Dance^x lessons per week for twelve weeks.
- (b) a 'Hawthorne effect' control group which had quiet classroom activities e.g. films, records etc.
- (c) control group.

In the I.T.P.A. test of psycholinguistic ability, the Goodenough Draw-a-Man test (used as a test of body image) and the Los Angeles (Cratty) test of perceptual motor skills slightly discriminated in favour of the experimental group.

Neither I.Q. tests nor tests of personality development showed any significant change. Gittins considers that the programme might have been more successful if progress from one movement theme to another had been less rapid. He also felt that the children had difficulty in adjusting to an informal approach. That is, he suggested that the teaching rather than the material might have been at fault.

1. Gittins (1971) P. ix.

x 'M.E.D.' is sometimes used interchangeably with 'Creative Dance'.

Both these studies were with children who, on the whole, had greater limitations of intellect than educationally subnormal (mild) children in this country.

One study which indicated the possible value of dance in the education of children whose ability is limited by a 'difficult' environment is that of Friedman-Witthower et al (1970). Their project concerned Israeli children from "culturally deprived" homes. Two groups of nine and ten year olds were carefully matched to form an experimental group which had four lessons of 'movement' and dance a week for two years, and a control group. The experimental group were reported as showing a marked rise in I.Q., in body and space awareness and in their relationship with others.

Witthower reported:

"Increased and well-guided movement education helps to overcome developmental blocks, influence positively certain character-qualities, leads, apart from better motor performance, to better scholastic achievement and is fundamentally important in the rehabilitation of culturally deprived children." 1.

Again there was a great emphasis on the effect of 'success' upon the self esteem of the children. The increase in self confidence which arose from experience of success appeared to increase children's readiness to tackle both physical and mental tasks.

Groves (1966 & 1967) reported on the response of educationally subnormal adolescent girls to two series of dance lessons. She too reported evidence of increased self confidence and greater willingness to attempt new tasks. The increase in the length of absorption time was also noticeable. The girls' class teachers were surprised to find that they could listen to substantial pieces of music and to longer stories without becoming distracted.

1. Witthower (1970) p.11.

Groves (1971) undertook a pilot study with girls from the same special school. This study (referred to at some length in part two of this thesis) indicated that dance could have an effect upon the social behaviour of E.S.N. girls. It pointed towards agreement with Frostig's statement on 'creative movement'. She said (1970) :

"Educators have at their disposal one of the most powerful means of enhancing their pupils' awareness of themselves, and of the world and of simultaneously enhancing their emotional and social development. The experiences gained through the creative activity heighten the individual's awareness of his own feelings, provide inner satisfaction and a sense of accomplishment and give new meaning to life." 1.

Summary

1. Most of the evidence points to a significant relationship between physical ability, academic progress and social relationships.
2. There is substantial evidence that when educationally subnormal boys receive a well-chosen physical education programme the experience of success can significantly heighten motivation towards other aspects of school life, improve academic achievement and aid social adjustment.
3. There is very little evidence of similar successful programmes for girls but sufficient to suggest that girls require a separate and different programme from that found valuable with boys.

1. Frostig (1970) p.57.

4. It appears that dance might be an important part of a programme for educationally subnormal girls.

Oliver has drawn the attention of the physical education profession to the need for more research into suitable programmes for retarded girls in both normal and special schools. Speaking at the Physical Education Association annual conference in January 1973 he said:

"One area that needs more rigorous research is that of the needs and interests and abilities of girls, particularly mentally handicapped adolescent girls. There is a great need for establishing what types of programmes are most suitable, together with the methods of presenting them if we are to help girls get the best out of physical activity."

The following study is an attempt to discover suitable programmes.

CHAPTER 3

An investigation into the provision for and attitudes towards physical education for slow learning girls of secondary age in schools in north east England.

Abstract

A survey of special (E.S.N.) and secondary schools in north east England showed the high regard in which physical education was held. Special schools suffered from poor facilities and lack of specialist staff but the picture in the north east was very little different from that in the rest of the country. Heads of special schools wished for more help from organisers and other physical educationalists. In secondary schools most retarded girls received the same physical education programme and were taught by the same methods as those used with brighter pupils. There was some opposition to the idea of treating less able girls differently from others. A number of girls from remedial classes were questioned on their attitudes to physical education. They showed great enthusiasm for the subject but physical activity played little part in their out of school life.

CHAPTER 3AN INVESTIGATION INTO PROVISION FOR AND ATTITUDES
TOWARDS PHYSICAL EDUCATION FOR SLOW LEARNING GIRLS
OF SECONDARY SCHOOL AGE IN SCHOOLS IN NORTH EAST
ENGLAND(a) Introduction

As shown in the previous two chapters there is little evidence available of the part which physical education plays in the education of slow learning and educationally subnormal girls.

A national survey of provisions for physical education in special schools was carried out jointly by the Physical Education Association of Great Britain and the British Association of Organisers and Lecturers of Physical Education, in 1969. The raw material from this survey was made available for this thesis, but it was found that only seven special schools in the north east had responded. In addition to seeking a more representative picture of provision in the north east, this new enquiry attempted to evaluate the attitude of staff towards the subject and also to see if any pattern of 'popular' activities emerged.

The schools included in the survey were those catering for educationally subnormal (mild) girls of secondary age. The 'new' educationally subnormal (severe) schools were not included. For reasons given in Chapter One, it was decided also to circulate comprehensive and secondary modern schools to ask about provisions for, and attitudes towards, the subject for slow learning girls.

One Local Education Authority refused permission for the carrying out of the survey but permission was granted to approach all secondary and special schools in Durham, Gateshead, Newcastle, South Shields and Tynemouth.

Schools in one area of Northumberland were approached and a sample of schools from Hartlepool included. In order to increase the number of special schools in the study, educationally subnormal schools in Teesside and Darlington were included.

(b) PHYSICAL EDUCATION IN SPECIAL (E.S.N. MILD) SCHOOLS
CATERING FOR ADOLESCENT GIRLS

(The national survey (1969) dealt with all types of handicap. Figures taken from that survey were those which relate only to E.S.N. (Mild) Schools).

Twenty five of the twenty seven special schools contacted agreed to take part in this survey. The two schools which did not respond to the initial query were very small schools with a handful of secondary age girls. The questionnaire which was circulated to heads is included in appendix one. The writer visited ten of the schools included in the survey, saw something of the physical education programme and discussed problems with head teachers and some of the staff. Three of these schools were later used in the investigation described in part two of this thesis. The questionnaire asked about the size of the school, staffing, facilities, the programme provided and those aspects found most popular by the majority of girls. It also attempted to discover something of the head teachers' beliefs about the value of physical activity for this category of pupil.

1. Size

The national survey, which covered over three hundred schools for the educationally subnormal, found that 52.9% had fewer than one hundred pupils on the roll. Only two of the north east schools had over one hundred girls on the roll. These two schools catered exclusively for secondary age girls. Of the remainder, one had only seven girls of secondary age and nine had between twenty and thirty five girls in this age group.

Such numbers make the design of a programme of physical education difficult and, of course, militate against the appointment of specialist staff and the provision of expensive specialist equipment.

2. Facilities

All schools in this survey had hard playing areas and access to playing fields. This compares favourably with the situation nationally, where only 50% of such schools have access to outdoor facilities. However, the weather in the North East means that adequate indoor facilities are more important than outdoor provision. None of the schools had a purpose-built gymnasium, sports hall or swimming pool. Six schools had good halls with fixed apparatus. The portable and fixed apparatus provided was of the same type to be found in 'normal' schools. Usually, because the majority of schools were all age schools, the apparatus provided was that considered appropriate to primary schools. Often girls had used the same gymnastic apparatus set up in the same manner since they were seven years of age or even younger. They regarded this apparatus as 'babyish' and, so, many rejected 'gymnastics' when they reached adolescence. The teachers, as we shall see, did not on the whole have the expertise to provide real challenge in the gymnastics area.

Some schools had no indoor facilities at all. One head wrote saying that he would be grateful to have a room large enough for dance. Another described the facilities in his school as :

"a hall, which has fixed apparatus, but which also contains a stage, dining tables, and 150 chairs which have to be moved before any P.E. can take place."

Not surprisingly this head said:

"During twenty years with educationally subnormal children I have found that indoor physical education is not well done, is not popular, and, because of the vast range of physical abilities (and disabilities), a sufficiently homogeneous group is difficult to achieve".

The national survey commented on the disturbingly large size of physical education classes in special schools (often larger than class size for less active lessons). It is a pity that schools, which accept the need for remedial reading on a one to one basis and a maximum of ten girls for domestic science, do not accept that very small group or even individual teaching may be necessary to develop physical skills.

All schools had access to public or local education authority swimming pools with transport provided by the authority. Four schools took their eldest pupils to commercially run ice rinks, one took them to a local riding school and one to a multi-purpose sports centre.

Table 2 summarises these figures for schools in both the local and national surveys.

TABLE 2. FACILITIES FOR PHYSICAL EDUCATION IN SCHOOLS FOR EDUCATIONALLY SUBNORMAL CHILDREN

	<u>North East Schools</u>	<u>Schools in national survey</u>
Total number	25	345
Hard playing areas	100%	50%
Indoor facilities of some kind	68%	87.2%
Multi-purpose hall with fixed apparatus	24%	17.1%
Multi-purpose hall with only portable apparatus	44%	30.7%
Purpose-built gymnasium	Nil	9.8%
Own swimming pool	Nil	Nil
Access to swimming pool	100%	33.7%

Schools in the north east sample appeared to compare favourably with those in the national sample. Where appropriate the figures were subject to the test of significance of the difference between two uncorrelated percentages.

The null hypothesis that there was no significant difference in the provision of certain facilities was examined.

The formula

$$\text{S.E. difference of \%} = \sqrt{pq \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

$$\text{where } p = \frac{n_1 p_1 + n_2 p_2}{n_1 + n_2}$$

$$\text{and } q = (1 - p) \quad \text{was applied.}$$

Hard Playing Areas

$$p = \frac{25 \times 100 + 345 \times 50}{25 + 345} = 53.4$$

$$q = 46.6$$

$$\text{Then } \delta p_1 - p_2 = 10.3$$

The difference between the two percents p_1 and $p_2 = 50$

So the critical ratio (CR) = 4.8.

Reference to the table for use in determining the significance of statistics shows the above CR exceeds 2.59 (.01 level) and therefore this difference is highly significant.

Indoor facilities of some kind

$$p = \frac{25 \times 68 + 345 \times 87.2}{25 + 345} = 85.9$$

$$q = 14.1$$

$$\text{So } \delta p_2 - p_1 = 7.1$$

The difference between the two percents p_1 and $p_2 = 19.2$

So the critical ratio (CR) = 2.69.

Reference to the appropriate table¹ shows that CR exceeds 2.59 (at .01 level) and therefore the difference in percentage is significant

1. Garrett (1960) p. 449.

Multi-purpose hall with fixed apparatus

$$p = \frac{25 \times 24 + 345 \times 17.1}{370} = 18.37\%$$

$$q = 81.63$$

$$\text{So } \sigma p_1 - p_2 = 8$$

$$\text{Difference between percentage } p_1 \text{ and } p_2 = 6.9$$

$$\text{So CR} = 86$$

This does not reach the critical value at .05 level and the difference is not therefore significant.

Multi-purpose hall with portable apparatus

$$p = \frac{25 \times 44 + 345 \times 30.7}{25 + 345} = 31.5$$

$$q = 68.5$$

$$\text{Then } \sigma p_1 - p_2 = 9.6$$

$$\text{Difference between the two percents } p_1 \text{ and } p_2 = 57.3$$

$$\text{So CR} = 5.8$$

This exceeds the critical value of 2.59 at .01 level therefore the difference is significant.

Purpose built gymnasium

$$p = \frac{25 \times 0 + 345 \times 9.8}{370} = 9.1$$

$$q = 90.9$$

$$\text{So } \sigma p_1 - p_2 = 5.9$$

$$\text{The difference between the percents} = 9.8$$

$$\text{So CR} = 1.66$$

Reference to the appropriate table¹ shows that this exceeds 1.65 (at 0.10 level) but does not reach the .05 level therefore the difference is insignificant.

1. Garrett (1960) p. 449.

If one adds together the schools in the national sample with purpose-built gymnasias to those with other fixed apparatus, one finds that provision of space with fixed apparatus was almost identical, in the two groups. The national sample was better provided with simple indoor facilities while the north eastern sample had better outdoor facilities. Only in terms of portable apparatus was the north eastern sample significantly better equipped. In the north east much more emphasis was placed on swimming than in the national sample and provision here was significantly better.

3. Staffing

Only one school had a woman with some specialist knowledge of physical education (i.e. she had studied the subject as a 'Main' course in college). Two other schools had men 'specialists' neither of whom played much part in girls' physical education. None of the schools had the services of peripatetic physical education teachers and none of the permanent women staff had attended courses in physical education other than one day courses. Twelve teachers from eight schools had attended a one day course on physical education for slow learners run by the North East P.E.A. in 1973. (The majority attending this course were lecturers and organisers). Some of these same teachers had attended other more general courses in physical education.

Thirteen of the twenty five head teachers wrote saying they would like to have either a specialist teacher for girls' work or a general teacher with enthusiasm for and some training in physical education. Two further head teachers hoped that

their schools would increase in size in order that they might have - to quote one of them - "more talent to call upon amongst the staff." (Since the present trend is to keep as many 'slow learners' as possible in comprehensive schools, it seems unlikely that this wish will be realised). The situation was even more severe in residential schools than in day schools. One residential school visited had a staff of five, none of whom was under fifty years of age. The head teacher, when questioned about keeping a balance of interests amongst her staff, pointed out that the matter was not as simple as that. Her problem was to find any women of any age willing to take up a residential post in her type of school. This school used visits to swimming baths, to a riding school and to a sports hall as 'treats' for good behaviour, but could offer little more structured physical education.

Three Heads wrote that they would like more help from organisers and inspectors, while another four begged the writer to do some teaching in their school so that their teachers could get "more ideas".

The need for specialist help is not, of course, confined to special schools. The number of organisers of physical education has decreased and many have added 'general inspection' to their specialist duties. To give just two examples - four years ago Newcastle Authority employed four organisers, now they have one. Durham L.E.A. had eight organisers, now they have four, all of whom are responsible for other aspects of school work.

While the number of organisers of physical education has shrunk, they have now the added responsibility of advising on suitable physical education programmes for severely subnormal children. Consequently the amount of help they can give to other special schools is severely limited. As has already been stated there is growing opportunity for teachers to undertake courses in the subject. Where girls' work is concerned one has to bear in mind the reluctance of married women teachers to undertake residential courses.

The increase in courses does not, in any case, solve the problem of organising the subject in schools with very small numbers. More liason between 'normal' schools with specialists and neighbouring special schools might be actively encouraged by the L.E.A. One head wrote that he would like at least some of his girls to use their physical skills in the company of 'normal' girls. Links between schools might make this possible. For those who are physically very retarded, local authorities might consider appointing a peripatetic teacher to work on a one to one basis with those in both special and 'normal' schools. Such work need not put further stress on the over worked physiotherapy service, since many such children simply need the full attention of someone who understands the process by which physical skills are acquired, and who can adapt the method of instruction to suit the individual.

4. Amount of time given to Physical Education

The amount of time given to Physical Education varied very widely from school to school. In five schools there was no set timetable for use of facilities and whether P.E. was taken or not depended entirely on the interest of the class teacher. Except in fine, warm weather many of the girls in one of these schools had no physical education, because the head teacher did not "believe in compulsory P.E. for secondary age pupils". His pupils did not have opportunity for participating in physical activities out of school hours.

The national survey showed that 45% of E.S.N. children had no physical education at all.

Table 3 shows the amount of time per week allocated to physical education for secondary age girls in the twenty five north east schools.

TABLE 3

AMOUNT OF TIME PER WEEK ALLOCATED TO PHYSICAL
EDUCATION FOR SECONDARY AGE GIRLS

1 hour +	4 schools
2 hours +	6 schools
3 hours +	4 schools
4 hours +	2 schools
5 hours +	3 schools
No compulsory P.E.	1 school
P.E. time left to classteacher	5 schools

5. The Programme

Table 4 shows that in spite of a shortage of suitably trained staff the special schools included in this survey offered a wide range of physical activities. The list offered few surprises.

Table 4

PHYSICAL ACTIVITIES OFFERED IN 24^{*} SPECIAL
SCHOOLS IN THE NORTH EAST

Gymnastics	14 schools
Modern Educational Dance	9 schools
B.B.C. M. & M.	12 schools
Country Dance	17 schools
Games	24 schools
Swimming	24 schools
Athletics	5 schools
Outdoor pursuits	10 schools
Others (see below)	

* School without compulsory P.E. not included.

The terms used may mean different things to different people. For instance one head wrote "athletics i.e. Sunday school trip-type races." Games always appears to be the easiest form of physical activity for the non-specialist to teach (for instance, the practice of allocating 'academic' subject teachers for 'games' periods is widespread in secondary education.) The term 'games' in this study covered netball, 'team races' and 'party-style' games.

It is interesting to note that, although the women teachers reported great difficulty in taking major games with E.S.N. girls, all but one of the mixed schools fielded full sized football teams with their boys. Most schools included rounders and netball in their games programme in some form. Some schools included tennis but this was seldom more than hitting a ball over a net.

Lack of expertise undoubtedly accounts for the popularity of B.B.C. Music and Movement lessons. This programme, designed for infants and lower junior age children, can require only that the class are in a hall with a radio and that the teacher can keep sufficient order for the radio to be heard! Most of the girls questioned thought the programme 'babyish'; there was a strong negative reaction if any of the records designed for use in 'Music and Movement' lessons were produced by the author in the lessons described later in this study. Some girls disliked the B.B.C. teacher's 'babyish' way of speaking, while others associated the programme with their younger days.

In the nine schools where Modern Educational/Creative dance was taken, both teachers and pupils described it as 'popular'. Twenty five per cent of heads of schools where dance was not offered, said they would like to do so; three heads said that they would prefer to have a teacher trained in dance, rather than one trained in physical education.

Gymnastics appeared to be widely taught, but follow-up enquiries show that in many cases this simply meant 'free play on apparatus'. One head said that gymnastics in his school was

"More of a free-standing directed activity - big body movements - using small apparatus" (i.e. the type of activity advised by the then Ministry of Education in the 1950s). Gymnastics did not seem popular when taken regularly but where teachers gave free activity on apparatus occasionally it was enjoyed. Where free-standing exercises were disguised under the title 'Keep Fit' or even 'slimnastics' and taken occasionally they were greatly enjoyed. Where teachers used music to accompany these exercises they were even more popular. Several girls said keep fit was 'grown up'.

The national survey noted the growth of 'Outdoor Pursuits' with 45% of the national sample enjoying some aspect. Again one has to be careful in the interpretation of the title. In one north east school it was found to include gardening and in another, gentle walks round the neighbourhood. However, 'Outdoor Pursuits' as understood by physical educationalists, are growing in special schools as they grow in 'normal' schools. Usually these activities take place out of school time. They depend not only upon the expertise of the teachers but also on their willingness to give up free time. In all types of schools the fact that the majority of women teachers are married and have family responsibilities means that fewer girls than boys can go to residential centres. Nevertheless there is quite a lot offered to girls in special schools. L.E.A.s are generous over finance for these activities.

One north east school took parties twice a year to the L.E.A. Outdoor Pursuits Centre in the Lake District. Here girls experienced canoeing, camping, fell walking and sailing. Much

of the value of this experience probably lay in living together as a group. One L.E.A. recognised this by providing simpler accommodation for the sole use of E.S.N. schools. Several teachers felt that they got to know their pupils better in such circumstances than in school and, indeed, better than in the more elaborate outdoor pursuits centres. Some schools, believing that outdoor activities themselves had much to offer, were able to include some aspects in the normal school programme. One school (described in part two as school A), situated within one mile of the sea, had its own sailing dinghy and canoes. The latter had been made by the boys in the school under the guidance of the craft 'specialist'. This teacher was also a sailing and canoeing instructor, so was able to offer these activities to both boys and girls. The teacher concerned felt it possible that a few boys would make their own canoes and go on with the sport when they left school. He did not expect any of the girls to do so. The sailing club, he thought, was too expensive and probably too middle class to attract either boys or girls. He believed that the justification for including these activities in the school curriculum for both boys and girls lay in the sense of accomplishment experienced by those who could handle a dinghy or use a canoe in white water. He believed that the children who had been successful in either activity had immeasurably more self confidence than those who had not been given the opportunity.

An inexpensive activity, apparently popular in a number of special schools, was walking. One head wrote:-

"Extensive walking and other outdoor activities are popular with older children - both boys and girls. This includes walks of 20+ miles on mixed terrain. Several children last year accomplished the Lyke Wake Walk (40 miles over rough moorland)."

This seems an even more credit worthy achievement when one thinks how often children who are academically retarded are described as "lacking physical stamina".

Swimming was the only activity which the majority of heads believed had 'carry over' value as a leisure time activity after girls left school. It was also the most popular single activity with all age groups. One head believed that at least twenty five percent of the girls leaving his school would go on swimming. Two heads suggested that the reason for the popularity of swimming was the fact that children who seldom achieved tangible awards were awarded certificates for progress. There is also plenty of 'feed back' in swimming. Once the initial fear of water is overcome, progress is usually quite swift and the learner readily perceives his progress. One school claimed a hundred percent success in teaching pupils to swim. Children in this school, making unsatisfactory progress in swimming by the usual methods went on a special course using a one to one method of instruction. This was the only case of 'remedial' physical education found in this survey. Both the life saving aspect of swimming and its use as a leisure activity are important. Sillitoe (1969) in his government-sponsored survey on leisure activities found swimming the most popular physical activity with adults of all ages and social classes. It seems highly desirable that all children, whether retarded or not, should be taught to swim. A study of those methods found most successful in teaching retarded children to become skilled swimmers is urgently needed. The school quoted above might be a useful starting place for such a study.

6. Out-of-School Activities

Mention has already been made of 'Outdoor Activities' taking place out of school hours, but otherwise, day special schools offered very little. The fact that many children travelled to and from school by special bus limited the possibility of much extra-mural activity.

Some schools took part in inter-school activities during school hours. There were few teams as such, except for boys' football. One head expressed great opposition to 'school teams'. "Inter-school games," he said, "bring out the worst in children at all levels and should be abolished." Several other heads felt that children gained valuable social training from taking part in inter-school activities and even as spectators. These heads encouraged 'friendly' games, usually with other special schools. Although girls at the younger end of the school were often enthusiastic about this kind of activity, when the subject was discussed with older girls they showed little enthusiasm. Many girls seemed to enjoy the annual athletics meetings and swimming galas for special schools held in various parts of the region. Cross country running matches were also popular where they were offered and in this activity some special schools had competed fairly successfully with girls from 'normal' schools.

A great problem of many small schools was the somewhat enclosed atmosphere. Most heads welcomed any activity which would widen their pupils' contacts.

7. The value of Physical Education for Educationally Subnormal Girls.

Most head teachers considered physical education an important aspect of the special school curriculum, even though many were not satisfied with it in practice. The fact that twenty five out of twenty seven heads returned the questionnaire and that all those who did so invited the writer to visit their school perhaps indicated the regard in which the subject was held.

Only one head (already mentioned) spoke against including the subject in the school curriculum. He said, "I doubt the value of compulsory P.E. for adolescents and would prefer to see it done as a voluntary, extra curricular activity. Certainly in E.S.N. schools it would not be missed." No other head agreed with this.

Heads were asked to indicate whether they agreed with eight statements about the value of P.E. for slow learners. (These eight 'statements' were selected from an original list of twenty 'claims' commonly made for P.E. Two groups of second year students - 120 and 95 respectively - listed these 20 claims in order of importance. The eight receiving most support were included in the questionnaire. No statements making purely physical claims were included.) Heads were asked to add 'any other'. All but two of the heads spoke of some sort of physical benefit which they believed arose from participation in physical education but there were interesting variations on this theme.

Physical gains tended to be seen as a means to other ends. Comments included :- "If P.E. can improve a girl's posture, this may help her whole outlook on life": "Better physical tone can lead to a feeling of well-being which in turn gives a better approach to other aspects of life": "Improved physical co-ordination can help in the skill of writing".

Table 5 gives a summary of the head teachers' views on the value of P.E. The first eight statements were those given in the questionnaire, the rest were given in response to the query "any other?"

Table 5

Head Teachers' views on the Value of P.E. (Special Schools)

	Total No. of Schools 25.	%
a. Gives them opportunity to experience success	24	96%
b. Gives them a leisure time activity	15	60%
c. Helps absorb aggression	17	68%
d. 'Brings out' the shy individual	17	68%
e. Improves ability to work with others	17	68%
f. Improves classroom behaviour	9	36%
g. Improves work in other areas of the curriculum	12	48%
h. Gets rid of excess energy	22	88%
<u>Other points raised :</u>		
i. Improves posture	8	32%
j. Improves co-ordination	3	12%
k. Improves body awareness which leads to improved body image	1	4%
l. Gives enjoyment	10	40%
m. Gives whole child development	1	4%

One head wrote :

"Physical activity, especially where there is non-competitive group participation, provides an opportunity for whole child development and can add to the colour and quality of life."

Several heads spoke of "sheer fun" being ample reason for including P.E. in the programme. (Thus echoing Bevan in his speech on the 1937 Sport and Recreation Act, when he condemned those who sought to justify sport and play on 'moral' grounds).

Summary

As one might expect, provision for physical education was as varied as the schools themselves. However, the overwhelming impression was of considerable interest and good-will towards the subject.

Facilities in North East special schools seemed to be much the same as those in the rest of the country except that they were better equipped for swimming and games. Schools were offering a wide range of activities but swimming appeared to be the most successful aspect of the programme. Walking, camping (including 'camping' in buildings) and other outdoor activities were popular and would probably increase in importance for girls if more women were able to take part in after school and holiday activities. There was much interest in, and a desire to know more about dance.

The greatest single problem was that of staffing. More women teachers with specialist or semi-specialist training in P.E. as well as more teacher-advisers are necessary. The increased number of teachers' courses in P.E. for handicapped children of all kinds should help, as should the increased

research into appropriate methods and material. It is however still a matter for concern that few diploma courses in the education of handicapped children of all kinds include any study of the part which could be played by physical education. (Of the twenty three institutions running diploma or certificate courses for teachers in special, remedial or compensatory education in 1973, only three reported doing more than "mention in passing" the part which might be played by physical education.)

(c) Provisions for physical education in secondary schools

133 secondary schools in seven L.E.A.s were circulated. 100 schools completed the questionnaire. Seventeen heads or deputies wrote or telephoned to say that they were unable to complete it because they were "between P.E. teachers" (3), had "frequent changes of girls' P.E. teachers with a count of nine in four years" (1), the head teacher was absent on sick leave (1), or they taught in mixed ability groups and felt unable to comment on retarded children (8). Four schools stated that they had no children relevant to the enquiry. Sixteen schools did not return the questionnaire or give any reason for not doing so. The results below were drawn therefore from seventy five percent of the schools circulated.

The schools varied from a one-form entry secondary modern school in a category 'D'[⊗] village in County Durham of which the head wrote, "Our school consists almost entirely of less able pupils", to a comprehensive school of 1560 pupils with the full ability range.

The definition of 'slow learner' in 'normal' schools is a difficult one. The Department of Education and Science educational survey No. 15 (1971) uses the term to cover "the fairly large group of children whose learning is slowed down by one or more factors of which limited ability may be one." ¹. This definition was mentioned to the head teachers but the children included in this present study were on the whole, simply those

⊗ Category 'D' villages are those where no new building is permitted; the villages are to die.

1. D.E.S. (1971) p.v.

who were in 'bottom' streams or in 'remedial', 'opportunity' or 'special' classes. The proportion of girls receiving special 'remedial treatment' varied widely. As may be seen from table 6 below, there was no clear pattern in relation to school size, nor was there any relationship between the proportion of girls receiving remedial treatment and the particular local authority which maintained the school.

Table 6

Examples of the number of girls receiving remedial teaching (in its widest sense) in schools of different sizes

<u>No. on the roll</u>	<u>No. of girls on roll (approx. in some cases)</u>	<u>No. of girls receiving remedial treatment.</u>
120	51	0
200	102	20
250	130	55
338	176	38
408	200 approx.	23
500	250 "	0
730	338	80
950	450 approx.	90
1,113	550 "	12
1,150	600 "	60
1,440	752	0

Where there were no children receiving remedial treatment, heads and P.E. teachers tended to speak of the bottom streams.

While most secondary head teachers welcomed follow up visits by the questioner and information on any project which might help this group of children, some heads did not wish to identify less able children in any way. One head wrote refusing permission for the writer to visit his school "because I am not willing for these children to be recognised as less able". Several others wrote that they did not make any special physical education provision for less able pupils because they were anxious that all children should be treated equally. In twelve of the hundred schools responding to the survey there was no form of streaming and all children were taught in mixed ability groups for physical education (and often for all other aspects of the curriculum). The heads of P.E. departments in these twelve schools expressed willingness to comment further on the problem of slow learners. They received adapted forms of the questionnaire. (See appendix 1).

1. Facilities and Staffing

One school, due for closure, had no indoor facilities and another small secondary modern had only a multi-purpose hall. The rest of the schools had at least one gymnasium while all the large schools had, in addition, at least one sports hall and, in three cases, their own swimming bath.

All but one had a minimum one woman specialist with at least a scale one post. In all but the smallest schools the head of the girls' physical education department was on a scale three or four post. The school without a specialist was a school of 338 girls (no boys). Eighty girls in this school received remedial reading because they were more than two years retarded in reading skills. The head was very anxious to make provision for physical education but had been unable to appoint a woman specialist for

several years. The headmistress felt that the poor facilities and small size of the school prevented specialists from applying for the post.

2. Amount of time given to less-able girls compared with their brighter colleagues.

Head teachers were asked whether they gave more physical education to less able pupils than they did to the 'A' stream pupils. They were also asked whether if circumstances permitted, they would give more time. The questionnaire was sent out just as head teachers were finalising details of plans for the raising of the compulsory school leaving age. Heads were asked therefore if they were including any special arrangements for the physical education programme for their non-examination fifth formers.

Table 7, when compared to Table 3, suggests that slow learners in 'normal' schools received very much less physical education than their peers in special schools. The former tended to be timetabled in much the same way as their brighter colleagues and less time was available for physical education.

Table 7

A Comparison of Time allocated to Physical Education for less able and brighter pupils

<u>1st to 4th year pupils</u>	<u>Schools</u>
Less able pupils receiving more P.E. than brighter pupils	6%
Both groups receiving the same amount of P.E.	94%
Heads who would give the less able <u>more</u> P.E. if this were possible.	23%

Plans for 5th Years following the raising of school leaving age

More compulsory P.E. for non-examination pupils	43%
The same amount for all groups	57%
Opportunity for extra 'voluntary' P.E.	25%

A small number of heads (4) wrote with some strength of feeling that they would not give the less able more physical education since "all should be treated equally". These were heads of large comprehensive schools who appeared devoted to the doctrine of equal treatment rather than equal opportunity. Another head teacher's reason for giving no extra physical education indicated a different attitude to the problem. This head of a school of 1500, which had approximately 100 girls designated as slow learners, wrote that there was no point in giving extra P.E. since "I feel that there is a total lack of enthusiasm shown by these children, both boys and girls, because they are lazy. Any effort at all, mental or physical, is an anathema to them." This was an ex-grammar school head. The head of girls' P.E. in his school had also been head of department in the grammar school. She could find no activity at all to interest the slow learners with whom she had to deal. The only other physical educationalist who expressed a similar view was also in a very large comprehensive school. Her headmaster, too, was against extra P.E. for slow learners since "The majority of our regular malingerers in P.E. lessons are also remedial pupils. They prefer anything to P.E."

Another head wrote, "Far too many people assume that the less able child finds P.E. easier/more rewarding than other subjects. Many girls subject to P.E. merely resign themselves to it and plod on indifferently." The specialist in this school felt that if only she could have the less skilled girls in smaller groups she would be able to make physical education a pleasure rather than a penance, but she was unable to persuade her head teacher that small groups were desirable. All three of these schools did, in spite of the heads' doubts, intend to continue to make P.E. compulsory for all throughout the school.

Some interesting plans were put forward for fifth year physical education for non-examination pupils. Amongst those since seen successfully launched was one where much of the summer term was spent camping and canoeing, while during the winter ROSLA groups had been able to skate or swim as one of their optional activities. Other schools took their ROSLA groups to local recreation centres where a wide variety of activities was available. Here they were able to use the 'resident' coaches. These centres belonged to the adult world; there were cafeterias and areas for relaxing as well as good sport facilities. All optional activities planned by the schools were to be open to both boys and girls.

Most secondary schools in the survey had access to outdoor pursuit centres run by the L.E.A. but only 5% said they intended to take (or at present took) less able groups to these centres. Some such pupils could, of course, have been included in mixed ability groups.

3. Mixed ability groups

Twelve teachers working in entirely unstreamed schools were asked about their attitude to teaching mixed ability groups. Table 8 shows their response to the question.

Table 8

Teaching mixed ability groups for physical education

No. working in unstreamed schools	12
No. preferring mixed ability groups in principle	8
No. wishing to separate for games	6
No. wishing to separate for gymnastics	3
No. wishing to separate for dance	1

The teachers wrote of problems arising from mixed ability groups. Most of these arose in games.

"The remedial girls slow down the game for others. They frequently have to be re-told where to stand at the start of the game. They often become excited and run out of position." This teacher had 'streamed' her fourth year hockey lessons this year and found that the slow learners were happier playing small side games.

"Brighter children get frustrated in a games situation because slow learners let them down."

"Problems only arise in the games situation where they slow down the game. They find difficulty in grasping tactics."

"Girls of lower academic ability can acquire skills but these do not carry over effectively to a games situation."

"Problems mainly occur during games lessons where more able girls tend to leave out the less able." This teacher invented rules which would involve everyone throughout the game. Another teacher was also concerned with the problem of drawing the group together. She wrote "Able girls tend to be intolerant towards those lacking a particular skill - it often creates class division." She saw this as an opportunity for social training. "The onus is on the teacher to widen the brighter, more able children's understanding of the limitations (large or small) of other people and the need for understanding and co-operation on the part of others. I hope we are concerned with people and not just champions." This was written by a very experienced teacher whom one hopes would be able to tackle a rather sensitive situation. To deal with mixed ability groups was more difficult for less experienced teachers.

All the teachers in this group equated 'less able' academically with 'less able' physically. One teacher in a large school with a high proportion of remedial pupils was concerned about suitable teaching methods. She acknowledged that verbal explanation was "not helpful with remedial pupils" but found it a problem to engage different techniques with her mixed ability groups. One teacher expressed concern about the problems of co-ordination experienced by certain remedial pupils and of the difficulty of helping them in mixed ability groups. The twelve teachers concerned in this section were asked if they would welcome some form of compensatory or remedial P.E. particularly for slow learners. Twelve teachers in streamed schools were asked the same question. Eight teachers working with mixed ability groups expressed interest, but only three teachers from streamed schools did so. One of the former, (evidently unwilling to depart from the principle of mixed ability groups) said she would like to have slow learners 20 minutes before each games lesson to "help bring them up to the standard of the rest." She assumed that this group simply needed more time to enable them to "catch up". One teacher wanted to give help with posture problems and others interested saw this as an opportunity to deal with difficulties of co-ordination. Several teachers recognised the need for individual help but felt that physiotherapists in school clinics were better equipped to deal with such problems. The twenty four teachers were then asked if they had ever referred a child to the school clinic for help with co-ordination. None had done so. The only teacher welcoming separate classes for dance said "Remedial girls find a great outlet for expression and experience in dance lessons. It would be useful if dance could be time-tabled as an extra subject for these girls in order that they might explore more fully this means of expression. One would also be enabled to explore the numerous channels of application of dance."

4. The programme

Even in streamed schools slow learners were offered substantially the same programme as that given to the upper streams. Physical educationalists considered, on the whole, that the same activities were popular with the majority of girls of a similar age group regardless of mental ability.

Table 9 gives the response of teachers to the question "which activities have you found most popular with slow learners in each year group?"

TABLE 9

ACTIVITIES LISTED AS POPULAR WITH LESS ABLE GIRLS
BY THE HEAD OF PHYSICAL EDUCATION IN 100 SCHOOLS

<u>Activity</u>	<u>Number of times listed</u>			
	<u>1st years</u>	<u>2nd years</u>	<u>3rd years</u>	<u>4th years</u>
Gymnastics	44	28	29	7
Netball	28	33	33	25
Trampoline	7	15	18	22
Rounders	14	16	16	11
Badminton	1	1	8	35
Creative Dance	18	12	4	4
Cross Country	8	13	8	4
Indoor Games/Relay Races	10	9	6	5
Swimming	12	11	2	1
Athletics	7	8	6	4
Table tennis	-	1	2	19
Basketball	1	1	6	13
Tennis	1	5	7	5
Hockey	2	5	5	2
Country/National Dance	2	1	5	2
Keep Fit	-	-	4	5
Volleyball	-	-	1	6
All activities	4	-	2	-
Football	-	-	1	1
All things involving few people	1	1	-	-
Anything requiring little concentration	1	1	-	-
Skating	-	-	-	1
Camping	-	-	1	-
Circuit training	-	-	-	1
Medau	-	-	1	-
'Pop' dancing	-	-	-	1
Ballroom dancing	-	-	1	-
Nothing	2	2	2	2

Note : Some activities were taken only in the fourth year by all but a handful of schools, i.e. badminton, table tennis, basketball, keep fit and skating. In some schools dance and swimming took place only in the first year.

Many teachers in all types of school emphasised that few less able girls were prepared to work to gain a high level of skill. Even those who were physically able wanted to take part in activities with low skill requirements. Cross country running (already noted in the first part of this chapter) was popular, perhaps for this reason. Some other activities requiring a much higher level of skill can nevertheless be enjoyed at a low skill threshold. Trampolining is one such activity and is mentioned as particularly popular with 2nd, 3rd and 4th year girls. Most schools taught a wide range of other individual activities of this nature in the fourth year. However few of these were particularly popular. Table tennis was mentioned by eighteen teachers as popular with fourth years but 108 girls from remedial groups in twelve of these schools said table tennis was 'alright' but showed very little real enthusiasm for it.

Creative dance was the third most popular activity in the teachers' lists for first years but then began to fall off rapidly. Since the second half of this study was concerned with creative dance, teachers were questioned further about this 'fall off'. In the majority of schools dance was not taught after the first year. Some teachers felt girls 'grew out of it' (but had not, in fact, tried it with older girls); some felt it was more important to introduce activities with some place in post-school recreation; ten teachers said that dance took too long to prepare especially if one did not have a pianist available. All these teachers were heavily committed to running school teams out of school hours and felt they could not give time to preparing dance. It may

be that in large comprehensive schools dance should be outside the scope of the P.E. department but included in drama or in arts faculties. This is not uncommon in some areas but was found in only one school in the N.E. survey.

Amongst teachers who did take dance with more than first years, there was much enthusiasm for its use with slow learners. One wrote, "We emphasise dance with our less able girls. The majority respond and show an unusual degree of absorption." Others wrote, "Many girls with no other physical interests have found dance especially satisfying.": "The fourth year girls lose interest in more strenuous activities and prefer to express themselves through dance." Of particular interest was the comment of a teacher who saw much remedial academic work as necessarily highly directed. "These girls are continuously guided and sometimes drilled in the classroom. Dance offers the opportunity to create their own movements and to develop their own ideas."

Twelve teachers said that they were interested in taking dance with less able girls but felt that they lacked sufficient knowledge to take it beyond the first year.

5. Out of school activities

Unlike special schools, secondary schools have a tradition of running teams in many sports. These secondary schools were no exception. Almost all ran at least one girls' team and the majority ran a number of teams in several different activities.

Asked how many girls from lower streams had represented their school in the past twelve months, many agreed with the teacher who said, "I am sorry to be unhelpful but I find that in this school girls with above average intelligence inevitably make up school teams."

Table 10 shows the pattern of participation by slow learners in the larger schools in this survey. It reflects to some extent the findings of McIntosh et al, mentioned in Chapter two (page 14).

Table 10

Participation by less-able girls in school teams in some north east schools.

<u>Activity</u>	<u>No. of Schools fielding a team</u>	<u>No. of Schools involving less-able girls.</u>	<u>Total No. of less-able girls involved</u>
Netball	74	60	320
Athletics	66	53	313
Cross Country	36	33	182
Swimming	46	33	133
Rounders	17	15	97
Hockey	37	21	73
Tennis	16	1	1
Trampoline	9	5	15
Badminton	4	4	9

In the largest schools many fewer less able girls were able to play for their school than was the case in small secondary modern schools. One school of 1560 pupils ran thirteen teams in six different sports and only one girl from their lowest stream took part (in swimming). Tennis requires a small number of participants and this survey shows the same pattern as the schools in McIntosh's survey where the chance of an E. stream girl playing for her school was nil. It is perhaps rather strange to see the large number

playing badminton but generally it has been found that teachers tend to ensure that the teams which involve league and tournament play are first filled with their most able pupils. The only activity where slow learners made up a substantial part of many school teams was cross country running. We have already noticed the interest in this activity. It is a comparatively new activity for girls. In essence little skill is required and it appears from discussion with teachers that little coaching is given. One large school said girls from the lowest stream made up 40% of their cross country teams and another had 54% from the lowest stream. Some schools made a special effort to select girls from the less academically able groups for this sport. The willingness of the lower stream girls to compete in this activity contradicts the notion that such children are unwilling to represent their school given the opportunity to do so.

It is perhaps important to note that many younger specialists said they were prevented from giving the help they wished to give children with motor difficulties through pressure from their head teachers to produce winning teams. Three head teachers who wrote off slow learners as 'idle' proudly showed the writer their trophy cupboard. Although, theoretically, team coaching and play took place outside school hours, there were considerable pressures upon teachers to begin selection and coaching - especially in athletics - during lesson times. This was often the time when the unlikely competitors were sent off for cross country runs. Some girls confided privately that they liked this because it was possible to nip into the local café.

6. Post-School Recreation.

46% of physical educationalists and 57% of head teachers noted the value of physical education in providing a leisure-time interest. They were asked to estimate the percentage of girl school leavers whom they thought would actually take part in some aspect of physical recreation. The results as shown in table 11 do not suggest that P.E. does provide a leisure time activity.

Table 11

Percentage of slow learners (girls) expected to take part in post-school physical recreation

<u>% expected to take part</u>	<u>% of P.E. teachers agreeing</u>
0	50%
1 or 2%	39%
10%	6%
25%	5%

The 5% of teachers who expected 25% or over to continue had links with youth centres with good sports facilities. Girls were introduced to these before they left school. Even here, girls were expected to give up sporting activities when they began to think seriously of marriage. This is not peculiar to less able girls but is in accord with the national pattern as reported by Sillito (1969).

7. The value of the P.E. programme

Head teachers and heads of girls physical education departments were asked their views on the value of the subject. They were asked to indicate whether they agreed with the same eight statements as were given to heads of special schools. (See Page 47).

Only three head teachers thought that slow learners did not benefit from compulsory physical education. Two heads have already been quoted. The third head wrote, "A major difficulty with the majority of these children is that they lack physical energy." Another 3% thought it might be a waste of time for some. Two physical educationalists felt that many in this group were just not interested and that for them it was a waste of time. All others were sympathetic towards the subject and their beliefs as to the benefits to be gained from P.E. are found in Table 12.

Table 12

Head teachers' and P.E. specialists' views on
the possible benefits of a P.E. programme for
slow learners

	<u>Heads</u>	<u>P.E. Teachers</u>
(a) Gives them opportunity to experience success.	75%	78%
(b) Gives them a leisure time activity.	57%	46%
(c) Helps absorb aggression.	29%	48%
(d) 'Brings out' the shy individual.	35%	32%
(e) Improves ability to work with others.	39%	40%
(f) Improves classroom behaviour.	16%	15%
(g) Improves work in other areas of the curriculum.	19%	19%
(h) Gets rid of excess energy	49%	54%

There was remarkable agreement between the views of heads and physical education teachers. One is forced to ask whether there was collusion in filling in the questionnaire ! However there were many cases of disagreement in individual schools. The only

area where in the group as a whole, there appeared much difference of opinion was that of 'aggression'. To see whether this difference was statistically significant the figures were subjected to the test of significance of the difference between two uncorrelated percentages. Null hypothesis : no true difference existed between the percentage from the two groups agreeing that 'physical education helps children absorb aggression' and in this respect the two groups were drawn from the same population.

The formula below was used.

$$\text{S.E. difference of percent} = \sqrt{pq \left[\frac{1}{n_1} + \frac{1}{n_2} \right]}$$

$$\text{Where } p = \frac{n_1 p_1 + n_2 p_2}{n_1 + n_2}$$

$$\text{and } q = (1 - p)$$

$$\text{Then } p = \frac{100 \times 29 + 100 \times 48}{200}$$

$$= 38.5$$

$$\text{and } q = 1 - 38.5$$

$$= 61.5$$

$$\text{Then } \sigma p_1 - p_2 = 6.88$$

The difference between the two percents p_1 and $p_2 = 19$

So the Critical Ratio (CR)¹ = 2.7

Reference to the table of 't' for use in determining the significance of statistics shows that the above CR exceeds 2.62 (.01 level). Therefore the null hypothesis may be rejected and we may feel reasonably sure that the two samples did not come from a common population in regard to a view of aggression in physical education.

1. Garrett (1960) p. 449.

Perhaps the fact that significantly fewer physical educationalists than heads agreed with the statement that 'physical education helps less able children to absorb aggression' was because they had to deal more often with aggressive behaviour in normal lesson situations.

Some teachers worried that "sport actually incites aggression" and that "group effort brings out more aggression and there is bullying of weaker members of the team." Many of the children we are considering have been described as 'born to fail'. Participation in competitive activities obviously increases the chances of experiencing failure and there is a possibility that violent behaviour may arise in this situation. Three quarters of all headteachers and specialists supported the view that physical education "gives less able girls the opportunity to experience success". In order that they may experience this success, the competitive element must not be more than they are able to cope with. Several heads and teachers spoke of the sense of achievement experienced by those gaining swimming and gymnastic awards. It seems important to select physical activities where girls can achieve success. At the same time competition is part of life and we must help children to cope with challenge. Regretfully there was no evidence at all that physical education was being looked at as a means of providing carefully selected challenges appropriate to an individual's need.

The nineteen heads and teachers who expressed support for the idea of success in physical education making impact upon other areas of the school curriculum came entirely from smaller secondary modern schools. In almost all these schools the physical education specialist was required to do some classroom teaching. It may be that the teacher consciously sought links between physical

experiences and work in the classroom. One of the advantages of the special school situation with its much freer timetable is the opportunity to do just this. The possibility that success in a physical field may have an effect upon intellectual achievement has been discussed in chapter two. None of the physical education specialists and only two head teachers from those with whom the matter was discussed were aware of research being carried out in this field.

Again respondents were asked to add any further comments. A number of heads of large schools thought the fact that girls were being taught on their own by a woman was important. "Like Domestic Science, P.E. gives one of the few occasions in the week when girls are on their own with a woman teacher. Such a situation allows the teacher to get to know girls' problems in an informal atmosphere." This aspect ought perhaps to be kept in mind when the proposals to make all fourth and fifth year physical education co-educational is discussed. Very few of the fourth year girls consulted wanted their physical education to be co-educational.

Nine teachers considered an important outcome of physical education was the improvement of muscle tone and physical stamina. This can, of course, only come about through frequent and vigorous exercise. Some teachers pointed out that physical activity only 'gets rid of excess energy' if it is really vigorous and they thought that much going on in girls' physical education was not sufficiently demanding. Certainly some of the activities described as 'popular', such as rounders, entail a great deal of standing about. Similarly the method frequently used in coaching trampolining with all but one of the class standing around the trampoline while that one performs cannot be of much physical value.

On the other hand some activities require a great deal more expenditure of energy from the unskilled performer than from the skilled. The real value of physical education clearly depends not only on which activities are included but the teaching method employed. Methods and activities may well be modified to bring about a desired result.

Summary

The situation in secondary schools in relation to facilities and staffing was much happier than that in special schools. There was still a surprising emphasis on team games although these were acknowledged by many as being the least fruitful aspect to use with less able girls. There was less emphasis on swimming in secondary schools than in special schools, but the range of activities available was obviously much wider.

Many head teachers in this survey acknowledged the importance of physical education and a substantial majority saw it as a means of offering children real success. This was true of teachers in all types of school. Though special school head teachers gave greater support to all statements than did either secondary heads or physical education specialists, the order of 'weighting' was not very different. The order (based on the percentage agreeing with particular statements) for each group, was much the same for all three groups. The greatest emphasis was on "gives them opportunity to experience success" and the least upon "improves classroom behaviour". The second most heavily supported by special school heads and specialists was "gets rid of excess energy" though a number of specialists said "they haven't got any".

The danger of placing too much emphasis on the function of physical education in 'getting rid of excess energy' is that one could easily accept that unstructured and unsupervised play could replace the subject. Those who are inept or lazy do not take part in physical activity unless actively encouraged to do so; there are easier ways of getting rid of energy - destructive behaviour and fighting for example. As will be seen in the next section the vast majority of girls questioned wanted physical education to continue as part of their school programme.

Special school teachers expressed interest but lack of self confidence in teaching physical education. Many specialists showed their lack of self confidence in teaching dance to older girls. Very little thought appeared to have been given to the most appropriate programme for slow learners. The emphasis was on giving them, as far as possible, the same programme as girls in upper streams. Nor had much thought been given to finding different methods of teaching. Only one teacher interviewed spoke of the need for a different approach; more common was the view expressed by one teacher, "I teach the same, only sometimes more slowly."

(d) Some comments from girls

Twelve schools with established P.E. programmes and a full P.E. staff were visited to seek girls' own views on the subject. A total of 108 girls from third and fourth year age groups filled in a simple questionnaire (See appendix 1). All the girls were in 'special', 'remedial' or 'opportunity' classes. No teacher from the school was present during the visit and the girls were promised that their comments would be treated confidentially.

The girls overwhelmingly declared physical education to be 'interesting' (90.7%) and 'useful' (96.3%). In view of the popular belief that such girls reject all things connected with school, this was rather surprising. 70.3% of the girls thought they should have more time given to physical education and only 8.4% thought they should have less. On the matter of whether the girls should be able to choose to do physical education or not, the group split right down the middle - 50.9% thought girls of their age should be able to choose, while 49.1% felt it should be compulsory for all. Since this was not a very articulate group, it was not easy to find out why they felt this way. Most seemed to think it would lead to disagreements amongst the class if there was any choice. None of these particular schools offered their less able pupils a choice of academic subjects and on the whole the girls could not see how choice would work.

Five questions suggested possible gains from taking part in physical education lessons. (Of necessity the five points were very simple). 100% of this group thought that it helped to 'keep them fit'; 83% thought that it made them 'more graceful in their movements' (the word graceful needed explanation to every group); 73.1% thought it helped them 'to slim'; 87.9% thought physical

education gave them 'something to do outside school' and 69.4% thought it would give them something to do when they left school.

Another question asked 'Do you think you are good at P.E.?' Again the response was 50/50 but only 27.7% thought they were 'useless' at the subject.

29.7% of girls admitted that they sometimes attempted to 'dodge' physical education lessons and 1.9% said that they frequently did so. The three most frequently given reasons for avoiding these lessons were 'don't like changing', 'can't be bothered' and 'I'm not much good'. Only 3% said they didn't understand what the teacher wanted in the lessons and only 9% said they were afraid of apparatus. Roughly half those who attempted to sit out of physical education said they didn't like showers, but a small number of other girls gave 'showers' as their favourite P.E. activity!

Table 13 shows popular activities. There is some difference between activities thought by teachers to be popular (see table 9) and those listed by the girls. Even though the girls' responses represented only twelve schools, the differences are notable. Only two of the girls' top six choices appear in the teachers' 'top six'. Swimming was popular with 44.4% of the girls yet only two teachers suggested that it was a popular activity with third and fourth formers. Camping, which lies fourth in table 13, was mentioned by only one teacher while dance, lying sixth in table 13, was said to be popular with older girls by only three teachers, none of them from these twelve schools.

The girls were given suggestions on the questionnaire of possible 'favourite' lessons and these suggestions were amplified verbally.

There was no limit placed on the number of activities which they could list. Some listed as many as five activities, others only one. Only one group of eight girls attended a school where they could choose to follow an aspect which particularly interested them. All others were choosing from activities which were compulsory in their school. Only camping was a voluntary 'extra' in all schools.

Table 13

Popular Activities with Remedial Girls in Twelve Large Secondary Schools

<u>Activities</u>	<u>Number of girls attending schools offering this activity.</u>	<u>No. of girls listing the activity as a favourite.</u>	<u>No. choosing as a percentage of those who took the activity</u>
Rounders	108	90	83.3%
Netball	108	68	62.9%
Swimming	108	48	44.4%
Camping	82	34	42.6%
Tennis	108	44	40.7%
Dance	98	33	33.6%
Gymnastics	108	33	30.6%
Trampoline	98	29	29.5%
Hockey	100	29	29.0%
Cross Country	108	25	26.9%
Athletics	108	25	26.9%
Basketball	98	22	22.4%
Badminton	98	19	19.3%
Table tennis	24	4	16.6%
Volleyball	55	7	12.7%

The range of subjects taught will naturally affect the girls' choice of 'favourite' activity. It was for this reason that only schools with a wide range were included; also for this reason the order of 'favourite' activities was based on choice as a percentage of the possible number choosing.

Girls' choice reflected to some extent the interests and abilities of their teachers. Nevertheless there were some discrepancies between the activities the teachers thought popular and those given by the girls.

The heads of department in the twelve schools used in this section of the enquiry agreed with the girls on the popularity of netball and rounders but were wrong in believing that most less able fourth years liked table tennis, volleyball and badminton. A number of teachers taught activities they knew were unpopular.

Of course, one would never seek to present a programme based simply upon a popularity poll. If one wished to give girls a physically exacting programme, then one would certainly omit rounders; if one wished to ensure improved physical co-ordination, then neither rounders nor camping would be high on one's list, but given a list like that in table 13 as a guide one could select the activities most likely to fulfil one's aims. Perhaps even more important, with a wide range of possible activities available, would be to avoid activities which were unpopular with a substantial number of girls. As can be seen in table 14 (overleaf), hockey was the most disliked activity of all. Many girls - even the most enthusiastic - spoke of their dislike to being "made to go out in the cold". It was strange that so many teachers persisted with hockey for girls who had limited physical ability and stamina. Where skills

were used in small side games in a sports hall, there was more enthusiasm. Indeed most of those pupils who gave 'hockey' as a 'favourite' activity turned out to mean the game played under cover in teams of not more than five.

Table 14

Activities disliked by girls in twelve secondary schools.

<u>Activity</u>	<u>No. of girls who could have chosen.</u>	<u>No. listing activity.</u>	<u>% listing activity</u>
Hockey	100	43	43%
Athletics	108	23	21%
Gymnastics	108	16	14.8%
Netball	108	15	13.8%
Cross Country	108	13	12.1%
Tennis	108	9	8.4%
Dance	98	8	7.7%
Rounders	108	4	3.7%
Swimming	108	3	2.7%

Probably the only significant point in this list (apart from noting the dislike of hockey) is the high place of athletics. Here, however, it is important to note that many of those who said they disliked athletics added that they liked some parts of it - usually long jump and occasionally running. The two aspects most disliked were high jump and hurdles. Of both these activities girls said they were afraid of hurting themselves.

Only six of this particular group played netball for their house and eight took part in competitive cross country running.

Four said they would like to be on a school team but thirteen remarked that they just "weren't interested" or "couldn't be bothered". As mentioned earlier much attention has recently been given to the academic ability of individuals representing their schools in competitive sport. A useful study might be made of why headteachers and physical educationalists continue to promote these activities, particularly for girls. Many teachers met in the course of this study spoke of the increasing difficulty of getting girls to turn up for matches and practice.

Girls were asked what they did in their spare time. Swimming was the most important sporting activity. Almost half the girls said they used the local swimming pool in the evenings, week-ends and holidays. Twenty two girls said they went ice-skating about once a week and four said they were 'good' at skating. Twenty one girls sometimes played games at the local youth club. Of these, thirteen 'quite regularly' played in netball matches for the youth club attached to their school. Most of those playing netball, swimming and ice skating said they would continue these activities when they left school.

Unexpectedly, nine girls said that the juvenile jazz band was their favourite activity. It was discovered that over half the twelve to thirteen year olds (twenty two girls in all) from the special school described as School C in part two of this thesis were members of juvenile jazz bands. They claimed to attend very regularly both evening practices and Saturday 'competitions'. The attraction appeared to be dressing up, parading before others and winning medals. Most juvenile jazz band members appear to be in the junior school age group, though such is the popularity of these jazz bands today in the

North East that even toddlers of three and four carry their 'twirling stick' when out with mother. The girls in this survey said they liked 'being in charge of the little ones'. Five of the nine secondary school girls rated themselves as 'not very good' at physical activity but said they were good 'twirlers'. The jazz bands seemed to give a sense of belonging to a community, which once was claimed to be an important aspect of school teams. While one would not wish to advocate turning a school football match in this country into the equivalent of an American high school game, the manner in which these games are the focus of small communities and draw upon the skill and enthusiasm of the twirlers, cheerleaders and marching bands could be worth considering. Involving not only jazz band members but their adult leaders in school activities could well be the means of creating a useful bridge between school and members of the community who may not normally feel any identification with an educational institution. Physical education departments could make the first move.

The response of these 108 girls to the questionnaire is given in greater detail in appendix 1.

Much concern over the plight of slow learners in big comprehensive schools was expressed by C. Cave, staff inspector for special education at the Department of Education and Science and others speaking at the 1971 National Conference of the Joint Council for

the Education of Handicapped children. The situation for these girls in physical education seemed to be less disquieting than in other aspects of the curriculum. Where facilities and interested specialist teachers existed in the schools included in the present survey, physical education was giving a great deal of both pleasure and self esteem to slow learning girls. Very much more might be done if the amount of time available for physical education was increased. Physical educationalists needed also to look more closely at the programme they offered. Many, of course, had little choice. In one school 106 girls - a complete year group - was time-tabled for games at the same time. The sole woman specialist was 'assisted' by teachers of other subjects directed, often unwillingly, by the headmaster. Since the specialist felt pressure to produce school teams, she tended to concentrate upon the best and leave her helpers to cope with the less able. The girls enjoyed their rounders but the session was little more than a romp. Much of the girls' enjoyment of the subject seemed to be almost negative in that the period was enjoyed as a relief from the strains of classroom work.

Not unnaturally many physical educationalists get most of their reward from working with the physically skilled and those most able to respond to their coaching. One would not wish to deprive either the teachers or the gifted performers of their pleasure. Obviously those in the twelve schools mentioned above were giving something of value to slow learners but even more use might be made of an activity which over 90% of girls found both useful and interesting. There is need for physical educationalists to examine more closely the particular needs of slow learners, to

determine specific objectives for this group, to discover more appropriate ways of teaching motor skills, to take note of activities pleasurable to the group they are teaching and to 'educate' other educationalists into the contributions their subject could make, given good time-tabling.

One would also hope that wise administration would permit girls in special schools to share in the benefits which might arise from such an examination.

PART 2

An Empirical Study using Creative Dance
with Adolescent Girls from Three Schools
for Educationally Subnormal Pupils.

The study includes sociometric
tests, tests of social behaviour,
and movement assessment.

CHAPTER 4

A RE-STATEMENT OF THE PROBLEM AND A PILOT STUDY

Children are in special schools because they have failed to measure up to outside standards of educational achievement. The cause may be genetic or environmental but, whatever the cause, the effect is not limited to one area of life. Habitual failure has a damaging effect upon social and emotional development. Children who experience frequent failure often become self-deprecating and feel all new tasks are too difficult to attempt. "I can't" is a very common response from these pupils.

Behaviour problems loom large in all special schools. Bruce (1970) speaking of her observation of children in a great many special schools says :-

"They are angry with life - they are used to bad language, rows and uncontrolled behaviour; they are frequently on the verge of exploding; they belong to a violent world."

1.

Many girls in E.S.N. schools visited in the course of this study were from broken homes and disturbed backgrounds where self-control was not encouraged. In schools where teachers are struggling to maintain discipline and where children feel at odds with life, little effective learning can take place.

While some children react to failure by "kicking at life", others tend to withdraw from contact with people. In E.S.N. (mild) schools such children are not incapable of making relationships with others. They seem simply unwilling to risk too much involvement for fear of failure; they dislike new tasks and meeting new people.

1. Bruce (1970) speaking at a lecture in Newcastle.

They tend to be less of a 'nuisance' in school than their more aggressive peers but they too need help towards a richer social life.

Two national reports spoke of the lack of social skill, and inability to get on with others, commonly found amongst less able pupils :

"We feel bound to record our impression that very many of these less gifted young people are socially maladroit, ill at ease on personal relationships, unduly self regarding and insensitive: their contact, even with their peers, is often ineffectual."

(Half our Future)

"The schools' principal task is to prepare the individual for adult life, develop in him such skills as will ease his relationship with others beyond the immediate circle in which he has grown up We must place at his disposal other ways of dealing with disagreement than just by fighting."

(Working Paper 12 - Schools' Council).

Those who have experienced frequent failure need to experience success in a quick and obvious fashion. Their success needs to be obvious to their teachers, their peers and themselves. One receives immediate feedback in physical education - success is obvious to the performer and to those observing.

In Chapter Two, reference has been made to a number of experiments in the use of physical activities which gave this type of experience to retarded children and measured the impact of such success upon other areas of life. The programmes described were found valuable with educationally subnormal boys but in the few programmes involving girls the results were disappointing. Yet, slow learning girls questioned in the survey described in Chapter Three spoke with enthusiasm of their physical education lessons. It would clearly be useful to find aspects of physical education which would interest slow learning girls, particularly adolescent girls.

One aspect which obviously appealed to many of the girls in schools mentioned in Chapter Three was swimming. Another aspect which has been shown to appeal to many adolescents is dance. Country or folk dancing was popular in some schools visited. Obviously educationally subnormal girls can be taught and often enjoy country dancing but all too often this involves 'drilling' the pupils. Many slow learners confuse left and right sides of the body. This creates problems in the teaching of country dancing. This form of dance, to become 'alive', also requires great empathy from dancer and teacher - the ability to enter into the spirit of people often widely removed from oneself in time or space.

On the other hand so-called 'creative' dance is very contemporary. A girl's typical movement - jerky or smooth, tight or open - has a place in such dance. Ideas explored can be very familiar to an adolescent of the 70's with an inner city background.

In the Newsom report we read that :

"below average girls show, under a skilled teacher, an absorption in creative dance which is seldom shown in other fields." 1.

It was with this in mind, and personal experience of the enjoyment of dance by retarded girls in both secondary modern and in special schools, that the writer set up a pilot study into the effect of dance upon social relationships and behavioural problems of educationally subnormal girls, (1971).

1. Half our Future. P. 138 para. 406.

1971 Pilot investigation conducted by the writer

For the pilot investigation two classes of 13 to 15 year old girls from a city special school were taught over a period of ten weeks. The headmistress of this school considered a substantial proportion of her girls to be maladjusted, and there were frequent emotional outbursts in the school. The experimental group received lessons in creative dance while the group which acted as a type of control received gymnastic lessons. A sociometric test was given before and after the course of lessons. Results showed a statistically significant increase in social receptiveness in both groups. A few girls whose physical performance improved more than average made substantial improvements in peer rating. The examination of changes of behaviour was attempted by means of the class teachers' assessments of this before and after the programme.

The teachers' assessments were made in response to a questionnaire broadly based on the Bristol Social Adjustment Tests. The dance group's behaviour showed statistically significant improvement in the areas of 'restlessness' and 'unforthcomingness', while in the gymnastic group overall scores for 'unforthcomingness' showed significant improvement. It was not possible to say that the improvement was a direct consequence of participation in these forms of physical activity, yet the results were sufficiently encouraging to form a basis for the present follow-up study.

The gymnastic group in the pilot study, in spite of apparently enjoying the work they did, continued to ask to dance. The dance group did not ask for gymnastics but only for more dance. The writer therefore decided that dance should be at the centre of the follow-up study.

The Follow up Study

The study which is now described was designed to test the thesis that E.S.N. girls can experience meaningful success through participation in creative dance and that this success will have an effect upon social behaviour and friendship patterns.

CHAPTER 5

THE SAMPLE

(a) The Sample

Twenty five special school heads from the twenty seven approached for the survey (described in Chapter Three) said that they would welcome the writer to teach in their schools. However several of the schools had such small numbers of secondary age girls that they were unsuitable for use in the proposed study. Since it was intended to use sociometric techniques to examine possible changes of friendship patterns, it was necessary to teach classes which normally worked as a group rather than take a random sample. Nor was a random sample of schools attempted. Instead, the sample was intended as a cross section of schools with secondary age E.S.N. girls. The schools were selected on three counts.

- (i) Type of subnormality. Schools were selected so that they would include both 'true' E.S.N. girls and also those who appear to have failed because of environmental obstacles.
- (ii) Organisation of school. All-age schools, secondary age schools, single sex and co-educational institutions were to be represented.
- (iii) Physical Education programme. A school where there was already an established programme for girls was to be contrasted with a school where no such programme existed or where the head of the school expressed dissatisfaction with the P.E. programme.

Three schools were selected to cover these requirements. They are described as Schools A, B and C.

School A.

A high proportion of children in this school came from 'problem' areas, mostly from high density public housing. Five of a group of twenty girls involved in the study came from one-parent homes. The stated I.Q. of most pupils in the school lay in the 60 to 80 range. The school was co-educational and catered for 100 pupils in the age range 4 to 16 years. Twenty three girls were of secondary school age. (Three of these were not included in the study since they had a very poor attendance record, in fact they rarely appeared for dance lessons and were absent for the tests).

The school building was only seven years old and was surrounded by gardens and playing fields. There was a multi-purpose hall with portable gymnastic equipment. A new municipal swimming pool was next to the school and an open air sea water pool was one mile away. The school had easy access to the sea and to a local ice rink.

1.

At the time of the P.E.A./B.A.O. L.P.E. national survey the school had a man P.E. specialist, but he left the school in 1970 and was not replaced. The headmaster had originally been a P.E. specialist and had a profound belief in the importance of the subject but had been unable to recruit a P.E. specialist to his staff.

The P.E. programme included all the main activities, but no dance was taught. Each class had 3 hrs. 10 mins. P.E. per week. Senior pupils who had problems in learning to swim had an extra half hour at the swimming pool. Older pupils, who still could not swim with confidence had a two-week-long crash programme with daily swimming using a oneto one method of teaching. The head teacher claimed that it was a rare occasion for a child to leave his school unable to swim.

1. P.E.A. = Physical Education Association of Great Britain & N. Ireland.
B.A.O.L.P.E. = British Association of Organisers and lecturers of Physical Education.

Canoeing and sailing were organised and some girls took part in these activities. Mixed groups also visited the L.E.A. Outdoor Activity centre.

Outdoor activities were taught by a craft master with special qualifications in these fields. Other girls' P.E. was taken by the deputy head, who had no specialist training in P.E., but who had attended evening courses and one vacation course. Swimming was taught by a specially appointed swimming instructor.

None of the girls in this group had obvious physical handicaps. There were two West Indian sisters who were born in this country but who, according to the headmaster, suffered from the conflict between a tightly authoritarian home and the freer pattern in school. These two proved to be unusually gifted in dance. The mean I.Q. of girls involved in the study was 65. One girl had a 'suggested I.Q.' of 43.

School B.

This school virtually restricted its intake to children with an I.Q. below 70. The mean I.Q. of the girls involved in the dance programme was 61.6.

Unlike the other two schools used in this study, the school contained a high proportion of pupils with multiple handicaps.

The twenty girls involved in this programme shared the following physical difficulties:-

Epileptics	(3)
Enuretics	(4)
Brain damage	(1)
Hearing loss	(5)
Marked speech defect	(4)
Defective vision	(7)
Obesity	(2)

Some girls, of course, suffered from two or even more of the difficulties noted. Two had been 'battered babies', while another in the group had been sent from a secondary school with the charge "Behaviour is manic".

The school was co-educational with 120 pupils in the age range 4 to 16 years. There were only 20 girls in the secondary part of the school. In the lower school, classes were co-educational but there were two single sex classes in the secondary section.

The school building was immediately post war but there were more recent extensions. There was a multi-purpose hall, which was unsuitable for fixed apparatus. The hall was also a corridor through which there was a constant stream of children moving about the school. There were playing fields and the school was close to a municipal swimming pool. The girls had considerable success in swimming and the head thought that 25% of school leavers were likely to continue swimming when they had left school.

The school had no regular physical education programme other than swimming and no-one on the staff was very interested in girls' P.E. The head said, "I have to be honest with you and say that because of academic pressures P.E. is often the cinderella subject and because of the time factor is often neglected."

Though there was little physical activity, many other 'non-academic' activities took place. The secondary girls used in this study had, during the previous year, a series of drama lessons from a well-known drama teacher. The girls reported they had found these 'embarrassing'. "You had to keep saying things." was their complaint.

Like most special schools, School B had many student visitors but none had taken any aspect of P.E. The class teacher in charge of the senior girls had been prevented from taking part in any physical activity from the age of 14 because of severe cartilage trouble. She had attended but not joined in the practical aspects of a three year professional course during her teacher training. She had not given her pupils any physical education up to the time of this experiment but gave the girls a lot of art work. After the initial experimental dance classes, the class teacher continued to take the girls for dance and became very involved with this approach both in and out of school.

School C.

This school was used for the pilot project described above. It was the only school in the area large enough to permit an experimental and control group to be drawn from the same school. It was therefore used again. All those girls included in the pilot project, together with the two class teachers, had left the school by this time.

School C was a secondary school for E.S.N. (M) girls and had 150 on the roll aged between 12 and 16. The classes used for both experimental and control groups were aged 12 and 13 years. * The groups were viewed as 'parallel' by the head except that rather more of the experimental group were extremely retarded in reading and writing. Only one of the experimental group was less than five years retarded in measured reading ability (Schonel) while only six of the control group were as retarded. The experimental group had a mean I.Q. of 69 and the control group a mean I.Q. of 68.8.

* Note

It was originally intended to use girls aged 14 to 15 years but the class teacher of the proposed experimental group left shortly after the experiment began and the class had to be split up amongst other teachers. The experiment was abandoned and began again the following term with these younger girls.

There were fewer obvious physical handicaps in this school than in School B, but there were many environmental handicaps. In the experimental group two girls were fatherless and another belonged to a family of ten children with "at least 3 fathers". The present "father" was in prison. In the group was one set of twins and two other girls whose twins were also E.S.N. One such twin was in the control group and the other was a boy twin who was in a maladjusted unit. Six other girls had siblings in E.S.N. schools. Four girls had fathers who had attended E.S.N. schools.

In the control group also one girl had an E.S.N. brother; eight other girls had siblings in E.S.N. schools. Four girls came from broken homes and another had a father in prison. One girl's mother was an alcoholic and five had mothers or fathers who had attended a special school. Nine girls in this group came from families with seven or more children.

It is not surprising under the circumstances that we find one girl described as having an uncontrollable temper, another as 'excessively withdrawn' and a third as complaining of frequent headaches.

School C drew its pupils from a wide area in a large city. The school buildings were pleasant, modern, and had good playing fields. The multi-purpose hall had fixed apparatus appropriate to the primary age range. (The school was an all-age school until four years ago).

There had never been a P.E. specialist in the school. Each teacher was responsible for her own P.E. The hall was 'timetabled' but teachers were free to use it or not as they wished. The amount of P.E. varied from class to class.

The class teacher of the control group had taken a three year professional course as part of her training. She thought her class perhaps had "slightly more P.E. than most classes in the school", but she was "not a Physical Education enthusiast". The class teacher of the experimental group was a two year trained teacher whose training had included Physical Education. However she was nearing retirement age and found P.E. "rather an effort".

The head mistress was very sympathetic towards dance and would have liked this to flourish in her school. However she had never had a teacher who wished to take dance.

CHAPTER 6THE TEACHING PROGRAMMESCHOOL A.

Twenty girls from School A with a chronological age of from twelve years nine months to sixteen years seven months were taken by the writer for two hours dance per week for the Spring and Summer terms in 1972. There were three classes in the Secondary section of this school with a total of twenty three girls. The girls were normally withdrawn from their classes for physical education, cookery and needlework. Three of the girls attended only very spasmodically so they were not included in this study. The twenty girls who were involved had an I.Q. range of 43 to 78 with a mean of 65 and a standard deviation of 7.88. ^{1.}

SCHOOL B.

Twenty girls from School B with a chronological age of twelve years eleven months to sixteen years eleven months were taken by the writer for two hours dance per week for an Autumn and a Spring term while their own class teacher continued with the programme in the summer term. Although this was a mixed school, these twenty girls were normally taught together for all subjects. They had an I.Q. range from 46 to 71 with a mean I.Q. of 61.65 and a standard deviation of 6.7.

It had been hoped to work with a further group of older girls and to have a similar group as a control group. However shortly after work was begun with an older group (with a parallel group as control) the class teacher left and the head was forced to distribute members of the class amongst other groups. The work with this

1. As recorded by the L.E.A. psychologist at the start of the academic year.

group of girls was abandoned and the following term two groups of younger girls were involved in the programme. These two groups were chosen because they had experienced long-established teachers.

SCHOOL C. (Experimental Group)

Sixteen girls from School C with a chronological age of twelve years four months to thirteen years two months were taken by the writer for two hours dance every week throughout the spring term and four hours per week in the summer term. (The reason for the increase in dance time in the summer term was because there had been many interruptions to the programme in the spring term due to a major staff upset). The group was smaller than most special school classes because it was housed in a mobile classroom. It was originally a group of seventeen, but one girl, who was never present for dance, was transferred to a community school in the third week of the programme. The group had an I.Q. range of 50 to 80 with a mean of 69 and a standard deviation of 9. This group - as a group - was the most illiterate of the four classes in the experiment. This class is known in this study as School C (Experimental Group).

SCHOOL C. (Control Group)

Another group from School C consisted of twenty girls with a chronological age of from twelve years four months to thirteen years three months. The two classes were regarded by the school head as roughly parallel. She had placed rather more of those 'retarded' in reading and writing for their 'mental' age in one class than the other (i.e. in the 'experimental' group), but did not regard the groups as 'streamed' in any way. This group had an I.Q. range of from 51 to 76 with a mean of 68.8 and a standard deviation of 5.5. The group (known hereafter as the Control Group) took

part in a movement assessment at the start and finish of the experiment but received no other dance. They continued their normal physical education programme with their own class teacher.

TABLE 15

A SUMMARY OF CHRONOLOGICAL AGES AND INTELLIGENCE QUOTIENTS IN THE FOUR GROUPS

	<u>Number in Group</u>	<u>Age Range</u> ^{1.}	<u>I.Q. range</u> ^{2.}	<u>Mean I.Q.</u>
<u>School A</u>	20	12yrs 9m. to 16yrs 7m.	43 - 78	65
<u>School B</u>	20	12yrs 11m to 16yrs 11m	46 - 71	61.65
<u>School C</u>				
Experimental Group	16	12yrs 4m. to 13yrs 2m.	50 - 80	69
<u>School C</u>				
Control Group	20	12yrs 4m. to 13yrs 3m.	51 - 76	68.8

- Notes. 1. Age at the beginning of the dance programme.
2. I.Q. as established by the educational psychologist at the beginning of the school year in which the dance programme took place.

Creative Dance

Dance as part of the school curriculum has a number of titles. It is known as 'Modern Educational Dance', 'Creative Dance', 'the Art of Movement' and 'Music and Movement' among other titles. It is not proposed here to argue the meaning of the concepts

involved even in the titles given to this form of educational activity. (This has been excellently carried out by H.B. Redfern (1973)). Nor is it intended to discuss the significance of dance in education. (For such discussion see Arnold (1968), Bruce (1965) Russell (1968), Reid (1969) and many others). The term 'Creative Dance' was selected as a title for the work used in this study largely because it seemed less likely to confuse than other terms. Teachers and pupils alike tend to equate the term 'Movement' with the B.B.C. programme aimed at young children and, even today, the term 'Modern Dance' tends to be confused with forms of social dance.

It is intended simply to describe the type of work used in the teaching programme for this study. The work was broadly based on that of Rudolph Laban. This form of dance is not restricted to one type of rhythm, spatial pattern, bodily movement or dynamic quality. That is not to say there is no technique. The technique is based on Laban's analysis of movement in terms of bodily action, spatial patterns and the dynamics of movement. This latter is further broken down into - attitude towards time i.e. movement which is quick or slow, sudden or sustained, accelerating and decelerating; attitude towards force or energy i.e. strong, firm movement or fine delicate movement, explosive movement or restrained; attitude towards space i.e. movement cutting directly through space or movement which 'indulges' in space taking a winding, flexible path; and attitude towards flow i.e. movement which is 'bound', capable of being stopped at any moment or movement which flows freely. Even these basic qualities and the combination of these qualities known as 'efforts' can be studied at a very simple or a highly complex level. A child involved in exploring the action of rising or falling may be led to explore all the possibilities

of this movement; the difference between an explosive spring into the air and a gentle rising action using a turning movement, the different mood evoked by rising while focusing high and rising while focusing on the ground. From such experiences a child may be led to select and refine and thus produce his own 'dance'.

It is common practice to base dance lessons on Laban's sixteen basic themes (See Laban (1948) and Preston-Dunlop (1963)). Gittins's experiment using dance with mentally retarded children quoted in Chapter 2 was based upon Laban's first eight themes. It is also frequent practice to base dances on events such as 'Guy Fawkes' day or upon stories and ideas such as are used in classical ballet. Both these approaches were used in this study.

Many 'purists' dislike the notion of dance being used for the 'release of tension' or the "discharge of surplus energy or emotional excitement" to use the words of Susan Langer (1953). Similarly those who see dance primarily as an art form are opposed, often violently, to the use of dance as a therapy. Such work is seen as having nothing to do with education. When, however, children are 'locked up' by frustration caused by frequent failure, when they are afraid (as some girls in this study were afraid) to put paint on paper without a 'guide line' from the teacher, when they are to be prevented in adult life from holding down a job by their inability to 'get on' with others, then 'therapy' and 'education' seem to go hand in hand. At least such was the belief on which the following programme was based.

Emphasis in the early stages with all three dance groups in this study was on overcoming the self consciousness displayed by many girls and on helping them to relax. In order to do this the girls were given attractive coloured material which they caused

'to dance'. In concentrating on the material most girls - though not all - ceased to be embarrassed. The use of an uncomplicated and steady rhythm (usually a waltz) to accompany this movement appeared to release tension and the majority of girls were able to enjoy movement at once, though for some this meant simply moving on the spot. The more nervous girls from school B 'hid' behind their piece of material draping it over their faces. This was used as part of an 'Indian' dance - faces being veiled and only hands dancing. For three weeks two girls who were noted by their class teacher as being 'very withdrawn', only joined in the lessons for the 'Indian' dance but then, apparently, felt sufficiently secure to join in the whole lesson. In School C the more nervous girls covered themselves with large pieces of material. This 'hiding' from the rest of the class was developed into a 'ghost' dance, which enabled all to take part without 'revealing' who they were. It took the two least intelligent members of this group some weeks to get even to the stage of dancing without the security of material and one other girl from time to time throughout the programme withdrew to her 'private world' beneath a particular piece of material. The photographs on Page 99 show the girls 'hiding'.

The second aim of this programme was to encourage girls to work together and to experience the different relationships arising from different numbers in a group. Diana Jordan (1966) suggested that:

"the opportunity for practical experience in spontaneous relationships is one of the most important contributions which movement can offer in the education of children." 1.

Using material to produce a 'private world'.



Preston-Dunlop (1963) saw dance as providing

"an excellent medium in which to develop satisfactory relationships with other people".

1.

Others have disagreed with these statements either because they believed other methods would prove more productive in improving relationships, or because they believed that dance should not be focused upon relationships but upon the development of art forms.

However it was a central feature of this study to discover whether it was possible to improve interpersonal relationships through dance and the programme was so structured as to permit the maximum amount of experience in working with others.

Several ways were developed. Simple couple relationships were developed - ways of approaching and leaving, copying a partner's dance, moving in unison with a partner, making up a duet of question and answer in movement and so on. The most popular was that of leading and following. One girl took another by the hand and led her round the room first with her eyes open and then with them closed. The responsibility of the leader for her partner's 'safety' and then for making the movement pattern 'enjoyable' were emphasised. The uses of different types of music to accompany this movement led to a variety of 'dance patterns' which leaders were encouraged to repeat. (Some comments by individuals on this activity appear in Appendix 6). Another

way involved two or more girls handling a large piece of material (see photograph on Page 102). The girls 'made the material dance to music'. The co-ordination required was quite difficult for these girls but in one class (School C) some of them advanced to interesting interwoven patterns. Larger group movements were also used. One of the first taken with each group, and popular with all, was a simple type of 'farandole' or 'follow my leader'. The photograph on page 102 shows one group producing a labyrinth type pattern. Some girls proved very successful at 'winding up' a group and then 'unwinding' while a few enjoyed 'inventing' different kinds of patterns for the rest to follow.

The girls from School A found it difficult to work in groups of more than two, except in the above type of work, while the girls from Schools B and C enjoyed whole class dances. These dances usually arose from a happening in the lesson or something the girls had experienced outside the lesson. As already mentioned a 'ghost dance' was introduced because girls wanted to 'hide' under materials. One of the girls suggested that there should be a group of the children 'frightened' by the ghosts and this led to a dance based on children's games. Later the same group was excited by a visit to the theatre to see the 'Sleeping Beauty Ballet' and longed to try this themselves. A highly adapted version of the story was evolved into a dance, which became the firm favourite of the group.

Another dance arose in School B because of that school's pattern of pupil involvement in the school assembly. Towards the end of the programme of dance with the writer the girls decided they wanted to 'do some dance' for their assembly. They had only a vague idea of what this should be. The theme of seed time and harvest was used as the basis of a dance with this group.

Dances requiring co-operation with others.



All these dances used the same basic movement ideas but as can be seen, the interest of individual groups dictated how the dances should develop. Much discussion and 'give-and-take' were involved in the development of these group dances.

Details of some of the themes used are given in Appendix 6.

Individual lessons were usually, though not inevitably, structured as follows :-

Introduction Either solo dances using small pieces of material or a simple farondole.

Movement Experience Individual exploration of one or more movement ideas.

Group Dance (s) Using ideas explored in the previous part of the lesson.

Lessons always finished with some gentle movement when the girls danced with material or not as they wished.

Sometimes percussion instruments were used to accompany the movement. These were played by the teacher or by the dancers themselves. If a girl had to 'sit out' for any reason they were usually drawn into the group by being asked to accompany the movement, though for some this might be limited to striking an instrument at an appropriate moment.

More often music was used. This was always taped and a battery-operated recorder used so that the teacher was able to stay in the middle of the group where necessary.

After the lessons girls were encouraged to write about what they had done and felt. Girls from Schools A and B enjoyed this but those from School C found this very difficult. To be asked to write something so spoilt their pleasure in dance

that it was abandoned but some taped comments were made. The girls from School C were also reluctant to paint without detailed guidance. Towards the end of the experiment they began to paint with some freedom and apparent enjoyment. The girls from School B already enjoyed painting and their translation of some of their dance to 'a picture' is shown in photographs on Page 105.

This then was the programme which was spread over two school terms and, in the case of School B, carried on afterwards by the class teacher.

The aim of the programme was frankly therapeutic. It was hoped that by plenty of involvement with others in a practical situation those previously unpopular would find a place in the group and all would be more willing than previously to work with other members of the class. The effectiveness of this approach was tested by the application of sociometric tests.

It was further hoped that by achieving success in dance and having that success noted by others, the girls would become less aggressive, and more willing to try other new experiences and to respond to new faces. It was also hoped that, as girls were able to concentrate on longer pieces of music and longer dances, their restlessness in class would diminish.

This was tested by means of behaviour assessment by the girls' own class teachers.

These two tests and the results of findings in these areas are described in the next two chapters.

Paintings by girls in School B.

The sea dance



Patterns in space



CHAPTER 7SOCIOMETRIC TESTS

In order to examine the possible effects of dance on friendship patterns and on an individual's acceptability to her peers a sociometric test was administered before and after the dance programme.

Abstract

Sociometric tests were given before and after the dance programme. The same tests were given to the control group. Where the number of choices to be made was unlimited, there was a relatively constant rank order. A substantial dance programme appeared to result in those originally poorly chosen receiving more choices and the number of rejections made was fewer on the occasion of the second test. In the control group the number of rejections increased in the second test. Those who were of lowest intelligence in each group were of low sociometric status and often actively rejected by others in the group.

(a) The use of sociometric tests in previous studies.

Sociometry is an established tool for research into the informal structure of groups in educational and other situations and has been found of value to teachers. The technique has been used in a number of studies concerned with physical education because the subject offers many opportunities for small group interaction. Skubic's (1949) study with high school girls showed that after a six week programme of physical education there was a definite decrease in the number of isolated girls and an increase in the number of frequently chosen girls. The pilot project for the present study, which was carried out by the writer over a period of ten weeks, found that after dance and gymnastics programmes a similar result was obtained with educationally subnormal girls. Breck (1950), repeating Skubic's experiment, found that individuals did not change their sociometric status to any marked degree in a six week period of physical education; that is, those originally ranked high and those originally ranked low tended to maintain their places in the rank order.

White (1966) used sociometry to examine the effect of three different types of physical education lesson on relationships in three classes of secondary age boys. He found that, though sociometric status was relatively constant over a period of ten weeks, a group which had received a programme of minor games "showed better integration at the end of the experimental period" ^{1.} than did the two groups receiving gymnastics and a mixed activity

1. White (1966) p.47.

programme respectively. This study suggested that it was possible to manipulate group situations to develop more cohesion in a group of young people and that groups of about five were more effective in achieving this end than were large groups.

Ventre (1966) suggested a number of applications of sociometry in physical education including the identification of isolates or poorly chosen children and the possibility of beginning "the remedial progress of their integration and adjustment".¹

Ventre attempted to show that the choice of partners in a sociometric test was significantly related to criteria. That is to say one individual might be desirable as a companion on a camping trip but not as a member of a football team. Ventre took a group of 7 to 8 year old boys and a group of male physical education students and administered a sociometric test in order to establish the manner in which partners were selected. He found that the choice pattern of adults was based on more objective judgement than that of the school boys whose choice pattern was largely independent of criteria. This suggests that as one would expect, increasing maturity increases the objectivity of choice. (A possible weakness in Ventre's study was that, although he used established groups, some of his criteria were 'unreal' in the sense that those completing the test knew they would not be acted upon).

Educationally subnormal pupils are unlikely to base choices upon objective judgement and more likely to base them upon the mood of the moment. This perhaps makes the use of this form of test with such pupils questionable. Laing (1968) writing on the use of

1. Ventre (1966) P.41.

sociometric techniques with educationally subnormal pupils states that such children do not respond so much to the actual words as to "the basis of the degree of interaction which they may have with their fellow pupils." ¹. She suggested that normal sociometric techniques were unsuitable for use with such children and that the Cowell 'personal distance scale' was more useful. However, Groves' pilot study, while finding the multi-criteria technique of little value, found that with adolescent educationally subnormal girls there was considerable stability in choice patterns.

The multi-criteria technique was used with two groups in the present study also but it was found that

- (a) choices were largely repeated in response to each criterion
- and
- (b) some girls tended to become confused when presented with more than one situation for which they were required to select partners.

It was therefore decided that for the purposes of this study consideration should be limited to the response to one criterion. This was before the dance programme - "With whom would you like to dance in the dance lesson next week?" for the girls from Schools A and B. At the end of the programme they were asked the same question at the commencement and the conclusion of the programme i.e. "With whom would you like to dance when you visit college next week?" Moreno, the 'father' of sociometry, insisted on the importance of real choices and of acting upon the choices made. As far as possible girls were put into groups with their chosen companions for the session following the administration of the sociometric test.

1. Laing (1968) p.121.

The process of limiting the number of choices which may be made in response to a given criterion and of ranking and weighting their choices is likely to indicate close friendship groups. White (1966) and Northway (1964) support the view that choices should be weighted. The justification for weighting is that first choice selections tend to be much more stable than second and third choice. In this study three points were awarded for first choice, two points for second choice and one point for third choice.

Evans (1962) has suggested that :

"ideally the number of choices made by each individual should be unrestricted. Only in this way is it possible to identify positively the individuals to whom any one person is really indifferent and the individuals who are completely unchosen."

However, he goes on to say that :

"In practice, the difficulty of dealing with very long lists makes it expedient to restrict the number of choices"
1.

It was decided to use the unlimited choice method (described below as 'open choice') as well as the usual three-choice method. Thus girls had the opportunity to pick out those they specially liked but also those to whom they were not indifferent. Using two separate questions permitted special friendship groups to be plotted easily, while making clear which girls were really unpopular with the group.

One would have a still clearer picture of the acceptability of an individual if 'rejections' were asked for.

Northway (1967 edition) points out that:

"inviting one individual to positively reject other individuals may cause much resentment and comment in the group and for this reason and because "rejection scores were most peculiarly distributed statistically" this item has been deleted from most sociometric tests". 1.

Because of the possibility of producing ill-feeling in the group, before the programme began, this item was not included in the present study with Schools A and B. At the end of the programme with School B the writer felt she would like more information about pupils who were 'unchosen' and the girls from School C were asked to say with whom they would not like to work. It was found that some girls were not chosen, even in response to an unlimited choice question, but were also not actively rejected. Clearly the problem of the unchosen was different from the problem of the rejected individual. Some individuals were poorly chosen and strongly rejected, while others were well chosen and equally strongly rejected.

1. Northway (1967) P.7.

(b) Validity and Reliability of Sociometric tests

Evans (1962) states that:

"a sociometric test is designed to elicit the actual behaviour being studied and in so far as it does this it is a valid measure of that behaviour"

1.

If subjects are required to make choices for real situations which are to be acted upon, then choices are likely to be true choices.

Normal means of testing reliability also pose particular problems in sociometry. A sociometric test can only be compared with one given to the same group. Groups even in school, are not static; children leave and others join the class.

However Evans reported that Morgan (1951), Bonney (1955) and others showed that although changes in particular friendship patterns occur, the general acceptability of children relative one to another remains much the same; that is a pupil who is popular with his class mates in school is likely to be popular in a group in camp whether or not the group is made up of the same individuals, while a pupil unpopular in one setting is likely to be unpopular with others of his own age in another setting.

"The conclusion drawn is that it is difficult to change the impression a child makes upon his own group, and that the child who is maladjusted in one group is likely to be so in another also"

2.

Lindsey and Byrne (1968) showed a positive correlation between sociometric status and personal adjustment. Those who receive few choices in a sociometric test usually make low scores in tests of social adjustment.

1. Evans (1962) p.16

2. Ibid. p.41.

It seems reasonable therefore to suggest that improved sociometric status by those poorly chosen may be used as an indication of improved social adjustment.

(c) The use of sociometric tests in the present study

The present study examines the following propositions:

1. Sociometric status would remain relatively constant over a period of two school terms (and three terms in the case of School B) but that individuals who made good progress in dance would be more highly chosen in the second sociometric test than in the first.
2. Moreno (1953) stated that the constant trend in sociometric tests was that those who were awarded most choices in such a test would receive still more in choices in subsequent tests, while those who were poorly chosen in the original test would receive still fewer choices in subsequent tests. This 'trend' he called the 'Sociodynamic Law'.

It is therefore proposed that in the case of the control group of this study the sociodynamic law would be seen to function and would produce more girls who were unchosen or rejected in the second test.

It was, however, proposed that the use of small group work in the dance programme would lead to a reversal of this trend in each of the dance groups which would in turn lead to fewer girls unchosen or rejected.

(i) Presentation

It is the normal pattern to give a sociometric test to all members of the group at once. It is important that all members of the group should be present for appraisal, since there is a proven risk that children given the test individually will only consider a limited number of the group. Many of the children included in this research had difficulty in reading and writing. Consequently the tests were very carefully introduced by the researcher with the class teacher present to iron out any difficulties of interpretation.

The purpose of the test was explained as "helping me to plan groups for the dance lessons". The need for secrecy so that "no-one will feel hurt at your choice" was emphasised. In order to convince pupils that the papers were confidential and to encourage them to treat the test seriously, each received an envelope in which they personally sealed their 'test' sheet.

While the girls were filling in their 'test' sheets a number of students and the writer moved amongst them helping where necessary. The 'test' sheets included a list of all girls in the class in order to keep the names in front of the pupils and to prevent them asking how to spell someone's name.

An example of the 'test' sheet is included in Appendix 2.

Two pupils in School C control group and one in School A were absent when the first test was given and one in School A and one in the experimental group were absent for the second test. All these pupils completed the test with their respective class teacher within two days.

The test was given in the same manner before and after the experimental period. In school B a third test was administered after a further term of dance taken by the girls' own class teacher.

Results of Sociometric Test

The results of each test are presented on matrices in Appendix 2. In the 'open' or 'unlimited' choice version of the test the number of choices received by each pupil was totalled and the pupil receiving the greatest number of choices was ranked 1, the one receiving the next highest number of choices was ranked 2 and so on. Where there were ties, then the average rank was given e.g. two pupils tying for third place were each ranked 3.5.

Note Girls are identified in all subsequent discussion by a number based on their position in this first 'open choice' form of the test. The number is preceded by the initial given to the school e.g. A1 is used to identify the girl from School A who ranked 1st in the first open choice form of the test.

In the 'limited choice' or 'weighted' version of the test where each pupil was required to make three choices in rank order, these choices were weighted as previously discussed. The weighted scores were then totalled for each individual and the appropriate rank given as in the 'open choice' version of the test.

In School C, the only school where 'rejections' were asked for, these were entered upon the 'weighted choice' matrices.

One pupil in School C (Experimental group) made only two choices in the second test. This was undesirable statistically but mild pressure produced signs of distress so this pupil's paper was accepted in an incomplete form.

(ii) Rank Order

Hypothesis 1

That sociometric ranking remained relatively constant
over

- (a) a period of two school terms
- and (b) over one school year (in the case of School B only).

In order to examine the constancy of ranking, the results of the tests were subject to the Spearman Rank Order Correlation Co-efficient. (Examples of method of calculation together with the raw scores are given in the appendix).

*- Table 16 gives the comparative rank order for the Control group. Results in open and weighted tests were similar and showed rank order for this group was relatively constant.

Table 16a.SOCIOMETRIC TESTCONTROL GROUP - RANK ORDER CORRELATIONOpen Choice

<u>Name</u>	<u>Difference between ranks in Test 1 & 2</u>	<u>D²</u>
D1	9	81.00
D2	8.5	72.25
D3	.5	.25
D4	4	16.00
D5	2	4.00
D6	2.5	6.25
D7	5	0
D8	6.5	42.25
D9	1.5	2.25
D10	1.5	2.25
D11	1	1.00
D12	8.5	72.25
D13	4.5	20.25
D14	3.5	12.25
D15	1.5	2.25
D16	2.5	6.25
D17	3.5	12.25
D18	3.5	12.25
D19	1.5	2.25
D20	0	0

$$\sum \underline{\underline{307.50}}$$

Spearman Rank order correlation co-efficient = + .76 when corrected for ties.

*- Garrett (1960) gives this correlation co-efficient as significant at .01 level of significance.

* TABLE 16b.Weighted Choice

<u>Name</u>	<u>Difference between ranks</u>	<u>d^2</u>
D1	3	9
D2	7.5	56.25
D3	1	1
D4	5	25
D5	5	25
D6	8.5	72.25
D7	2.5	6.25
D8	2.5	6.25
D9	3	9
D10	0	0
D11	1.5	2.25
D12	6.5	42.25
D13	.5	.25
D14	2	4
D15	3.5	12.25
D16	0	0
D17	2	4
D18	4.5	20.25
D19	4.5	20.25
D20	2	4
		<u>Σ 319.50</u>

Rank order correlation co-efficient = + .75 when corrected for ties.

* This is significant at .01 level of significance (Garrett 1968)

Dance Groups

Tables 17 and 18 showed that based on the open choice version of the sociometric tests the groups from Schools A and B had similar results to those of the Control group, but results (after 2 terms) show a lower correlation in the weighted scores.

When looking at the results from School A it is important to bear in mind that, unlike the other groups, this one was not drawn from one class. It will be remembered that this group came together only for Physical Education, Domestic Science, and Needlework. For all other lessons they were divided according to age and worked alongside boys of their own age.

Breaking down this group into age groups (as arranged for classroom lessons) showed that sociometric rank was not related to chronological age but the girl receiving most choices came from the largest age group i.e. A1 was one of a group of 10 girls from the same class (See below). However, those ranking 2nd and 3rd came from the smallest age group while those receiving fewest choices came, like the girl ranked 1st, from the largest age group.

		<u>Rank in 1st open test</u>
Top class	-	4th, 6th, 7th, 12th, 15th, 17th.
Middle class	-	2nd, 3rd, 11th, 13th.
Bottom Class		
i.e. youngest age	-	1st, 5th, 8th, 9th, 10th, 14th,
group		16th, 18th, 19th, 20th.

The balance did not change greatly in the second test.

When close-knit friendship groups, as shown in mutual choices, are examined later it will be seen that these groups were almost entirely age-group based. Participation in dance did not appear to have much effect upon these groups.

* Table 17aSchool A Sociometric TestsOpen ChoiceCorrelation of Rankings

<u>Name</u>	<u>Difference between Tests 1 & 2</u>	<u>D²</u>
A1	- 7.5	56.25
A2	- 1	1
A3	+ 1.5	2.25
A4	- 2.0	4.00
A5	0	0
A6	+ 2.5	6.25
A7	- 1.5	2.25
A8	- 5	25
A9	+ .5	.25
A10	- 7.5	56.25
A11	- 2.5	6.25
A12	- 2.5	6.25
A13	- 2.5	6.25
A14	+ 6.5	42.25
A15	- 2.5	6.25
A16	+ 3.5	12.25
A17	+ 4.5	20.25
A18	+ 6.5	42.25
A19	- 2.0	4.00
A20	+ 1	1.00
		<hr/>
		Σ 300.50

Rank order correlation co-efficient = + .76 Corrected for ties.

* This is significant at .01 level of significance (Garrett 1968)

* Table 17bSchool A Sociometric TestsWeighted ScoresCorrelation of Rankings.

<u>Name</u>	<u>Difference between Test 1 and 2</u>	<u>D₂</u>
A1	- 17.0	289.
A2	- 4.5	20.25
A3	- .5	.25
A4	+ 2.5	6.25
A5	- 3.5	12.25
A6	+ 4.5	20.25
A7	+ 1.5	2.25
A8	+ 4.0	16.00
A9	+ 6.5	42.25
A10	+ 2.5	6.25
A11	+ .5	.25
A12	- 3.0	9.00
A13	- 4.0	16.00
A14	- 1.0	1.00
A15	+ 5.5	30.25
A16	- 2.5	6.25
A17	- 1.0	1.00
A18	+ 2.0	4.00
A19	+ 5	25.00
A20	+ 2.5	6.25
		<hr/> Σ 524.00

Rank order correlation co-efficient = + .60 corrected for ties.

* This is significant at .01 level of significance (Garrett 1968)

Table 18 showed that rank order changed considerably when tests given at longer intervals were compared. The correlation between tests one and three was negligible. This comparison was only available for School B and it was impossible to know whether the low correlation was simply the result of the longer time span or the imminent approach of school leaving (one girl, B19, had in fact left the group) or the result of the longer dance programme. The former seems most likely. It was not possible to have a third test with the Control group in order to compare the results of School B, because the Control group was broken up after two terms. The approach of school leaving, for some pupils in the other 'mixed-age' group (School A) seemed to have no effect upon the correlation of rank order. It is interesting to note that School C's experimental group which, like School B, had a rather more substantial dance programme than School A, also showed relatively low correlation of rank order. One outside known factor which may have been responsible for B1's descent from 1st place to tied 15th place was her selection at the end of term two to go with a swimming club on a visit to France during the Easter holidays. It is possible that this experience set her apart from the rest of her class and thus led to her drop from favour. No other change in situation was known, except that, from being outstanding in dance early in the programme, B1 became just one of a group as others improved fairly spectacularly. However this would suggest a degree of objectivity in selection of partners for dance which did not otherwise appear to be present. There were no other known outside factors influencing the status of other members of the group.

* Table 18a.

School B Sociometric TestsOpen ChoiceCorrelation of Rankings.

<u>Name</u>	<u>D. betwn. T1&2</u>	<u>D²</u>	<u>D. betwn. T2&3</u>	<u>D²</u>	<u>D. betwn. 1&3</u>	<u>D²</u>
B1	- 1.5	2.25	- 13	169.00	- 14.5	210.25
B2	- 3	9.00	+ .5	.25	+ 2.5	6.25
B3	+ 2	4.00	- 2	4.00	0	0
B4	.5	.25	- 4	16.00	- 4.5	20.25
B5	+ 2	4.00	+ 1	1.00	+ 3	9.00
B6	- 6	36.00	- 3.5	12.25	- 9.5	90.25
B7	- .5	.25	+ 3	9.00	+ 2.5	6.25
B8	- 4	16.00	- 7	49	- 11	121.00
B9	+ 4	16.00	- 4	16.00	0	0
B10	- 9.5	90.25	+ 9.5	90.25	0	0
B11	- 3	9.00	- 3.5	12.25	- 6.5	42.25
B12	- 6	36.00	+ 9.5	90.25	+ 3.5	12.25
B13	+ 5	25.00	- 8	16.00	- 3	9.00
B14	+ 3	9.00	+ 0.5	.25	+ 3.5	12.25
B15	- 3	9.00	0	0	- 3	9.00
B16	+ 1	1.00	+ 6.5	42.25	+ 7.5	56.25
B17	+ 1	1.00	+ 6.5	42.25	+ 7.5	56.25
B18	+ 7	49.00	+ 8.0	64.00	+15	225.00
B19	- .5	.25	-	-	-	-
B20	+ 4	16.00	0	0	+ 4	16.00

$$\sum \underline{\underline{333.25}}$$

$$\sum \underline{\underline{634.00}}$$

$$\sum \underline{\underline{901.50}}$$

R = + .75 corrected for ties.

If no. 19⁺ were not included in calculation
R = + .72

+ Left school before term three.

Significant at .01 level.

R = + .44 corrected for ties.

Not significant at .05 level.

R = @ .25 corrected for ties.

Not significant at .05 level
(Garrett 1968)

* x

Weighted Scores

Correlation of Ranking

<u>Name</u>	<u>D. betwn T1&2</u>	<u>D²</u>	<u>D. betwn T2&3</u>	<u>D²</u>	<u>D. betwn. T1&3</u>	<u>D²</u>
B1	+ 4	16.00	- 3	9	+ 1	1.00
B2	+ 3.5	12.25	+ 3.5	12.25	+ 7	49.00
B3	- 1	1.00	0	0	- 1	1.00
B4	0	0	- 2	4.00	- 2	4.00
B5	+ 1	1.00	0	0	+ 1	1.00
B6	0	0	+ 3.5	12.25	+ 3.5	12.25
B7	+ 1.5	2.25	+ 8.5	72.25	+10	100.00
B8	- 3.5	12.25	-12	144.00	-15.5	240.25
B9	+ 4	16.00	-11	121.00	- 7	49.00
B10	- 3	9.00	+ 4.5	20.25	+ 1.5	2.25
B11	-14	196.00	+ 3	9.00	-11	121.00
B12	- 1.5	2.25	+ 6.5	42.25	+ 5	25.00
B13	- 1.5	2.25	- 5.5	30.25	- 7	49.00
B14	- 1.5	2.25	-10	100.00	-11.5	132.25
B15	- 6	36.00	+ 1.5	2.25	- 4.5	20.25
B16	+ 6.5	42.25	0	0	+ 6.5	42.25
B17	+10	100.00	0	0	+10	100.00
B18	0	0	+12.5	156.25	+12.5	156.25
B19	0	0	-	-	-	-
B20	+ 2	4.00	0	0	+ 2	4.00
		<u>Σ 454.75</u>		<u>Σ 735.00</u>		<u>Σ 1109.75</u>

R.O.C.C. = + .65
corrected for ties.

R.O.C.C. = + .43
corrected for ties

R.O.C.C. = + .12
corrected for ties.

* Significant at .01
level.

Not significant
at .05 level.

Not significant
at .05 level
(Garrett 1958)

Table 19 gives the results for School C. (Experimental Group).

Again the correlation of ranking was higher in the open choice version of the test than in the weighted score version, but both were lower than all the other groups (if School B's third test is ignored). The reason for this was a matter of speculation. This group consisted of younger girls than either of the other dance groups but was parallel in this to the control group, and so it was unlikely that age was the reason for the difference. Another possibility was that the more substantial dance programme received by this group caused more changes in the status quo.

* Table 18a.SOCIOMETRIC TESTSchool C. Experimental Class.Rank Order CorrelationOpen Choice

<u>Name</u>	<u>Difference between Test 1 & 2</u>	<u>D²</u>
C1	.5	.25
C2	3.5	12.25
C3	5	25
C4	1	1
C5	1	1
C6	6	36
C7	6	36
C8	1	1
C9	3.5	12.25
C10	2	4
C11	.5	.25
C12	6	36
C13	2	4
C14	2.5	6.25
C15	1.5	2.25
C16	8	64
		<u>Σ 241.50</u>

Rank order correlation co-efficient = + .65 corrected
for ties.

* Significant at .01 level (Garrett 1960)

Table 19b.Weighted Choice

<u>Name</u>	<u>Rank Difference</u>	<u>D²</u>
C1	1	1
C2	1.5	2.25
C3	11.5	132.25
C4	5.5	30.25
C5	6	36
C6	1	1
C7	1.5	2.25
C8	4.5	20.25
C9	2.5	6.25
C10	1	1
C11	3	9
C12	8	64
C13	.5	.25
C14	.5	.25
C15	2.5	6.25
C16	8.5	72.25
		<u>Σ 384.50</u>

Rank order correlation co-efficient

= + .42 corrected for ties.

* Not significant at .05 level of significance.

Table 20 gives a summary of the results of this section.

Table 20.

SOCIOMETRIC TESTS

SUMMARY OF RANK ORDER CORRELATION
CO-EFFICIENTS

<u>CONTROL GROUP</u>	Open Choice	+ .76	
	Weighted Scores	+ .75	
<u>SCHOOL A</u>	Open Choice	+ .76	
	Weighted Scores	+ .60	
<u>SCHOOL B</u>	Open Choice	+ .75	tests 1 & 2
	Open Choice	+ .44	tests 2 & 3
	Open Choice	+ .29	tests 1 & 3
	Weighted Scores	+ .65	tests 1 & 2
	Weighted Scores	+ .43	tests 2 & 3
	Weighted Scores	+ .12	tests 1 & 3
SCHOOL C (E)	Open Choice	+ .65	
	Weighted Scores	+ .42	

Garrett (1968) gives the following levels of significance for the above r_s values.

<u>CONTROL GROUP</u>	Both versions of test significant at .01 level.
<u>SCHOOL A</u>	Both versions of test significant at .01 level.
<u>SCHOOL B</u>	Open choice & weighted scores correlation between Tests 1 and 2 significant at .01 level. All correlations involving test 3 <u>not</u> significant at .05 level.
<u>SCHOOL C</u>	Open choice version significant at .01 level. Weighted scores <u>not</u> significant at .05 level.

Rank Order and I.Q.

Before leaving consideration of rank order the relationship between that and I.Q. was considered.

Oliver (1960) showed that sociometric status was not significantly related to I.Q. In this study the relatively small range in I.Q. made it difficult to establish any relationship.

The rank order correlation co-efficient (Spearman's test) between sociometric rank and the rank order of I.Q.s was established for the open choice test for each group. This is given in Table 21.

Table 21.

<u>RANK ORDER CORRELATION CO-EFFICIENT^{1.} FOR</u>			<u>Statistical</u>
<u>SOCIOMETRIC RANK^{2.} AND I.Q.^{3.}</u>			
			<u>.05 level.</u>
<u>CONTROL GROUP</u>	1st Occasion	+ .62	Statistically significant.
	2nd Occasion	+ .56	Not significant.
<u>SCHOOL A.</u>	1st Occasion	+ .65	Statistically significant.
	2nd Occasion	+ .61	" " "
<u>SCHOOL B</u>	1st Occasion	+ .43	Not significant
	2nd Occasion	+ .74	Statistically significant.
	3rd Occasion	+ .42	Not significant.
<u>SCHOOL C</u> (Experimental)	1st Occasion	+ .57	Not significant.
	2nd Occasion	+ .30	Not significant.

1. Spearman. Corrected for ties.
2. Open Choice version of test.
3. I.Q. as recorded by school psychologist in September of the year in which the programme took place.

As can be seen, there was no consistent picture and no conclusion could be drawn. There did, however, appear to be some relationship between the possession of a particularly low intelligence (as measured by I.Q. test) in relation to the rest of the group and an individual's sociometric status.

Control group : the girl with the lowest I.Q. (51) was ranked twentieth in both tests and was strongly rejected in the second test.

School A: the girl with the lowest I.Q. (43) was chosen by only one other in the first test and ranked nineteenth out of twenty but in the second test she rose to eleventh position.

School B : the girl with the Lowest I.Q. (46) was rather surprisingly ranked eighth in the first test but she dropped to twelfth in the second test and was unchosen in the third test.

School C : (Experimental Group) : the girls with the two lowest I.Q.s (55 and 58) were ranked 13.5 and fifteenth(out of sixteen girls,) in the first test and were ranked eleventh and 13.5 respectively in the second test. Both girls received five rejections in the first test though only one of them was rejected by one other in the second test.

As can be seen by reference to the sociogrammes later in this chapter these girls tended to be chosen by others of low sociometric status. These also tended to be individuals of below average intelligence. Girls with higher than average I.Q. tended to be above the 50 percentile in sociometric status, but were not necessarily rated very highly. For example the girl in the control group with the highest rated I.Q. (75) came eighth in test one but rose to rank first in test two. The girl with the highest I.Q. (78) in School A ranked third in test one and first in test two. On the other hand the girl in School B with the highest I.Q. (71) ranked ninth in test one, fifth in test

two and ninth again in test three while the girl in School C with the highest I.Q. (80) ranked eleventh in both tests.

The latter two girls had considerable emotional problems which perhaps affected their acceptability to their classmates.

However neither received any rejections.

These results can neither confirm nor contradict the findings of Oliver.

Close Friendships

In Table 20 we noted that the correlation co-efficient for the open choice version was higher than that for the weighted score version of the sociometric tests, except in the case of the control groups where the co-efficients were almost identical. This, contrary to what Northway (1967) suggested, was usual. She suggested close friendship groups were always more stable than 'looser' groups and that first choices were more stable than third choices. This is the justification for 'weighting' choices in the manner used in this and other studies (e.g. White).

The stability of close friendships was examined by consideration of the number of changes taking place in the weighted score version of the test and by examination of sociogrammes.

The changes taking place in the version of the test where a limit of three was placed upon choices to be made, are found in Table 22.

There were many changes in all groups but these were very largely changes of position amongst the three, rather than changes which brought in 'new choices' from outside the original three.

Table 22.

NUMBER OF GIRLS CHANGING THEIR CHOSEN PARTNERS

	<u>CONTROL GROUP</u>		<u>SCHOOL A</u>		<u>SCHOOL B</u>		<u>SCHOOL C (E)</u>	
	N = 20		N = 20		N = 20		N = 16	
	x ¹	y ²	x ¹	y ²	x ¹	y ²	x ¹	y ²
1st choice	16	6	10	2	11	5	9	6
2nd choice	14	8	14	5	12	3	11	3
3rd choice	15	6	15	14	15	7	11	7
Total	44	20	39	21	38	15	31	16

SCHOOL B ONLY

	<u>2nd & 3rd Test</u>		<u>1st & 3rd Test</u>	
	x ¹	y ²	x ¹	y ²
1st choice	10	7	13	6
2nd choice	14	6	14	4
3rd choice	12	6	14	6
Total	36	19	41	16

1 x = Number of changes taking place.

2 y = Number of changes outside the original three.

There was little difference between the number of first and third choice changes. Only School A, which consisted of clear sub-groups based on age, showed the expected difference in the number 'brought in from outside the original 3' to stand as first choice and third choice. Only two of the ten changes in first choice came from outside the original three while fourteen of the fifteen changes in third place did so.

Though the 'limited choice' version of a sociometric test is supposed to show more effectively 'close friendships' this can only be true if such choices are reciprocated. That is, while the test will show who an individual wishes to be with, only an examination of mutual choices can show what close friendship groups do in fact exist. For example, in test 1, B3 and B5 were both chosen by four others and had a weighted score of ten. This gave them both a rank of two. Yet an examination of 'mutual choices' showed that whereas all B3's choices were reciprocated and she was a member of a very closely-knit group, B5 made only one choice which was reciprocated and was not a member of a close-knit group.

An examination of sociograms based on mutual choices showed this more clearly. The sociograms were drawn on transparent paper in order that changes in groups could be clearly seen.

In the case of School A an extra sheet was provided showing which class an individual was in for classroom lessons. This showed how closely friendship groups were based on these subgroups.

(See pages 142 - 144).

Comments on Sociograms

Control Groups

The sociogram illustrating the weighted score version of test 1 showed few mutual choices.^{1.} D8, 9 and 12 made 'typical' triangular group with D6 as an attachment. D3, 4 and 5 formed a similar group with D7 attached. A more complex group of a double triangle was made up by D1, 2, 10 and 11. D19 and D13 made a reciprocal choice but six other girls made no choices which were reciprocated. This suggested a very unstable group, since those without close friends were likely to be rather insecure.

The sociogram illustrating test 2 showed a similar pattern of mutual choices. There were a few changes in the position of individuals 'attached' to one member of a group, but the three basic triangular relationships remained.

The red lines on these sociograms showed a rejection of one girl by another, with the arrow showing the direction of 'negative' choice. In test 1 D20 was already the focus in some 'rejections', four girls refusing to consider her as a partner but in test 2 she became very much the 'star' rejection with all but six girls naming her undesirable as a partner.

Although D20 was strongly disliked she was not 'unchosen', for in the 'open choice' version of both tests she received three votes, though all from girls of low sociometric status. D20 will be considered in a little more detail later in this chapter. For the present, consideration is limited to changes of pattern in the group. Four other girls were rejected in test 1 but in all but one case the 'negative' vote was from an individual who herself made no reciprocal choices. The situation changes in test 2; the sociogram showed members of friendship groups

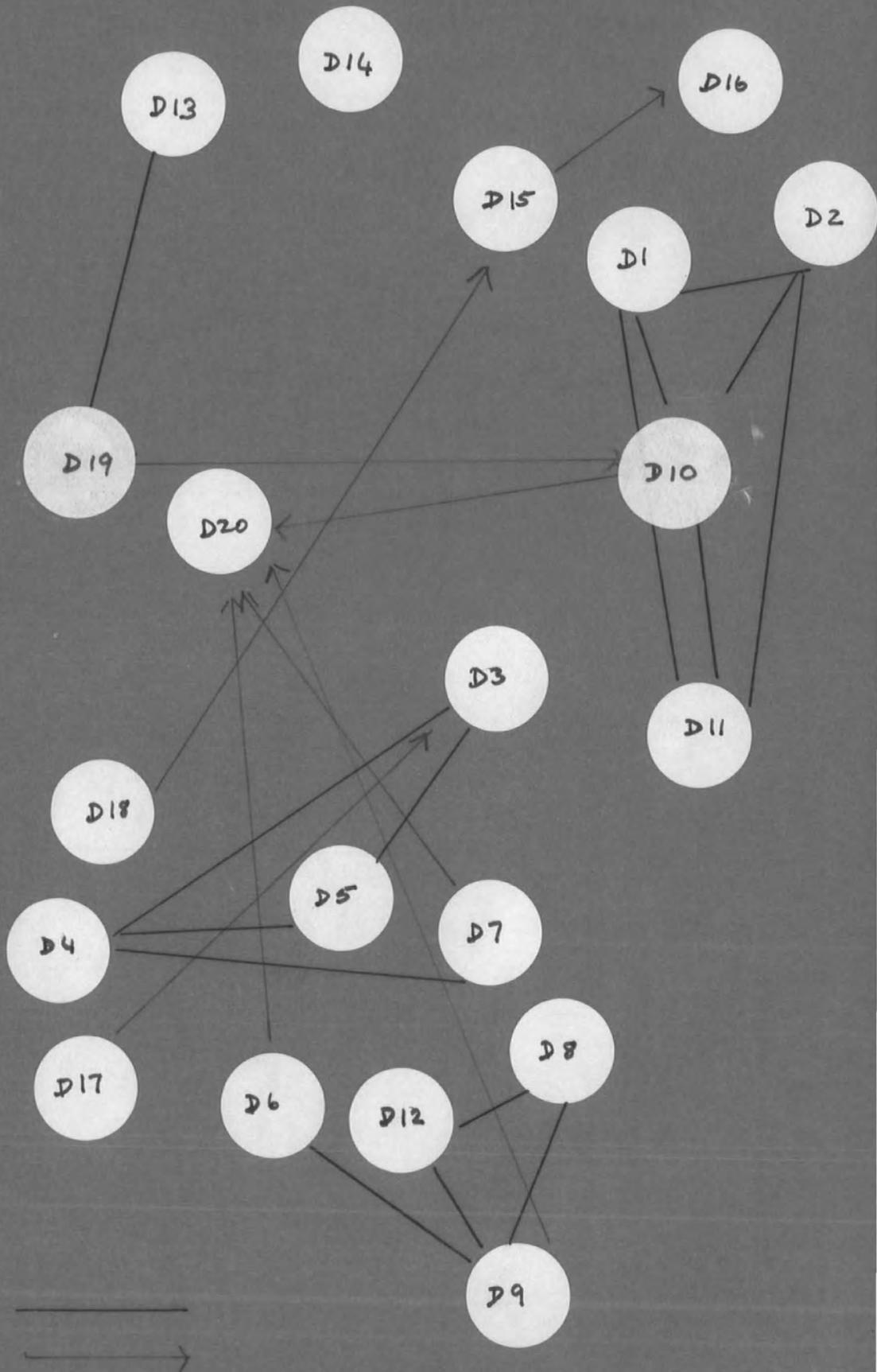
1. See pages 139 & 140.

tended to share a mutual dislike. The members of group 'D1, D2, D10' all rejected D16, while the members of group 'D8, D9 and D12' all rejected D17. It is worth noting that apart from D4 who was rejected by two others (one, a member of a trio of which the other two shared reciprocal choices with D4) all those rejected in test 2 were of low sociometric status in the first test, i.e. D13, 14, 16, 17, 18, and 20. The changes between the two tests will be examined further later in the chapter. For the moment we are able to see from the sociograms that the control group had a small number of close friendship groups which largely persisted in test two, but 'outsiders' were more strongly rejected in the second test than the first.

Sociometric Test 1

Control Group. Weighted Scores

Mutuals and Rejects



Mutual Choices

Rejections.

School A

1.
Examination of the sociograms for tests 1 and 2 showed that as in the Control group there was less cohesion in the second test than in the first. The main friendship groups remained intact but A1 and 18 no longer had reciprocated choices and the link between two triangular groups through A2 and A3 was dissolved. It was particularly surprising that A1 a member of the largest 'age' sub group dropped from three reciprocated choices to none. There was no change in the way in which girls from different age-groups were linked. The fact that girls were shown without reciprocal choices in this test did not mean they were friendless, since, in the open choice version of the tests, all made reciprocated choices except A20. The sociograms showing mutual choices in the open choice version of the tests are given in Appendix 2. They showed that all groups became more interwoven in the second test.

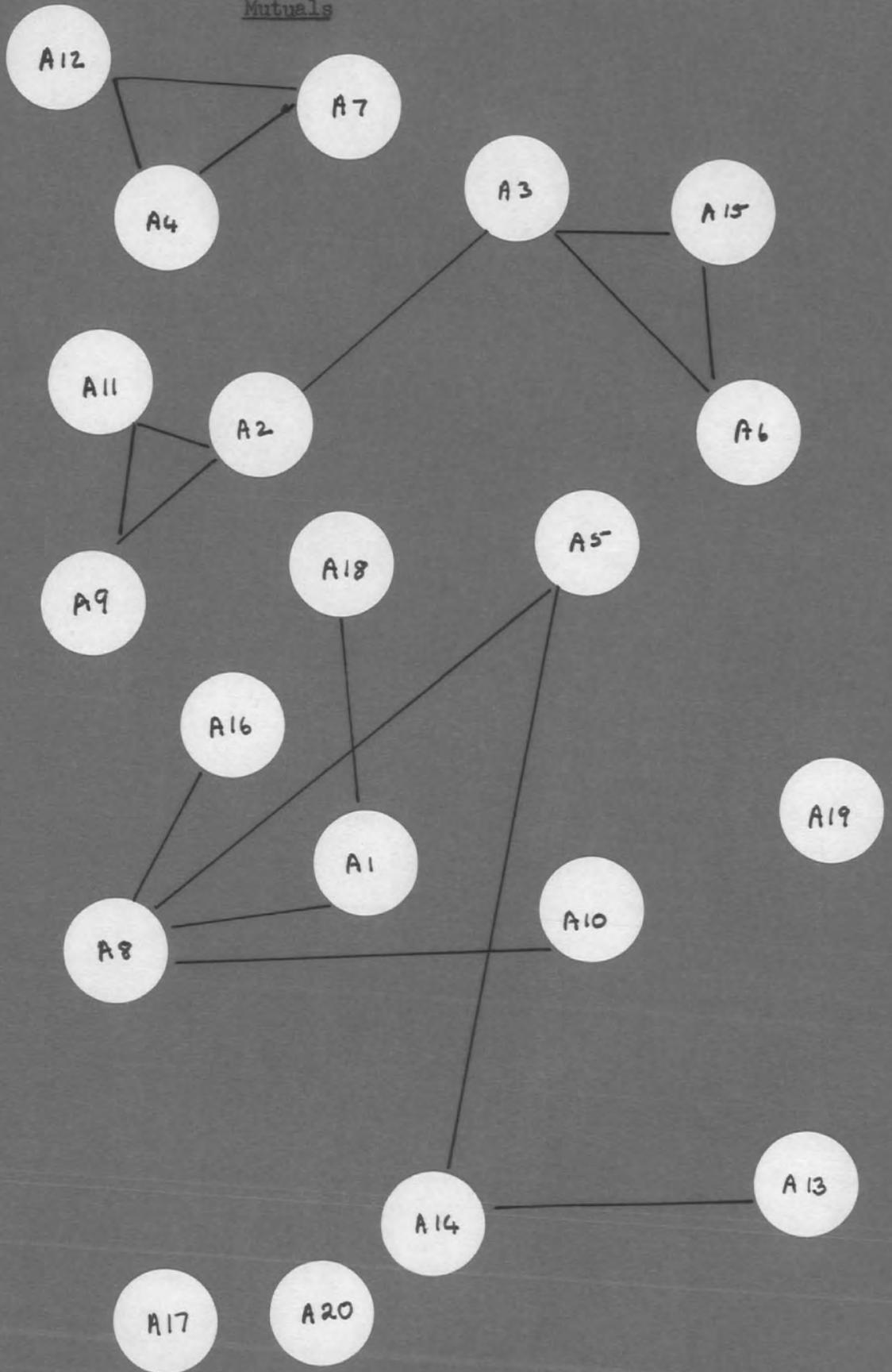
The addition of dance to the curriculum given to this group of girls from School A apparently had no effect upon close friendship groups.

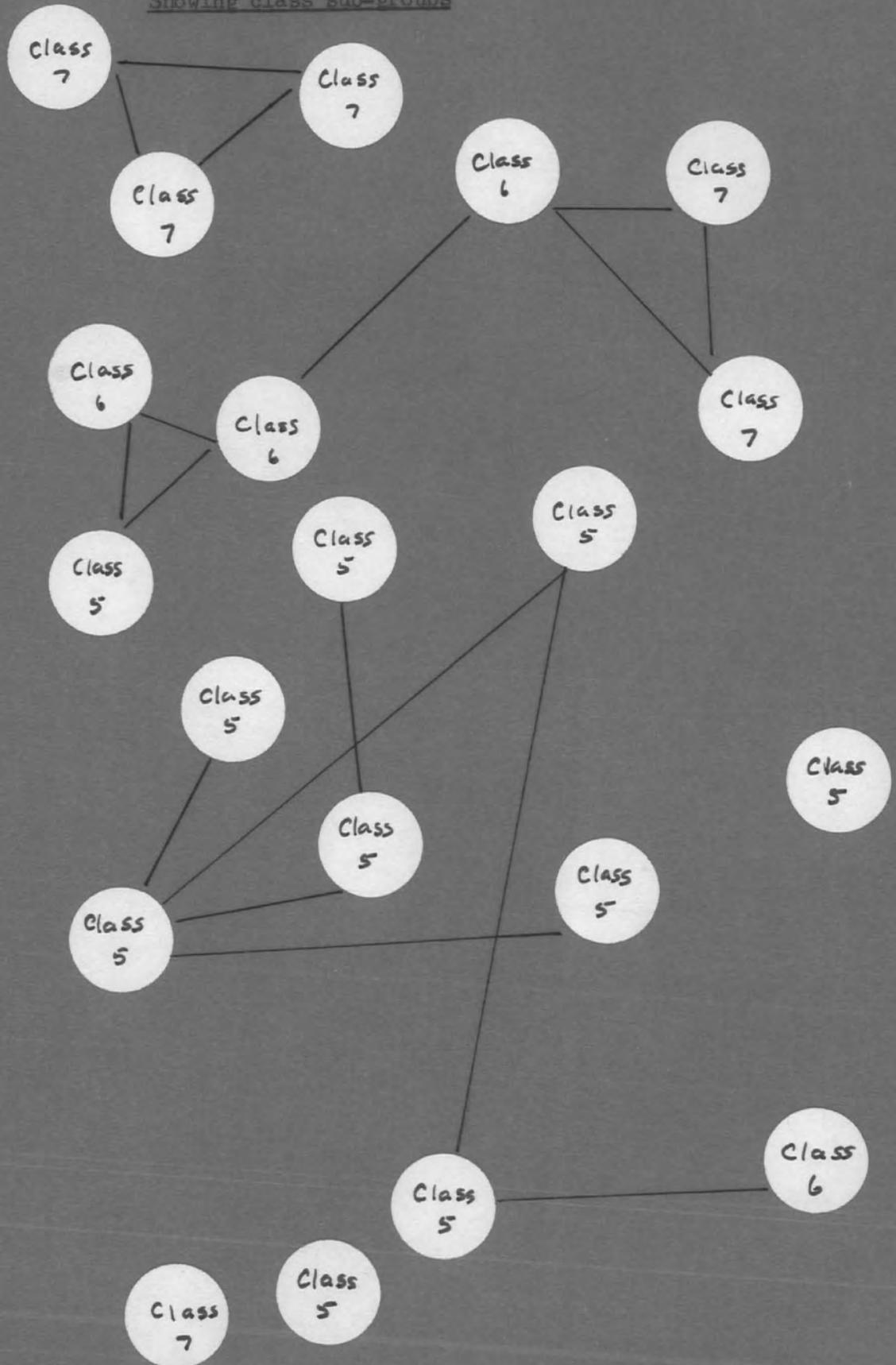
1. See pages 142 - 145.

Sociometric Test 1

School A. Weighted Scores

Mutuals

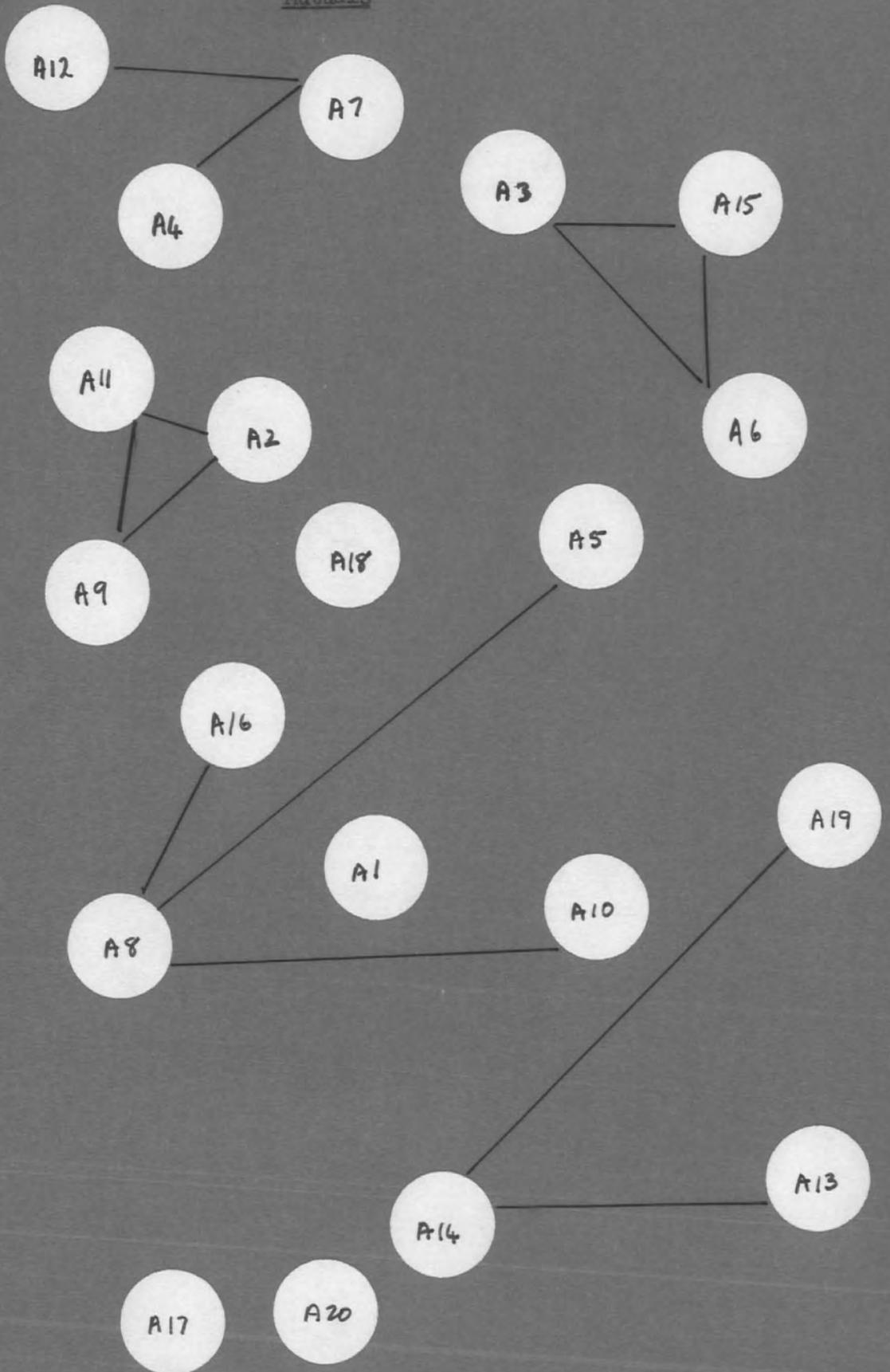


Sociometric Test 1School A. Weighted ScoresShowing class sub-groups

Sociometric Test 2

School A. Weighted Scores

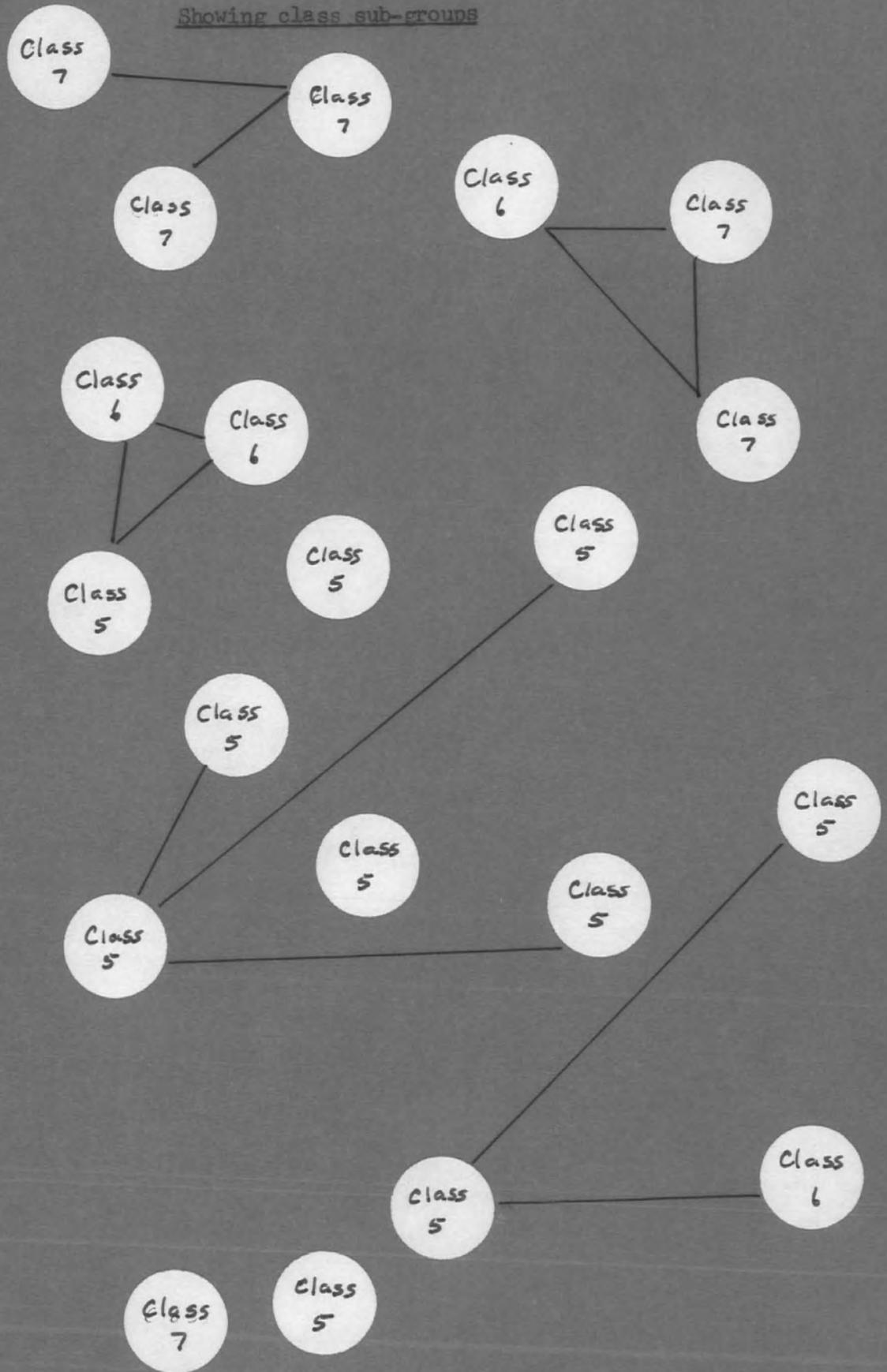
Mutuals



Sociometric Test 2

School A. Weighted Scores

Showing class sub-groups



School B

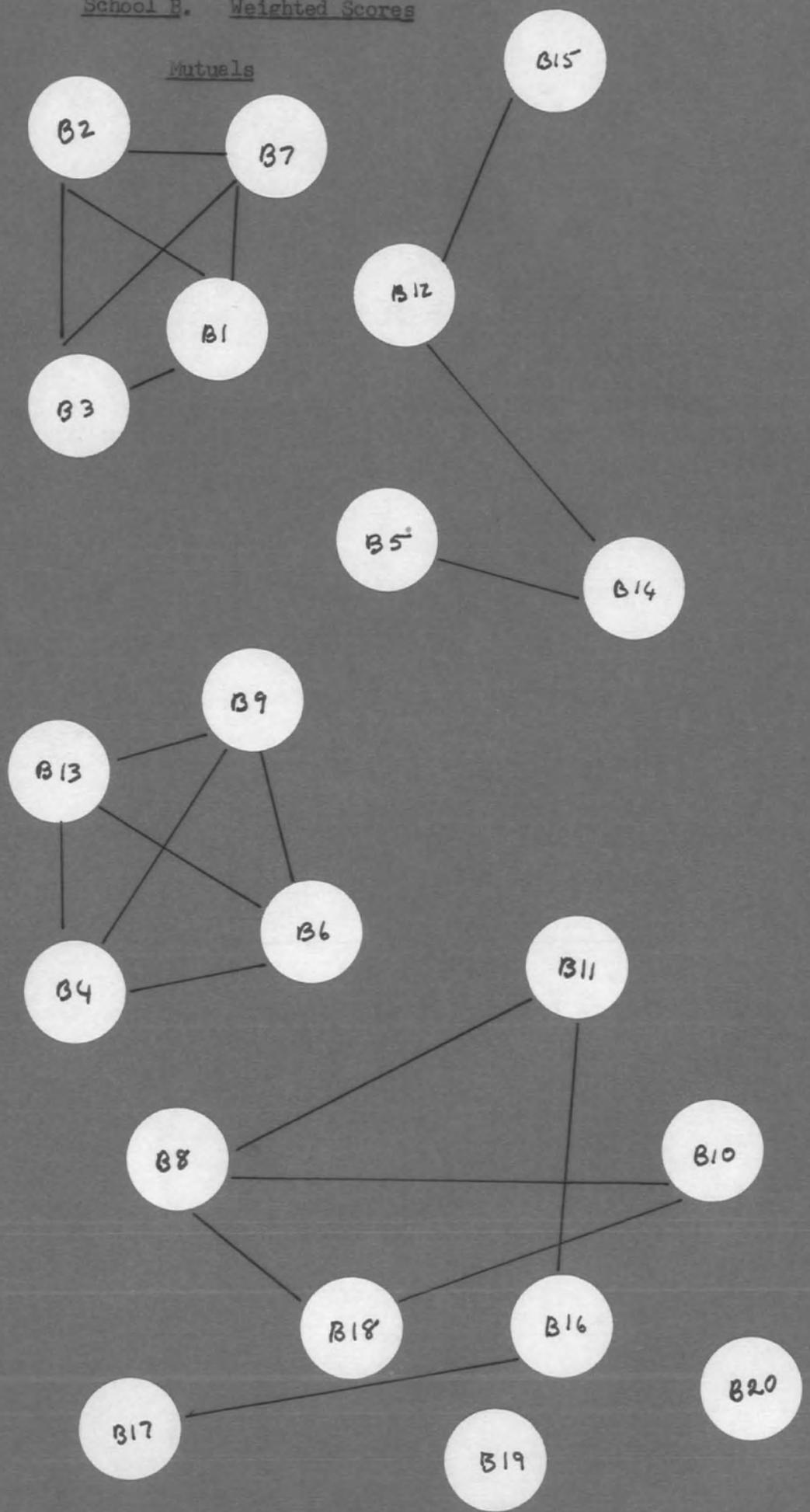
1.
These sociograms showed more close friendship groups in School B than in the control group. Groups were larger than in School A. One group of four girls each making three reciprocated choices in each test remained self-contained throughout while the other groups altered slightly as a result of fewer reciprocal choices. Test one showed two girls without a really close friend. These two, ranked 19 and 20 out of 20 subjects, chose one another in the second test, but B12 who had two reciprocated choices in test one had no reciprocated choices in test 2. One would not have expected the fact of B19 leaving to alter the friendship patterns much but in test 3, three subjects were without reciprocated choices and one large group had disintegrated. Thus again we see that the dance programme with the visiting teacher made no impact upon close friendship groups, and that after a further term of dance, in which group work continued to be emphasised, a further slight disintegration of friendship groups took place. As the school year (the last for some of the class) drew to a close the slight loosening of friendships was not unexpected.

1. See pages 147 - 149.

Sociometric Test 1

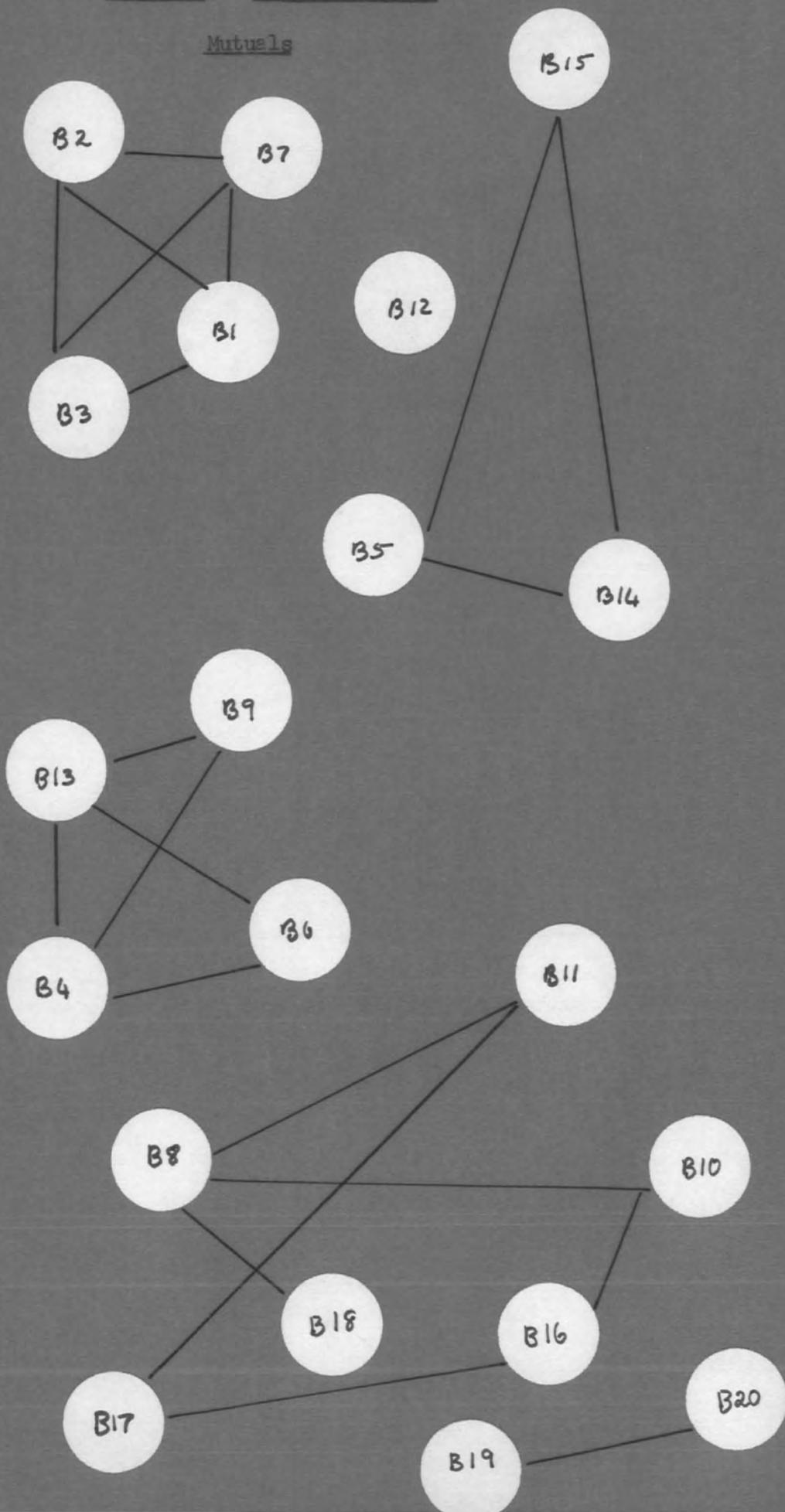
School B. Weighted Scores

Mutuals



Sociometric Test 2
School B. Weighted Scores

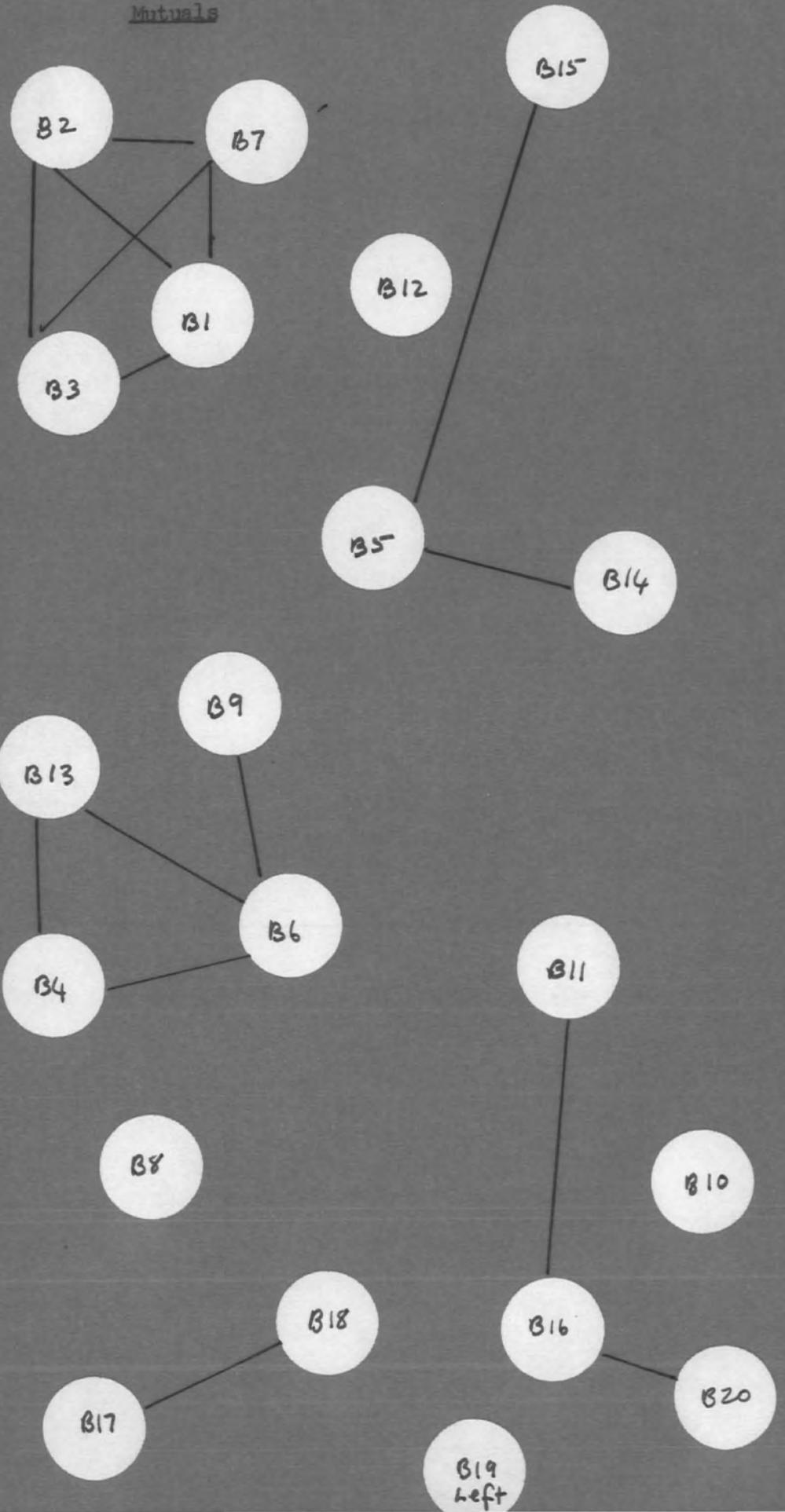
Mutuals



Sociometric Test 3

School B. Weighted Scores

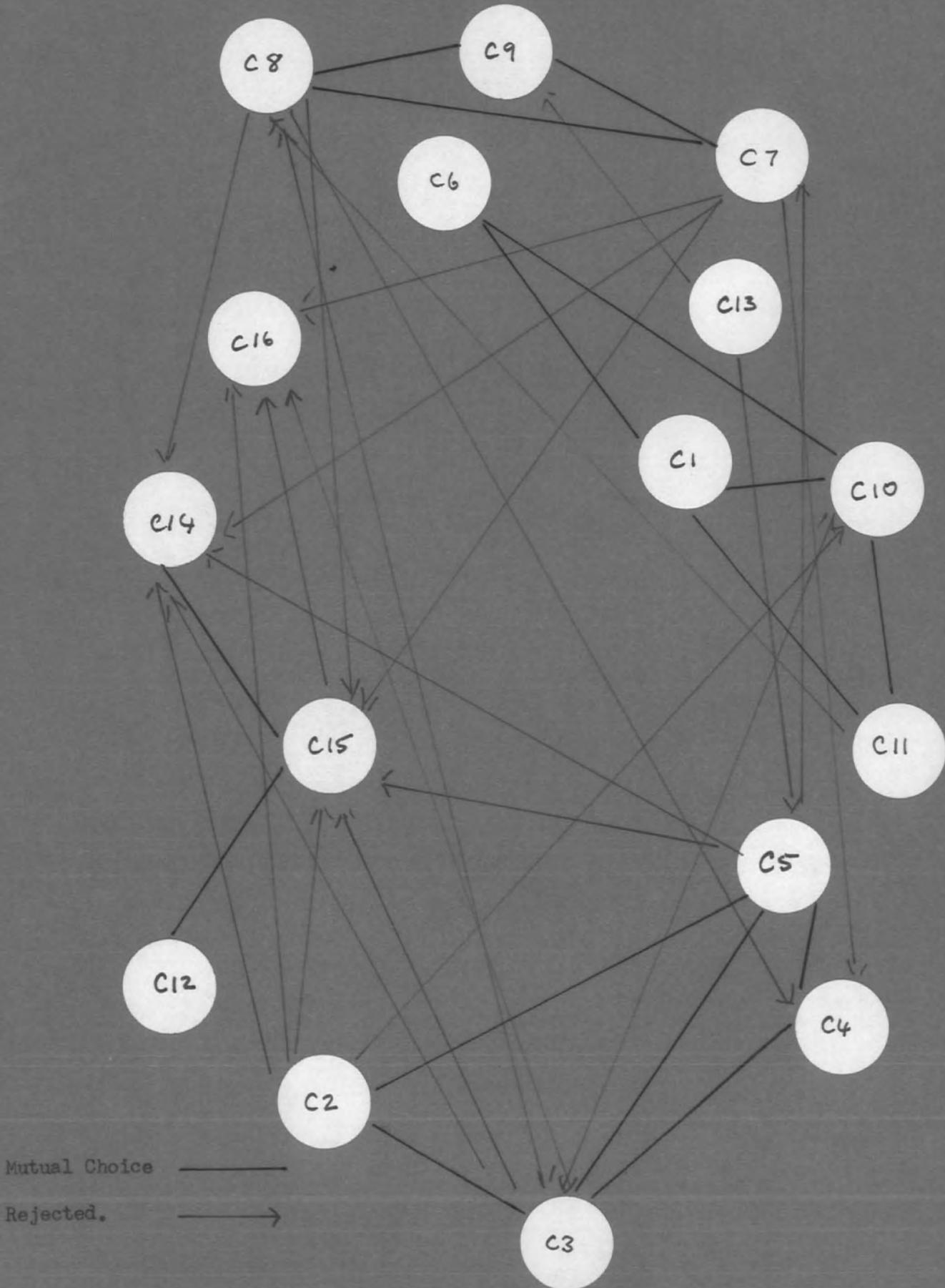
Mutuals



School C Experimental Group^{1.}

The sociogram of test 1 showed four quite distinct sub-groups, two individuals without a close friend, and a large number of rejections. The rejections will be further analysed later in the chapter. Although, as noted earlier, a large number of 'negative choices' were aimed at the two slow learners plus one other - girls ranked 14, 15 and 16 out of a list of 16 subjects - there was no consistent pattern of members of a friendship group being against one individual as found in the Control Group (test 2). Rather here, rejections came from right across the board and lines of rejection crossed one another and lines indicating mutual choices. The sociogram of test 2 showed two of the original sub-groups linked together but C13 was still without a close friend. (She will be discussed in some detail later in the study). The number of rejections had greatly declined; now C9 (also to be discussed in detail later) became the 'star reject' reciprocating one of the rejections. Only two other negative choices were made. Again the dance programme made no impact upon close friendships but possibly had some effect upon the number and pattern of distribution of negative choices.

1. See pages 151 - 152.

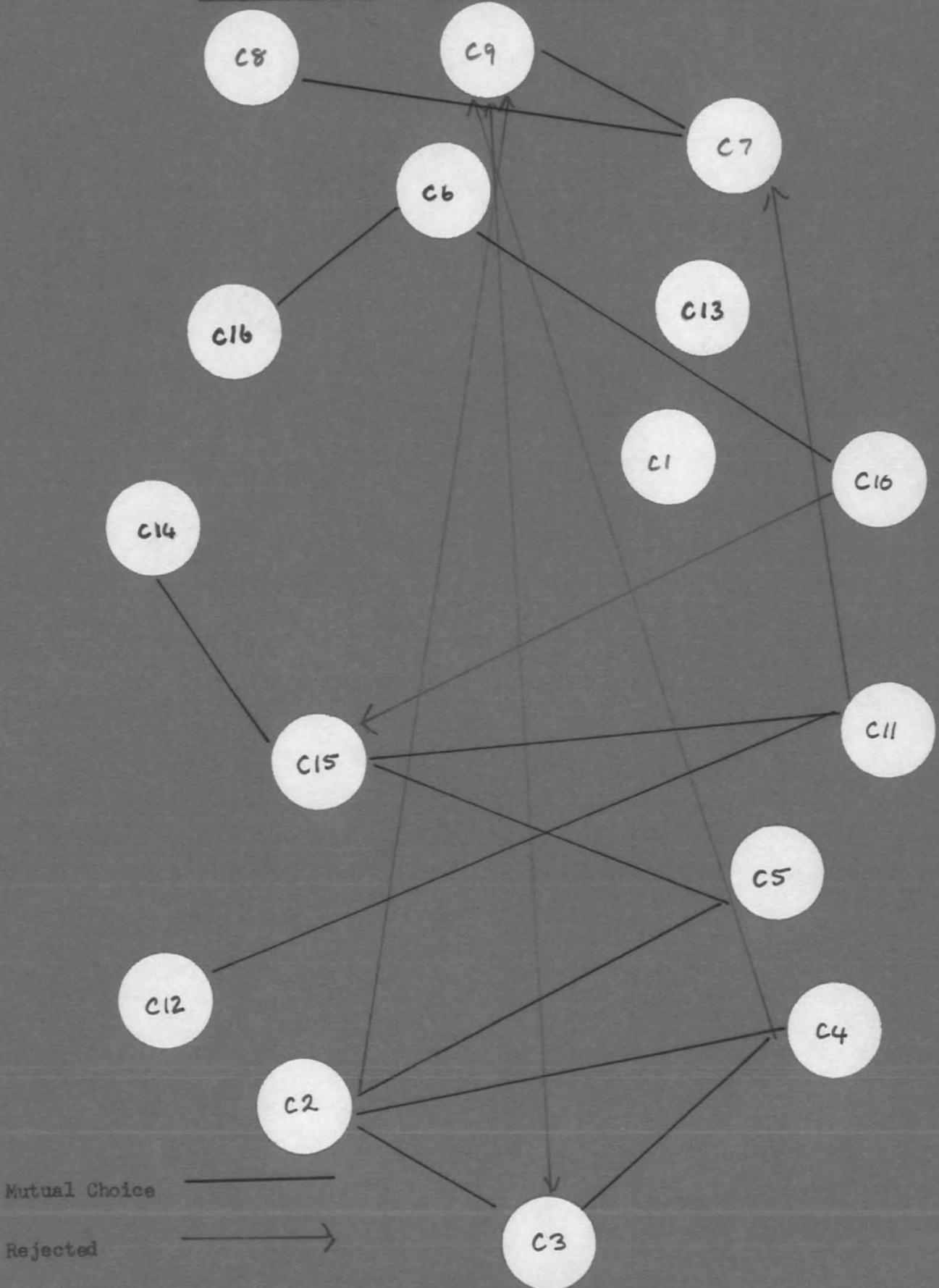
Sociometric Test 1School C. (Experimental Group)Weighted Scores. Mutuals and rejects

Sociometric Test 2

School C. (Experimental Group)

Weighted Scores.

Mutuals and Rejects



Sociograms showing mutual choices in the 'open choice' version of the tests are given in Appendix 2.

There was only one important point to note from a study of these, i.e. sociometric status is not necessarily indicative of an individual's 'security' within a group. For example A13, who tied for 12th place in rank order in test one, was chosen by only four other girls but she reciprocated all four choices. In fact only the girl ranked number one had more reciprocated choices. In test two A13 was ranked at 14.5; she was now chosen by five other girls but only one of those she selected chose her in return. It may well be that though her status dropped only slightly, she felt less secure in the group on the second occasion. It is, of course, always necessary to have in mind the peculiar construction of the group from School A. A13 was a member of the small sub-group of girls from the middle class in the secondary part of the school. During the two terms she might well have become closer to a boy friend in her class and had less time for girls. Others, such as B8, showed a similar drop in the number of mutual choices in the open test, but their drop was reflected in significant drops in sociometric status.

In conclusion it is possible to say that hypothesis I, which is first stated on page 118, that sociometric ranking remains relatively constant over a period of two school terms - may be accepted with reservations and only for the groups included in this study. In these groups ranking appeared relatively constant when no restriction was placed upon the number of choices made. Where the number of choices was limited to three, as in most sociometric tests, ranking changed rather more and most in the case of the class with the most substantial dance programme.

Over a period of three terms (including one term's extra dance with the class teacher) rank order changed a great deal though there was still a positive correlation between all tests.

These findings suggest that participation in dance may influence both group patterns and the acceptability of individuals to others in the group.

Close friendship groups tended to remain stable over two terms but disintegrated rather more in the third term. Where a dance class was made up of groups from several classes based on age then close friendship groups were closely tied to these sub-groups and this remained true over two terms.

Finally, the least intelligent pupils tended to be least highly regarded in these sociometric tests.

Sociodynamic Law

Moreno (1933) suggested that the constant trend in sociometric tests was for the most frequently chosen to receive more choices in subsequent tests and the least chosen to receive even fewer choices. This he called the Sociodynamic Law.

Evans (1962) stated that increasing the number of choices which was permitted made no difference to the manner in which scores were distributed, the extra choices tending to go to those already well-chosen. White (1966) found that the sociodynamic law functioned in two physical education classes but that the trend was reversed in a physical education class where the emphasis was on working in small groups.

Hypothesis 2 was proposed that the sociodynamic law would function in the case of the control group but that the trend would be reversed in classes receiving dance lessons with a great deal of emphasis on partner and small group work.

The 'most chosen' originally were taken to be those ranked above the third quartile in test one and the 'least chosen' those ranked below the first quartile.

Tables 23 to 26 show the number of choices received by each individual in the four classes when the number of choices to be made was unlimited.

The control group (table 23) showed an overall increase in scores because more choices were made in the second test than in the first. The extra choices were spread right across the class with, rather surprisingly, the greatest gain made right in the middle of the rank order. The diagram (Table 23a) shows the spread. Although D1 made the largest loss the bulk of gains was made by the group D6 to D12.

TABLE 23SOCIOMETRIC TESTSCONTROL GROUP.NUMBER OF CHOICES RECEIVED BY EACH INDIVIDUAL

<u>Name</u>	<u>Test 1</u>	<u>Test 2</u>	<u>Difference in Score</u>
D1	13	10	- 3
D2	13	13	0
D3	11	14	+ 3
D4	11	11	0
D5	10	11	+ 1
D6	10	14	+ 4
D7	9	11	+ 2
D8	9	15	+ 6
D9	8	11	+ 3
D10	7	9	+ 2
D11	7	10	+ 3
D12	7	14	+ 7
D13	7	7	0
D14	6	5	- 1
D15	5	8	+ 3
D16	5	4	- 1
D17	5	9	+ 4
D18	5	9	+ 4
D19	4	5	+ 1
D20	3	3	0

Sociometric Test

Diagram showing the Change in number of choices received by each individual in the second test (open choice)

Table 23a Control Group

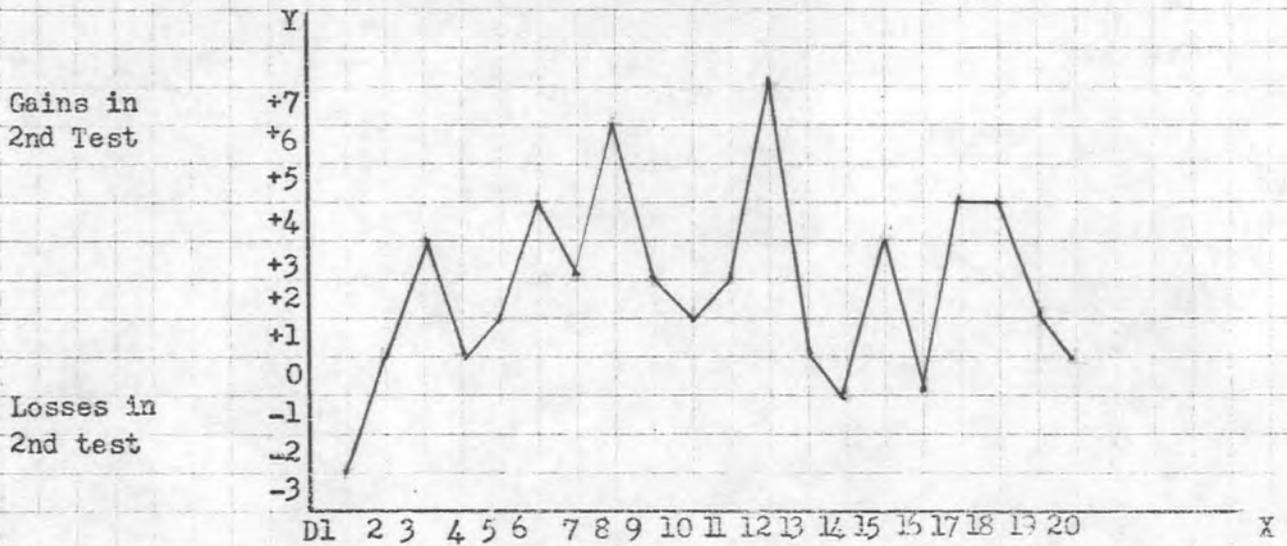
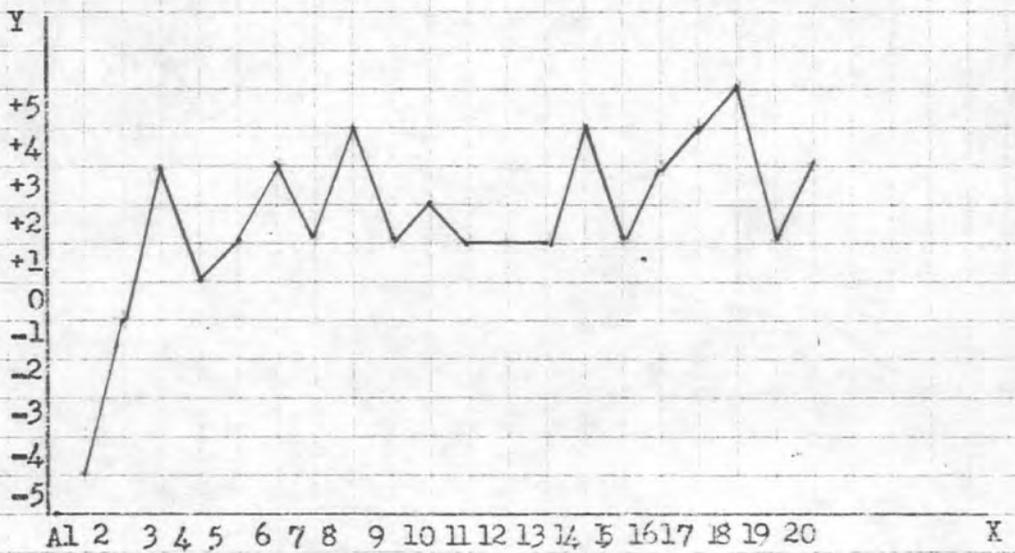


Table 24a School A



X = individuals in the group (identified by numbers as used in text)

Y = gains or losses in second test.

Bracket shows individuals 'tied) i.e. receiving the same number of choices in test 1.

Ties in test one made it difficult to compare those below the first quartile with those above the third quartile so instead the bottom six in ranked order were compared with the top six subjects. The latter made an average gain of .83 while the former group made an average gain of 1.83. Thus it may be seen that in the control group an expected trend described as the 'sociodynamic law' did not take place.

The significance of the gains made by the two groups was tested.

Null hypothesis was that there was no significant difference in the scores made by the two groups.

H1 : the difference between the two groups was significant.

Statistical test

Because sociometric scores are not normally distributed it was necessary to employ a non-parametric test. A test which examined the null hypothesis that the two groups did not differ in central tendencies was required. Because numbers were small the 'Fisher test of exact probabilities'¹ was selected and since only the .05 level of significance was required it was possible to refer to the table of critical values given in Siegel².

Rejection Region

Since the hypothesis did not predict the direction of difference a two-tail test was employed.

Let $n_1 = 6$

$n_2 = 6$

The combined median for the two groups was + 1.5

Then:-

	-	+	
n_1	4	2	6
n_2	3	3	6

When '-' equalled those whose scores did not exceed the combined median and '+' equalled those whose scores exceeded the combined median.

Reference to the table of critical values in the Fisher test showed that the null hypothesis could not be rejected. The difference between the most chosen subjects increase/decrease and that of the least chosen subjects was non-significant.

1. Siegel (1956) pp. 96 - 115.

2. Ibid. p. 256.

Dance GroupsSchool A

Table 24 shows the scores for subjects from School A. If hypothesis 2 (i.e. that the sociodynamic law was reversed by participation in dance) was correct then those at the bottom of the rank order should have received more extra choices than those at the top of the rank order.

Table 24SOCIOMETRIC TESTSCHOOL A

NUMBER OF CHOICES RECEIVED BY INDIVIDUALS IN
 THE 'OPEN CHOICE' VERSION

<u>Name</u>	<u>Test 1</u>	<u>Test 2</u>	<u>Difference</u>
A1	12	7	- 5
A2	11	10	- 1
A3	8	11	+ 3
A4	8	8	0
A5	7	8	+ 1
A6	7	10	+ 3
A7	6	7	+ 1
A8	6	10	+ 4
A9	6	7	+ 1
A10	6	4	- 2
A11	4	5	+ 1
A12	4	5	+ 1
A13	4	5	+ 1
A14	3	7	+ 4
A15	3	4	+ 1
A16	3	6	+ 3
A17	1	5	+ 4
A18	1	6	+ 5
A19	1	2	+ 1
A20	0	3	+ 3

The diagram in Table 24a (see page 157) shows that this trend was present though not to a marked degree. Again those ranked above the third quartile in the first test were considered as the 'most highly chosen' and those lying below the first quartile were considered the 'least well chosen'. Because of ties those whose scores exceeded the third quartile were compared with those whose scores were less than the first quartile.

$$n_1 = 4 \text{ (those exceeding the 3rd quartile.)}$$

$$n_2 = 4 \text{ (those below the 1st quartile.)}$$

The average loss made by n_1 equalled $\cdot75$ and the average gain of n_2 equalled $3\cdot25$. The difference was sufficiently great to permit setting up the hypothesis that the gains made in test 2 by those originally poorly chosen were greater than those made by the highly chosen subjects.

The Fisher test¹ was again employed and the same procedure was followed.

$$n_1 = 4$$

$$n_2 = 4$$

The combined median was $+ 2$.

Then

	-	+	
n_1	3	1	4
n_2	1	3	4
	4	4	

Since only the $\cdot05$ level of significance was required, reference was made to the table of critical values in the Fisher Test.² This showed that the difference was not significant and the hypothesis that the difference in gains was significant must be rejected.

1. Siegel (1956) p. 112.

2. Ibid. p. 256

School B

Table 25 shows the scores for subjects from School B. Here fewer choices were made in the 2nd and 3rd tests than in the first by the group as a whole. This may have been owing to a growing unwillingness to work with others. On the other hand it may simply have been that on the first occasion the girls in this group felt 'the more the better'. For the moment we are concerned to see whether those at the top of the rank order made fewer losses than those originally ranked lower (as would happen if the trend forecast in the 'sociodynamic' law was at work) or whether the reverse happened. Diagram 25a shows the pattern made by the gains and losses between tests 1 and 2, Table 25b shows the diagram of gains and losses between tests 2 and 3, and Table 25c shows the pattern for tests 1 and 3.

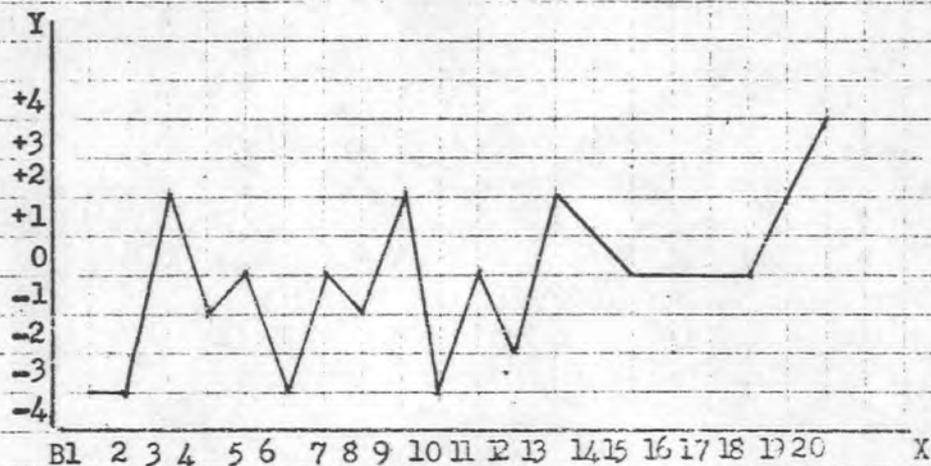
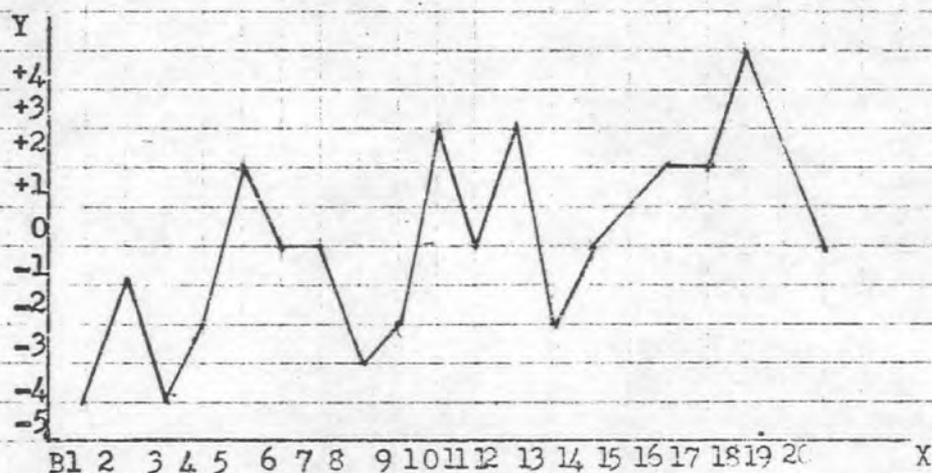
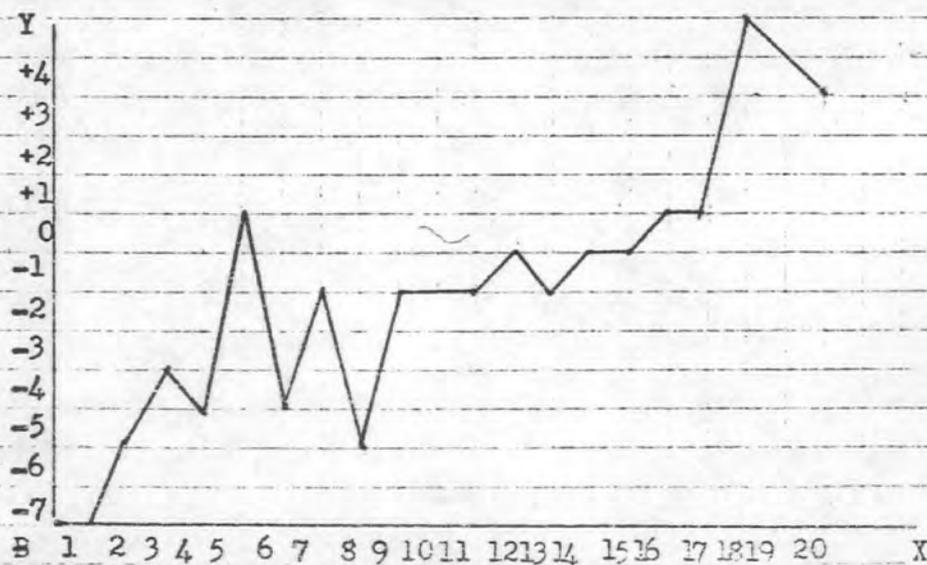
TABLE 25SOCIOMETRIC TESTSCHOOL B

NUMBER OF CHOICES GIVEN TO INDIVIDUALS IN THE
'OPEN CHOICE' VERSION OF THE TESTS

<u>Name</u>	<u>Test 1</u>	<u>Test 2</u>	<u>D</u>	<u>Test 3</u>	<u>D 2/3</u>	<u>D 1/3</u>
B1	12	8	- 4	3	- 5	- 9
B2	11	7	- 4	5	- 2	- 6
B3	10	11	+ 1	6	- 5	- 4
B4	9	7	- 2	4	- 3	- 5
B5	9	8	- 1	9	+ 1	0
B6	8	4	- 4	3	- 1	- 5
B7	7	6	- 1	5	- 1	- 2
B8	6	4	- 2	0	- 4	- 6
B9	6	7	+ 1	4	- 3	- 2
B10	6	2	- 4	4	+ 2	- 2
B11	5	4	- 1	3	- 1	- 2
B12	5	2	- 3	4	+ 2	- 1
B13	5	6	+ 1	3	- 3	- 2
B14	5	5	0	4	- 1	- 1
B15	4	3	- 1	3	0	- 1
B16	4	3	- 1	4	+ 1	0
B17	4	3	- 1	4	+ 1	0
B18	4	5	- 1	9	+ 4	+ 5
B19	0	1	+ 1	Left	-	-
B20	0	3	+ 3	3	0	+ 3

Sociometric Tests

Diagram showing the change in number of choices received by each individual in the second test (open choice).

School BTable 25a.Tests 1 and 2Table 25b.Tests 2 and 3Table 25c.Tests 1 and 3

X = Individuals in group identified by numbers used in text.

Y = Gains and losses in the second/third test.

The diagrams in Table 23a, b and c show quite clearly the trend towards greater gains by those originally poorly chosen with those originally highly chosen receiving fewer gains.

When those originally above the third quartile were compared with those below the first quartile the difference was even clearer. In test 2 the former group made an average loss of 2.0 while the latter group made an average gain of .6. In test 3 the former group made an average loss of 4.8 while the latter group made an average gain of 4.0 (B19 having left the latter group before test 3).

The significance of the differences in the two groups of subjects was examined by reference to the Fisher Test.¹

The procedure followed as before.

n_1 = Those whose original score lay above the third quartile. = 5

n_2 = Those whose original score lay below the first quartile. = 5

The combined median for the two groups = - 1.

Reference to the table of critical values² showed that the difference was not significant.

Test 1 was then compared with Test 3 using the method given above.

Then n_1 = 5

and n_2 = 5 (B19 having left before test 3
B15 was included in this calculation).

The combined median was - .05.

	-	+	
n_1	4	1	5
n_2	1	4	5
	5	5	

1. Siegel (1956) p. 112.

2. Ibid. p. 256.

Reference to the table of critical values showed that the difference in the two groups was significant at the .05 level.

It is therefore possible to say that after three terms in which a dance programme was followed, those who were least chosen in the sociometric test preceding the programme made significantly greater gains than those who were originally most chosen.

School C (Experimental Group)

Table 26 gives the number of choices received by individuals in School C (Experimental Group) in the two tests. It will be remembered that (a) this group had a more substantial dance programme than the other two groups (ignoring for the moment School B's third term of dance) and (b) there was a lower correlation of rank order between 1st and 2nd sociometric tests in this group than in the other three groups.

TABLE 26SOCIOMETRIC TESTSSCHOOL C EXPERIMENTAL GROUP.

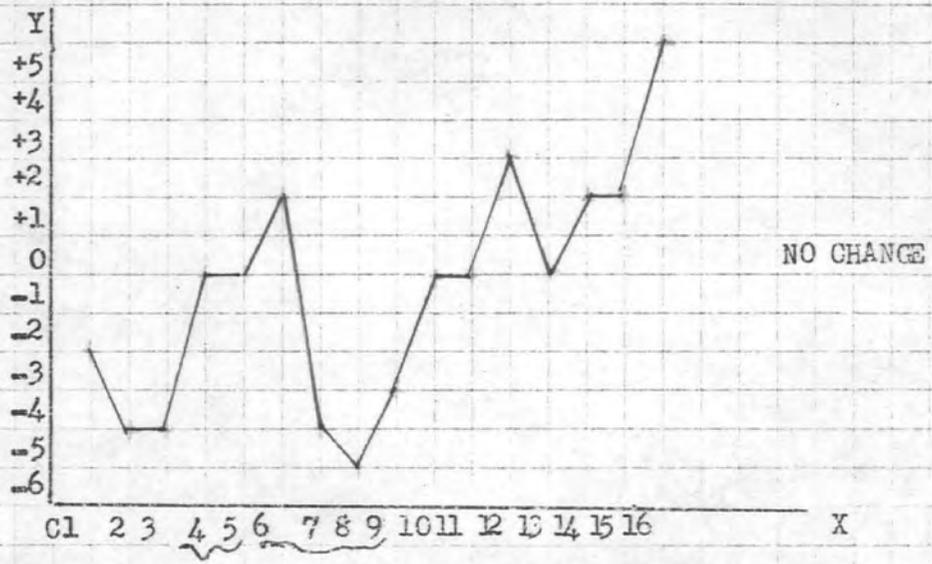
THE NUMBER OF CHOICES RECEIVED BY EACH INDIVIDUAL
IN THE OPEN CHOICE VERSION OF THE TESTS

<u>Name</u>	<u>Test 1</u>	<u>Test 2</u>	<u>Difference</u>
1	13	10	- 3
2	12	7	- 5
3	11	6	- 5
4	10	9	- 1
5	10	9	- 1
6	9	10	+ 1
7	9	4	- 5
8	9	3	- 6
9	9	5	- 4
10	7	6	- 1
11	6	5	- 1
12	5	7	+ 2
13	4	3	- 1
14	4	5	+ 1
15	3	4	+ 1
16	2	6	+ 4

SOCIOMETRIC TESTS :

Diagram showing the change in number of choices received by each individual in the second test (open choice).

Table 26a. School C (Experimental Group)



X = Individuals with brackets ~ showing tied scores in test 1.

Y = Gains and losses made in test two.

Again the group as a whole named fewer choices in the second test so that there was an overall loss. However the losses sustained by those originally highly chosen were heavy while those poorly chosen made small gains.

Table 26a shows the trend quite clearly in diagrammatic form.

It was intended to again compare those above the third quartile with those below the first quartile but because of ties in the first test it was deemed better to compare those ranked 1 to 5 and those ranked 12 to 16. The former (to be known as n_1) made an average loss of 3.0 while the latter (to be known as n_2) made an average gain of 1.4.

The 'central tendencies' of the two groups were examined for significance by reference to the Fisher¹ test as above. The method was as before.

$$n_1 = 5$$

$$n_2 = 5$$

The combined median equalled - 1.0

	-	+	
n_1	5	0	5
n_2	1	4	5
	6	4	

Reference to the table of critical values² indicated that the difference in central tendencies in the two groups was significantly different at a level of significance of .025.

1. Siegel (1956) p. 112.

2. Ibid. p. 256.

A summary of gains and losses is given below. It must be remembered that while the control group and the group from School A made more choices in the second test, this was not true for the groups from Schools B and C.

Table 27

SOCIOMETRIC TESTS

A SUMMARY OF THE AVERAGE GAINS AND LOSSES
IN SUBSEQUENT TESTS OF THOSE HIGHLY AND
THOSE POORLY CHOSEN IN TEST ONE

	<u>Average gain/loss of those originally highly chosen.</u>	<u>Average gain/loss of those originally poorly chosen</u>
CONTROL GROUP	+ .83	+ 1.83
SCHOOL A	- .75	+ 3.25
SCHOOL B TEST 1 of 2	- 2.0	+ .6
TEST 1 of 3	- 4.8	+ 4.0
SCHOOL C (Experimental Group)	- 3.0	+ 1.4

Hypothesis 2 can therefore only partially be accepted.

These results suggest that in the control group the trend described as the sociodynamic law did not take place and that indeed there was a slight reversal of the trend. Amongst the dance groups the reversal of this trend was more obvious while the two groups (B and C), who had the most substantial dance programme (School B after the third term) showed the most significant reversal of the trend.

(iii) 'Neglectees', 'Rejects' and 'Isolates'

While a study of the re-distribution of choices indicated the changing position of some of those who were at first neglected, a study of changes in relationships must include a closer examination of this aspect.

There were no true 'isolates' in this study. That is there were no individuals who neither received nor made any choices. However there were a small number of 'neglectees' or 'unchosen' individuals in the limited choice version of the tests in every group. Only in Schools A and B and in one of the classes in the pilot study were there any unchosen pupils when unlimited choice was permitted. Table 28 shows the way in which 'neglectees' appeared in each test. The numbers are really too small to tell us anything very helpful but it is perhaps worth noting that only the control group showed no change in numbers.

TABLE 28		<u>SOCIOMETRIC TESTS</u>				
<u>'NEGLECTEES' i.e. THOSE UNCHOSEN IN THE SOCIOMETRIC TESTS</u>						
	<u>Weighted Test 1</u>	<u>Weighted Test 2</u>	<u>Weighted Test 3</u>	<u>Open Test 1</u>	<u>Open Test 2</u>	<u>Open Test 3</u>
CONTROL	2	2	N.A.	0	0	N.A.
SCHOOL A	2	1	N.A.	1	0	N.A.
SCHOOL B	2	0	1	2	0	1
SCHOOL C(E)	2	1	N.A.	0	0	N.A.

N.A. - Not applicable - no third test in these schools.

Though all sociometric tests include an examination of those unchosen there are different opinions on the inclusion of named 'rejects'. As has already been mentioned there is a danger of producing bad feeling amongst pupils if they are asked to positively reject members of the class. For this reason it was originally decided not to include this aspect of testing in this study. However, since the girls in School B showed overt signs of rejection early in the dance programme and this all but ceased in the later stages, it was decided to examine this factor in the work with School C.

TABLE 29

REJECTIONS MADE IN SOCIOMETRIC TESTS GIVEN TO SCHOOL C

	<u>Control Group</u>	<u>Experimental Group</u>
No. of girls rejected in test one.	5	10
No. of girls rejected in test two.	9	4
Total number of rejections listed in test one.	8	26
Total number of rejections listed in test two.	29	7

Reference back to the sociograms showing rejections would be helpful at this stage. A diagram showing only rejections is therefore included at this point. (see following pages).

The large number of rejections listed in Test 2 in the control group included 13 rejections directed at the girl who ranked 20 in both tests. In the first test she received four rejections. In both the first and second tests where unlimited choice was permitted she received three votes but these were all from girls of low sociometric status. Where choice was limited she received a third choice 'vote' from the girl ranked 18 while in the second limited choice test she was unchosen. ~~19~~ 20 was the only coloured girl in the school. She was popular with the staff being eager to please and always trying to do her best work though she had the lowest recorded I.Q. in the group. The teachers realised that she was often teased by the other girls about her colour but had not been aware of an increase in antagonism towards her. The staff were disturbed by the result of the second sociometric test when this aspect was reported to them.

The girls ranked 14, 16 and 17 received two, three and four rejections respectively in the second test having received none in the first test. Of the remaining five rejections given to four girls, one had been rejected in the first test (not by the same person) while the others had not originally been rejected.

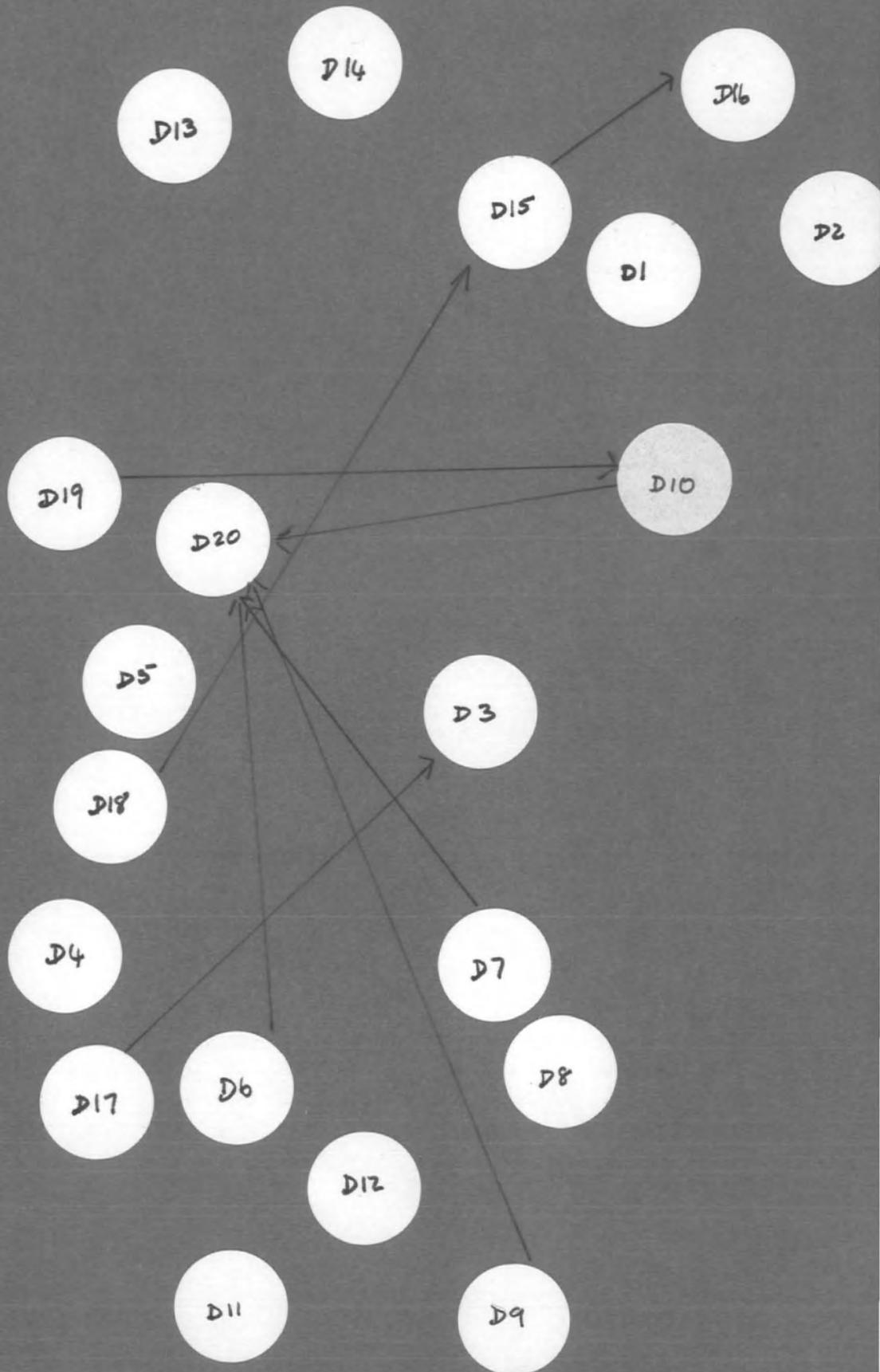
The girls rated 14, 16, 17, 18 and 20 were all rejected. This build up in rejections particularly at the bottom end of the rank order contradicted to some extent the slight reversal of the trend for the most chosen to become more acceptable and the least chosen to become even less acceptable in subsequent tests reported for the control group in the previous section.

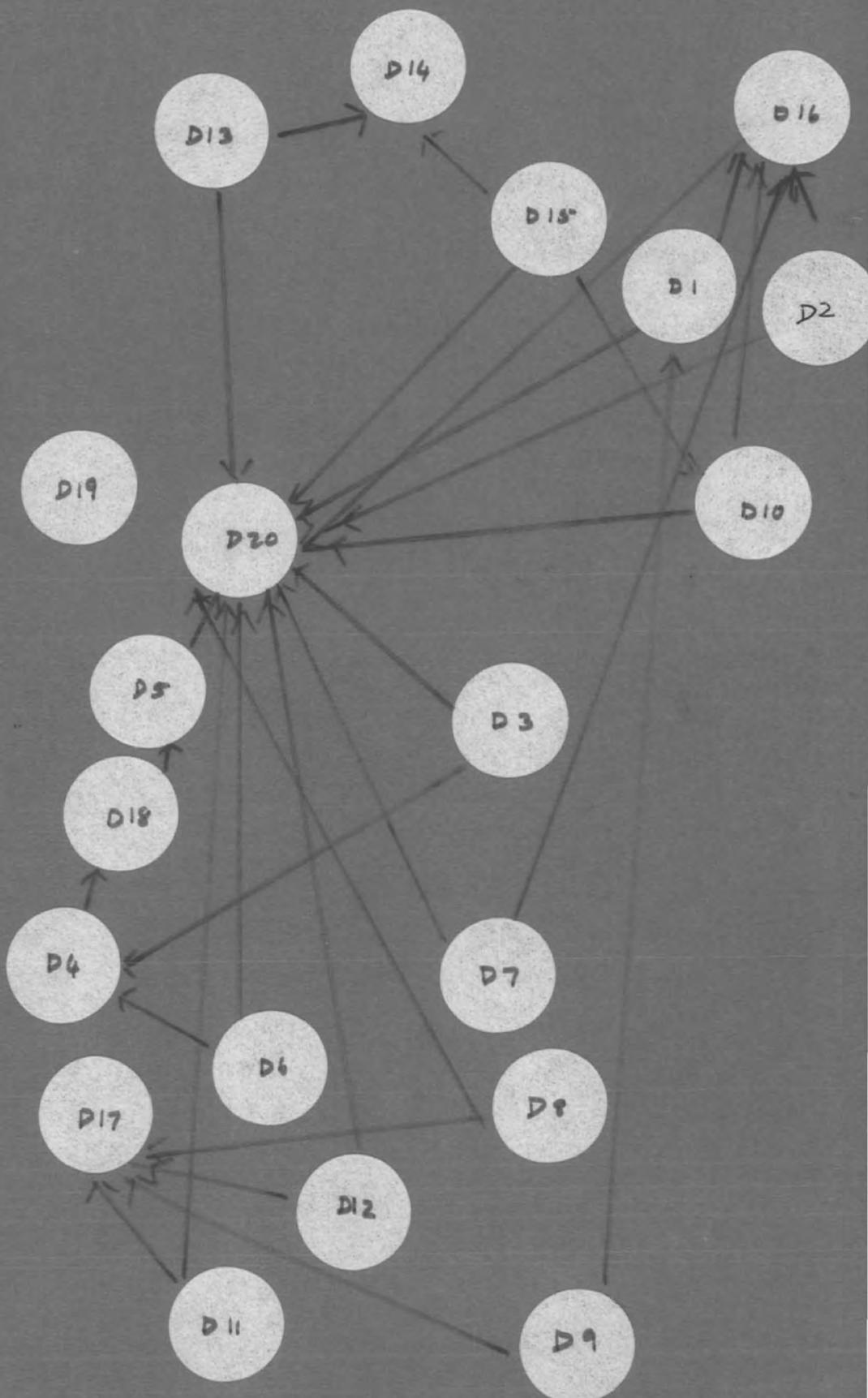
In the experimental group the three girls ranked lowest in test one, also received five rejections each, while in the second test only one of these girls received a rejection. On the other

Sociometric Test 1

Control Group

Rejects



Sociometric Test 2Control GroupRejects

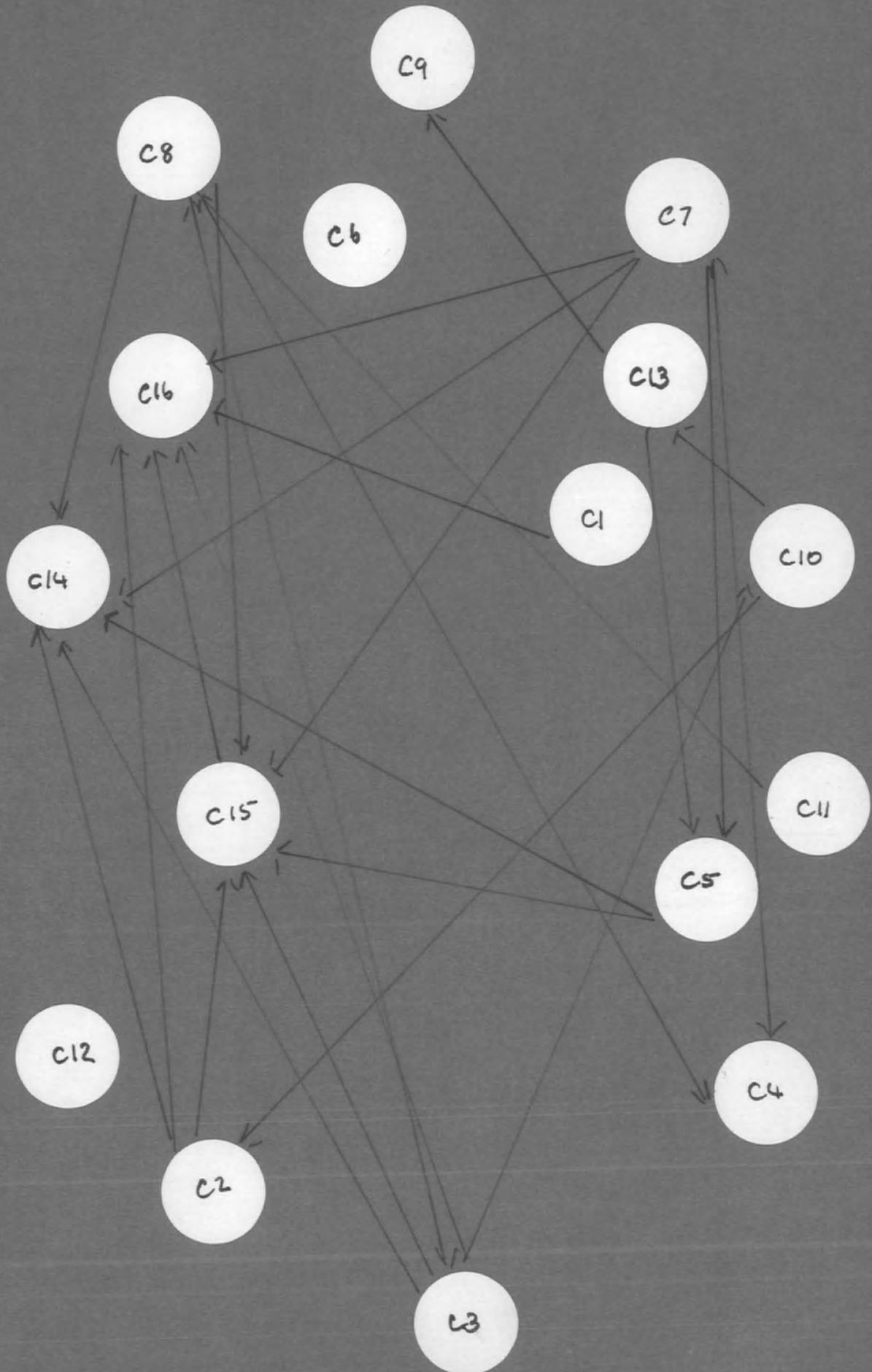
hand C9, who received one rejection in the first test, received four out of the seven given in the second test. She was probably the most outstanding member of that class. She was aggressive, often destructive, almost universally disliked by the teachers to whom she was often abusive. She was also imaginative, physically gifted, resourceful and an extremely enthusiastic dancer. She did not attend juvenile court as required one day and told her probation officer that she could not miss dance as she "had to be the wicked fairy in Miss Groves' dance." She desperately wished to be a star in something and frequently achieved this in the dance lessons. The sociometric test does not suggest that this endeared her to her peers, but she was not in fact as unpopular as she liked to boast. It seemed as though she wished to be the star rejectee if she could not be a star any other way. The odds against this girl were great (one of ten children with three different 'fathers') but time and again in dance she showed her leadership qualities. C9 was a rather special kind of 'star' reject and very different from the star reject in the control group. C9's four rejections in the second test came entirely from one 'clique' (C2, 3, 4 and 5). C9 rejected C3 the leader of this other clique. C2, C3, C5 and C7 each rejected four girls in the first test while in the second C7 rejected no-one and the other three picked out only C9. In test 1, four of the rejections were mutual, while in test 2 one was mutual.

The significance of the changes in the number of girls rejected was examined by means of the Wilcoxon matched-pairs signed ranks test. Since it was desired to consider the number of rejections as well as the change from acceptance to rejection and vice versa, this test of significance was chosen.

Sociometric Test 1

School C (Experimental Group)

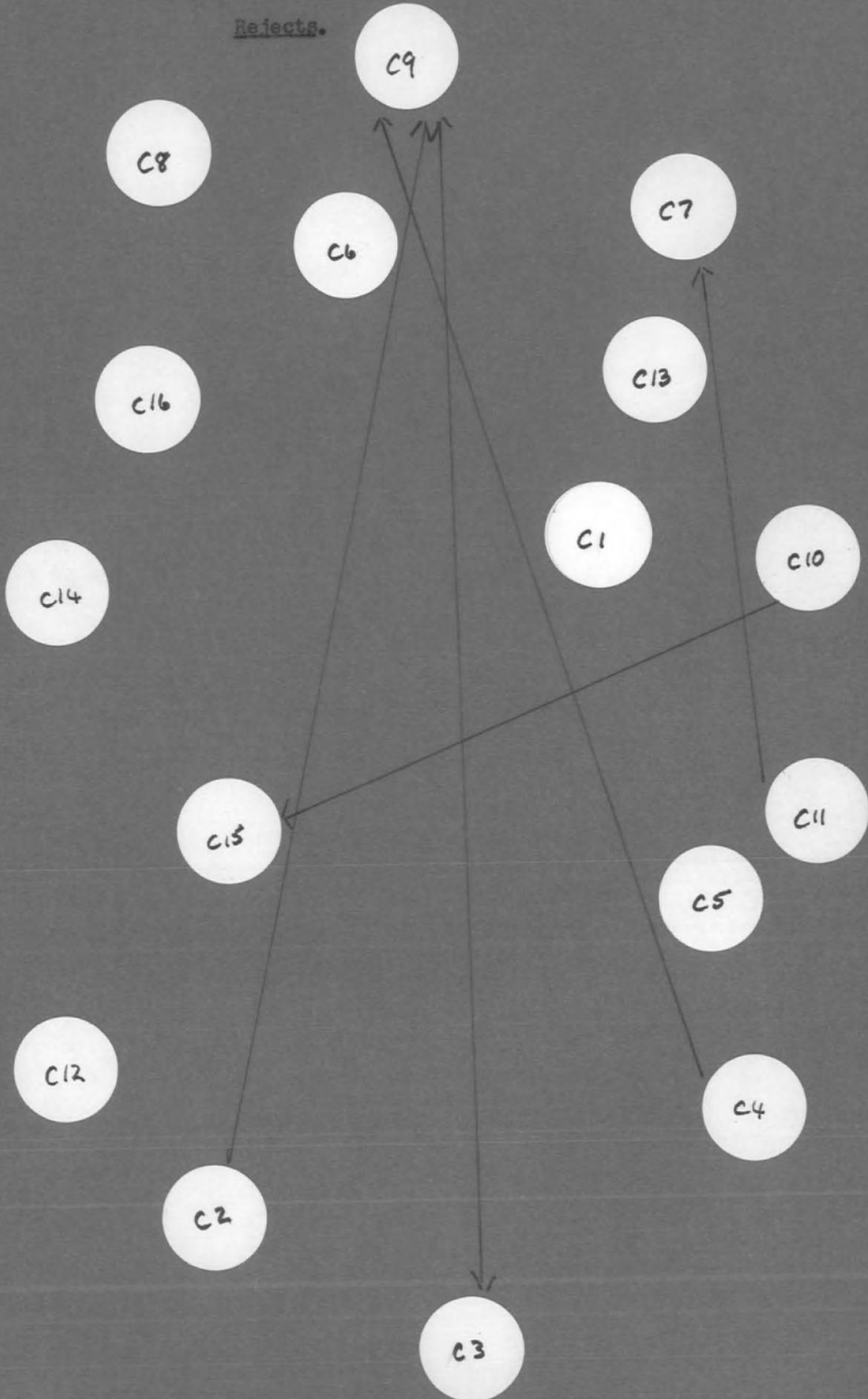
Rejects



Sociometric Test 2

School C (Experimental Group)

Rejects.



Tables 28 and 29 show the number of rejections received by individuals in the two sociometric tests. This data was subject to the Wilcoxon test of significance. The change in both groups was shown to be statistically significant at the .05 level of significance. The control group showed a significant increase in the number of rejections awarded while the experimental group from School C showed a significant decrease.

Table 30.

Sociometric Test

<u>Control Group</u>	<u>Positive Test 1</u>	<u>Rejections Test 2</u>	<u>D</u>	<u>Rank of d</u>	<u>Rank with less frequent sign.</u>
D1	0	1	+ 1	+ 3.5	
D3	1	0	- 1	- 3.5	3.5
D4	0	2	+ 2	+ 7	
D5	0	1	+ 1	+ 3.5	
D10	1	1	0	-	
D14	0	3	+ 3	+ 8.5	
D15	1	0	- 1	- 3.5	3.5
D16	0	3	+ 3	+ 8.5	
D17	0	4	+ 4	+10	
D18	0	1	+ 1	+ 3.5	
D19	1	0	- 1	- 3.5	3.5
D20	4	13	+ 9	+11	

Note Only those who received a 'rejection' in at least one test are noted above.

$$N = 11 \quad T = 10.5$$

Reference to the table for the significance of 'T' shows that it is possible to reject at the .05 level of significance the null hypothesis that the number of rejections received in the two tests does not differ.

Table 31Sociometric Test

	<u>School C. Experimental Group</u>			
	<u>Test 1</u>	<u>Test 2</u>	<u>D</u>	<u>Rank of difference</u>
C3	2	1	- 1	- 3
C4	2	0	- 2	- 6
C5	1	0	- 1	- 3
C7	0	1	+ 1	+ 3
C8	1	0	- 1	- 3
C9	1	4	+ 3	+ 7.5
C10	3	0	- 3	- 7.5
C13	1	0	- 1	- 3
C14	5	0	- 5	- 10.5
C15	5	1	- 4	- 9
C16	5	0	- 5	- 10.5

$$N = 11 \quad T = 10.5$$

Reference to the table for the significance of 'T' shows that it is possible to reject at .05 level of significance the null hypothesis that the number of rejections received in the two tests does not differ.

There is no way of telling why the experimental group had a much higher number of rejections in test one than did the control group. The increasing number of rejections awarded to those of the control group of low sociometric status is in keeping with the previously discussed sociodynamic law. The dance group did not show this trend. It is unfortunate that similar data was not available for the other dance groups, so that the suggestion that a dance programme can modify the way in which girls are rejected by their classmates could be more emphatically stated or rejected.

The indication, however, is that this may be the case.

Conclusion

In this study educationally subnormal adolescent girls tended to maintain close friendships throughout two terms regardless of the programme followed. When a group was re-tested after a further term some close friendships had become less stable.

Rank order in two tests was much less highly correlated when a group had a substantial dance programme than when they had no dance or a less substantial programme. While in the case of School B this could simply have been the result of a longer period of time, this was not so in the case of School C. School C had no longer period between the tests than School A, but had a more substantial dance programme. This suggests that the modification in School B might also have been due to a longer dance programme and not simply to the time span. The control group and the group from School A showed little change in the way in which extra choices were distributed in a second sociometric test, while in the groups from Schools B and C those who had originally been poorly chosen did comparatively better in the second test than those originally highly selected. A group which had a dance programme had fewer girls rejected in the second test and none 'unchosen' while the control group had the same number 'unchosen' in both tests and an increase in the number who were rejected.

Although no clear picture emerged of the relationship between I.Q. scores and sociometric status, yet the dullest members of the group were never of high status. A dance programme involving much group work did not change this situation.

CHAPTER 8SOCIAL BEHAVIOUR ASSESSMENTAbstract

The behaviour of pupils in each group was assessed at the beginning and end of the programme. The assessment was based on a questionnaire filled in by the respective class teachers.

The teacher of the control group made a less favourable assessment of her group as a whole at the end of the experimental period than at the beginning. Since the latter was at the start of term and the former at the end of a rather heavy term this was not unexpected.

All the groups receiving a dance programme showed improvement in all areas assessed though the change was not significant in the case of School A.

SOCIAL BEHAVIOUR ASSESSMENT

A form was designed to examine the level of social adjustment before and after an individual's participation in the dance programme. It took the form of a questionnaire which the class teacher was asked to complete for every member of her class. (The questionnaire appears in Appendix 3). The only appropriate existing test appeared to be the Bristol Social Adjustment Guides but these are very time consuming for the teachers concerned. The Bristol 'pointer' questions were considered for the pilot study but they would not have produced all the information required. Therefore a new questionnaire was designed for the pilot project. This was based on a questionnaire sent out to schools in 1970 by the Nuffield centre in Newcastle in an attempt to identify maladjusted children in special schools in the city. The test was modified for the present study.

Questions in the test related to 'Unforthcomingness', 'Aggression', 'Restlessness', and 'Social Isolation'. (Stott's terms are used throughout).

Stott (1966 defined the first three items as follows :-

Unforthcomingness : "Inhibited behaviour, defensiveness against anybody or anything strange, not against affection in general."

In the face of difficulty, children displaying this quality withdraw into their shells. Often they are thought of as 'quiet, nice types', though sometimes their behaviour borders on autism. Stott reported, "Amongst a group of 142 backward children studied by intensive case study methods, unforthcomingness was the predominant form of behaviour disturbance." ¹. (42% compared with 26% of other types of behaviour.)

1. Stott (1966) P.155.

Questions 6, 12, 13 and 14 related to 'unforthcomingness'.

Aggression : "means different things to different people - assertiveness or dominance, repressive irritability (snapping back at people), hostility or resentment, teasing or spiteful molestation or quarrelsomeness." ¹.

Several children who were in the three special schools used in this study had been expelled from secondary schools for excessively aggressive behaviour. Only two questions in this questionnaire related to this aspect of behaviour i.e. questions 10 and 11 - "flies into a temper" and "fights with other girls". The area was therefore more restricted than that outlined by Stott.

Restlessness : "equals distractability. This, next to unforthcomingness, is the commonest type of behaviour disturbance amongst the mentally subnormal." ².

Children who show extreme restlessness attend to nothing for more than a few minutes and fail to conceptualise. Stott suggests that "less affected children may function satisfactorily at a concrete level, but cannot deal with concepts requiring any degree of abstraction." ³. Two of the teachers concerned in the present study and both those involved in the pilot project spoke particularly of the increase in ability to concentrate following the dance and gymnastic programmes. Questions 1, 2, 7, 8, 9 relate to 'restlessness'.

1. Stott (1966) P.160.
2. Ibid. P.168.
3. Ibid. P.168.

Social Isolation : In the questionnaire on which this assessment form was based this section was not dealt with. Indeed it could well be included in the section on 'unforthcomingness'. Since, however, this study looked particularly at ways of getting girls to work together with partners and in bigger groups and also examined the social acceptability of individuals, it was decided to include a section which would ask for the teacher's assessment of an individual's acceptability to others. For ease this was included with the other aspects of behaviour to be assessed. Questions 3, 4 and 5 relate to this area.

Full results are given in Appendix 3.

The class teacher was asked to indicate which of five responses was appropriate to the individual child in relation to each question. For example question one said, "Restless in class" and the teacher put a mark under 'never', 'seldom', 'often', 'frequently' or 'extremely often' as appropriate. Scoring was 1 for 'never', 2 for 'seldom' and so on i.e. a high score showed undesirable behaviour. The overall headings and scoring were not made known to the teachers. There ~~was~~ a different number of questions relating to each criterion, and an average mark for each section was recorded. Little can be gained from comparing actual scores since the same type of behaviour may appear worse to one teacher than to another. Emphasis therefore is upon the difference in weighting given by an individual teacher to a pupil's performance on the two occasions.

The first assessment of behaviour was made at the beginning of term and the second was made at the end of term. (School B was an exception in that the third assessment made at the end of term was compared with the second assessment also made at the end of a term.)

At the end of term behaviour often seems worse than at the beginning of term. Since teachers also tend to be tired at the end of term and to view their pupils with a more jaundiced eye than they did at the beginning of term, we could reasonably expect the second assessment to show higher average marks (i.e. deterioration of behaviour) than the first assessment.^{1.}

Reliability

In the pilot study the two class teachers were asked to write detailed comments on the programme and the effect they believed it had had upon their particular class. The teachers' overall assessment of the classes' behaviour following the experimental programme agreed closely with the results gained from scoring individual assessments and averaging these scores. They both pin-pointed the areas of restlessness and unforthcomingness as the aspects of behaviour showing most improvement and were aware of little improvement in the aggressiveness of their particular class as a whole. They also were able to pick out individuals who were obviously getting on better with their peers and with adults.

There was, of course, nothing to show that this was the result of the dance programme rather than out of school experience. However when a control group was used in the follow up study these changes were not present; in fact the control group's behaviour, as a group, deteriorated.

1. Note. The teachers did not have a copy of their first assessment when they made a second assessment.

Results and discussion

Table 32 gives the summary in diagrammatic form of gains and losses shown in the behaviour assessment.

The control group showed the expected deterioration in every section with that dealing with aggressive tendencies showing the least change. In the pilot study also and in all three dance groups in this study, aggressive behaviour showed least change. This is partly owing to the fact that the section relied on fewer questions than the other three, thus possibility of change was more limited. On the other hand this section was the only one in which one of the dance groups showed a significant deterioration of behaviour. (School B - 3rd test).

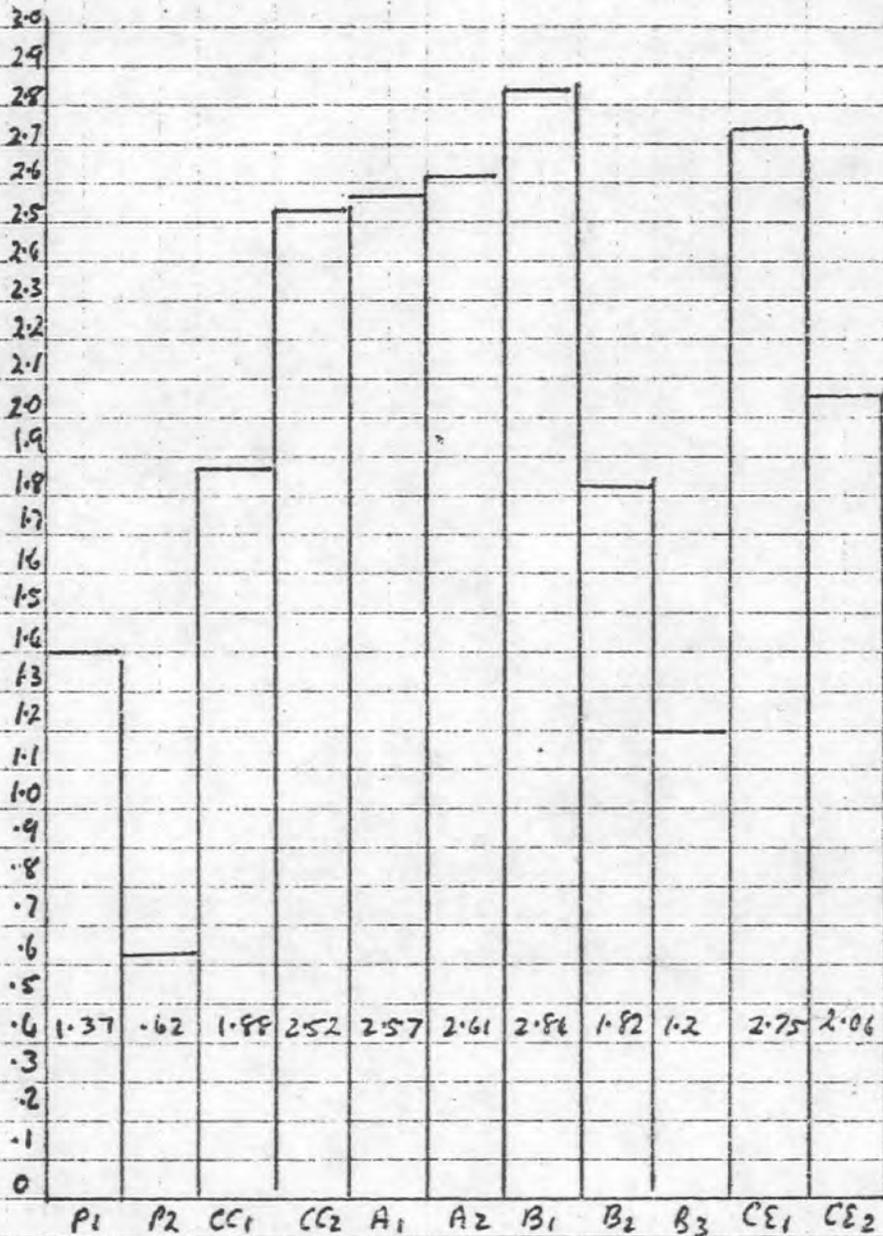
Of the dance groups it can be seen that School A showed least overall improvement. It will be remembered that this was the school which already had a good P.E. programme before the dance programme was introduced. The other schools had practically no other P.E. at all. This may be the reason for the difference, though there is no evidence that this was so.

The full results are given in Appendix 3 together with a copy of the form which the teachers completed for each girl in their class.

Table 32a. Behaviour Assessment

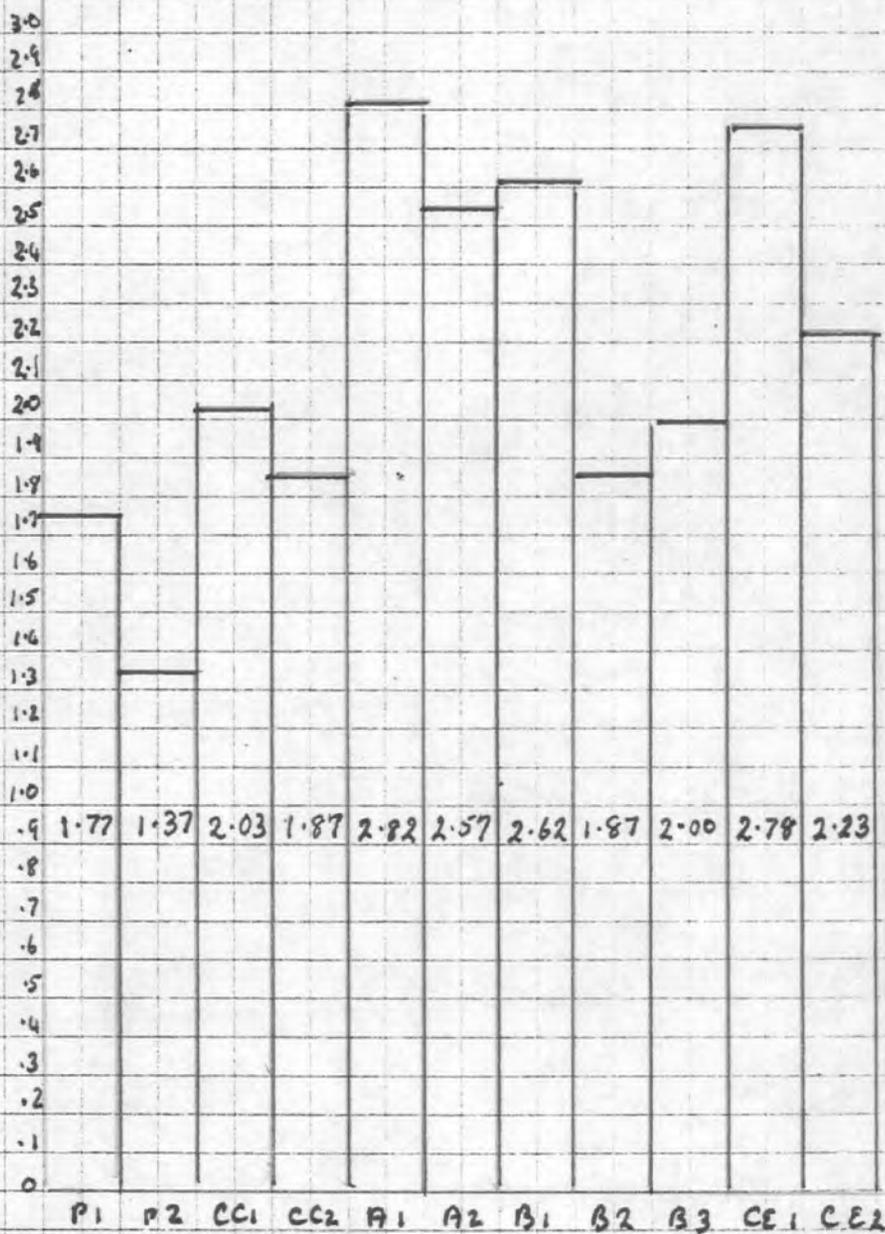
Average Scores for each Class

Unforthcomingness (low score desirable)



P1	Pilot dance group	1st test
P2	" " "	2nd test
CC1	Control group	1st test
CC2	" "	2nd test
A1	School A	1st test
A2	" "	2nd test
B1	School B	1st test
B2	" "	2nd test
B3	" "	3rd test
CE1	School C (Experimental)	1st test
CE2	" " "	2nd test

Table 32 b. Behaviour Assessment
Average Scores for each class
Aggression (Low score desirable)



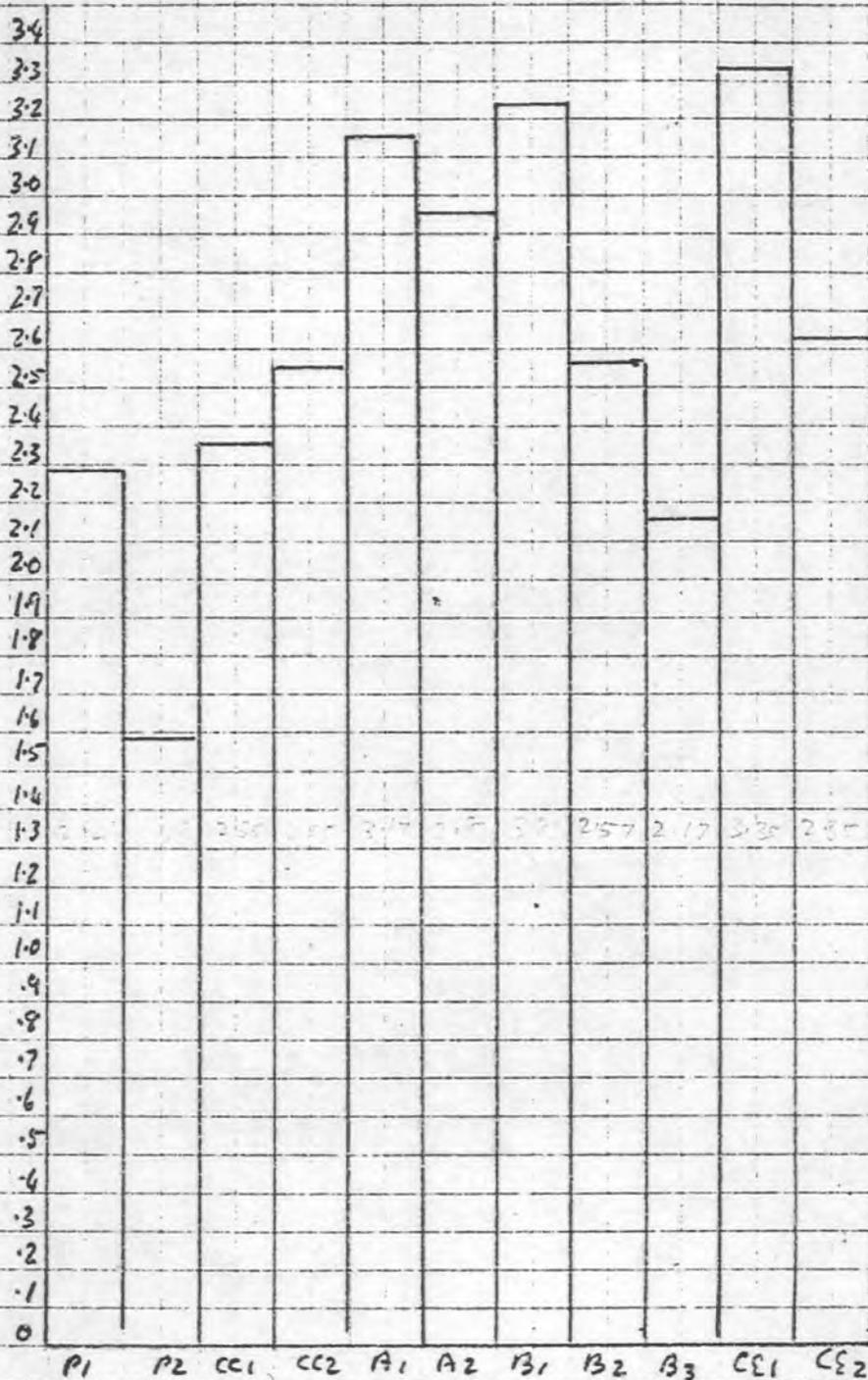
P1	Pilot dance group	1st test
P2	" " "	2nd test
CC1	Control group	1st test
CC2	" "	2nd test
A1	School A	1st test
A2	" "	2nd test
B1	School B	1st test
B2	" "	2nd test
B3	" "	3rd test
CE1	School C (Experimental)	1st test
CE2	" " "	2nd test

Table 32c

Behaviour Assessment

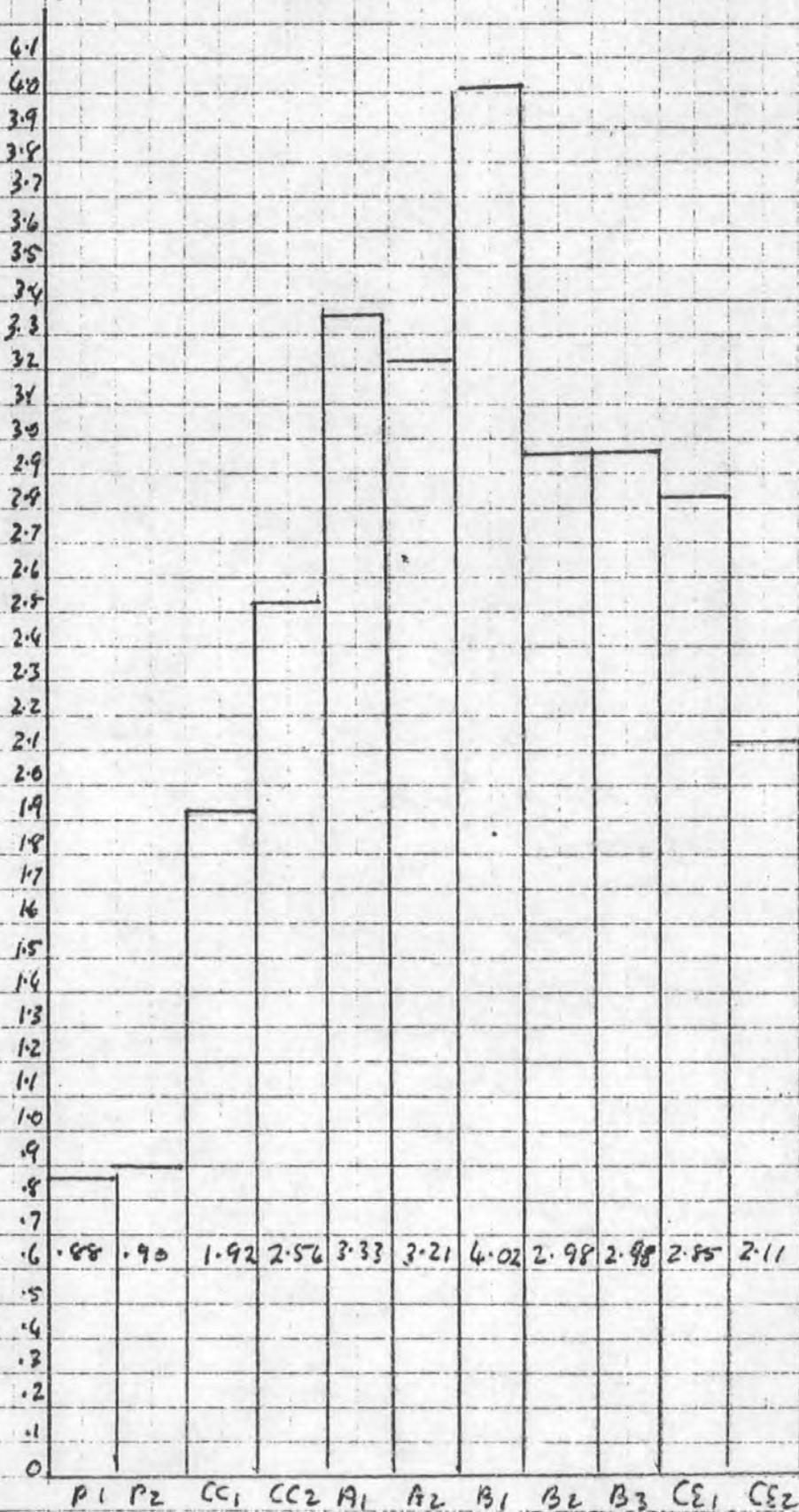
Average scores for each class

Restlessness (low score desirable)



P1	Pilot dance group	1st test
P2	" " "	2nd test
CC1	Control group	1st test
CC2	" "	2nd test
A1	School A	1st test
A2	" "	2nd test
B1	School B	1st test
B2	" "	2nd test
B3	" "	3rd test
CE1	School C (Experimental)	1st test
CE2	" " "	2nd test

Table 32d. Behaviour Assessment
Average Scores for each class
 Social Isolation (Low score desirable).



P1 & P2	Pilot dance group	1st & 2nd tests
CC1 & CC2	Control Group	1st & 2nd tests
A1 & A2	School A	1st & 2nd tests
B1 B2 & B3	School B	1st, 2nd & 3rd tests
CE1 & CE2	School C (Experimental)	1st & 2nd test.

The individual gains and losses made by individuals between test 1 and the subsequent test(s) were examined by means of the Wilcoxon matched-pairs signed ranks test of significance. This test was chosen because the comparison involved two related samples and differences between the two tests could be ranked in order of absolute magnitude.

Table 33 gives the changes in teacher's assessment for members of the control group.

TABLE 23

BEHAVIOUR ASSESSMENT

CONTROL GROUP : SHOWING INDIVIDUAL CHANGES
IN AVERAGE SCORES IN TESTS 1 & 2

<u>Name</u>	<u>Unforthcomingness</u>	<u>Aggression</u>	<u>Restlessness</u>	<u>Social Isolation</u>
D1	+ 1.00	- 1.0	- .6	- .3
D2	+ .75	NO CHANGE	NO CHANGE	NO CHANGE
D3	+ 1.00	NO CHANGE	+ .6	+ .3
D4	- .5	NO CHANGE	- .2	+ 1.00
D5	+ .75	NO CHANGE	NO CHANGE	NO CHANGE
D6	+ .75	NO CHANGE	+ .2	+ .3
D7	+ 1.25	NO CHANGE	+ .6	+ .3
D8	- .75	- .5	NO CHANGE	- .3
D9	+ .25	NO CHANGE	NO CHANGE	NO CHANGE
D10	NO CHANGE	- .5	NO CHANGE	NO CHANGE
D11	+ .5	+ .5	+ .2	+ .3
D12	+ .5	- 1.00	+ .2	+ .3
D13	+ 1.00	+ .5	+ .8	+ .7
D14	+ .75	NO CHANGE	+ 1.0	+ .3
D15	+ .5	+ .5	+ .6	+ 1.00
D16	+ .75	NO CHANGE	+ .6	+ .4
D17	+ .75	+ 1.00	+ .6	+ 1.3
D18	+ .5	NO CHANGE	+ .2	+ .7
D19	+ 1.5	NO CHANGE	+ .4	+ 1.3
D20	+ .5	NO CHANGE	+ .6	+ 2.00

1 No change 19 deteriorations.	12 No change 5 deteriorations 3 improvements	5 No change 13 deteriorations. 2 improvements.	4 No change 14 deteriorations. 2 improvements.
N = 19 T = 0 P = .01	N = 8 T = 17 N S	N = 15 T = 13 P = .01	N = 16 T = 9 P = .01

Null hypothesis : that the change between tests 1 and 2 was not significant.

H1 : that the control group would show a significant deterioration in behaviour as assessed by their class teacher between the beginning of term one and the end of term two.

Unforthcomingness

Reference to the appropriate data in Table 33 showed that $N = 19$ i.e. the number of pairs in the sample minus the pairs where the difference between scores in the two tests = 0.

All but one of the group showed deterioration in behaviour in the second test and reference to the table of critical values for 'T'¹ shows that the hypothesis that unforthcomingness amongst members of a class which followed no special dance programme would be worse at the end of a two term period than at the beginning could be accepted at a level of significance of .01.

Aggression

The data for this area of behaviour in Table 33 showed that $N = 8$ and $T = 17$.¹ Reference to the table of critical values of T in the Wilcoxon test showed that there was no significant change in aggression between the beginning and end of the test period.

Restlessness

The data for this area gave a reading of $N = 15$ and $T = 13$.¹ (See table 33). Reference to the table of critical values for 'T' showed that the hypothesis that there could be a significant deterioration of restless behaviour between the beginning and end of a two term period could be accepted at a level of significance of .01.

Social Isolation

Here $N = 16$ and $T = 9$.¹ The table of critical values of T showed that again the hypothesis that the cohesion of the group would deteriorate over this period could be accepted at a level of significance of .01.

1. $T =$ sum of ranks of the less frequent sign.

In the only section where the difference was not significant we see that twelve girls recorded identical scores in both tests. As has been suggested, the lack of clear change in this section might well be due to the limited flexibility imposed by having only two questions related to this area.

Dance groups

It was hoped that where classes had received a programme of dance, there would be a significant improvement in each behaviour 'area'.

School A

Table 34 shows the results of the teacher's assessment in School A.

TABLE 34BEHAVIOUR ASSESSMENT :

SCHOOL A : SHOWING INDIVIDUAL CHANGES IN AVERAGED SCORES BETWEEN TESTS 1 & 2

<u>Name</u>	<u>Unforthcominess</u>	<u>Aggression</u>	<u>Restlessness</u>	<u>Social Isolation</u>
A1	NO CHANGE	NO CHANGE	+ .2	+ .3
A2	- .2	NO CHANGE	- .4	- .3
A3	+ .7	NO CHANGE	- .2	+ .6
A4	+ .3	- .5	- .6	+ .3
A5	NO CHANGE	NO CHANGE	NO CHANGE	- .4
A6	+ .2	- 1.00	- .6	- .6
A7	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
A8	- .7	NO CHANGE	NO CHANGE	- .3
A9	+ .7	+ .5	+ 1.4	- .3
A10	+ .5	NO CHANGE	- .2	- .4
A11	- .2	NO CHANGE	+ .2	+ .7
A12	+ .5	+ .5	+ 1.2	+ .7
A13	- .3	NO CHANGE	NO CHANGE	+ 1.00
A14	- .3	- 1.00	- .4	NO CHANGE
A15	NO CHANGE	NO CHANGE	- 1.00	- .3
A16	+ .2	NO CHANGE	- 1.00	- 1.3
A17	- .5	- .5	NO CHANGE	- .3
A18	- .2	- .5	- .9	NO CHANGE
A19	+ .8	NO CHANGE	- .5	+ 1.00
A20	+ .3	- 2.5	- 1.00	+ .4

4 No change	12 No change	5 No change	3 No change
9 Deteriorations	2 Deteriorations	4 Deteriorations	8 Deteriorations
7 improvements	6 Improvements.	11 Improvements	9 Improvements
N = 16	N = 8	N = 15	N = 17
T = 49	T = 6	T = 34	T = 66.5
Not significant	Not significant	Not significant	Not significant

Unforthcomingness

In this section, contrary to expectations, the girls in School A showed a deterioration in behaviour.

The Wilcoxon matched-pairs signed test was used to examine the significance of this deterioration.

Reference to the data in Table 34 showed that $N = 16$ (i.e. the number of 'pairs' showing a change of score between the two tests)

Using the Wilcoxon test $T = 49$

Reference to the table of critical values for 'T' showed that the null hypothesis, that there was no significant difference in the two scores, could not be rejected. The deterioration in unforthcoming behaviour was not statistically significant.

Aggression

Although there was a large number of subjects showing no change in assessed behaviour, those showing improvement outnumbered those showing deterioration.

Calculations using the Wilcoxon test of the data given in Table 34 showed that

$N = 8$ and $T = 6$

Again it was found that the difference between scores in the two tests was not significant. The number of pupils showing less aggressive behaviour at the time of the second test than at the time of the first was greater but not significantly so at .05 level.

Restlessness

Table 34 showed that there were more than twice as many improved scores for restlessness in the second test than in the first. The Wilcoxon test was applied and $N = 15$ while $T = 34$. Reference to the table for critical values of T

showed that the change was not significant at .05 level. The girls of School A were less restless as a group after the dance course but the change was not statistically significant.

Social Isolation

Here only three pupils showed no change in assessed behaviour but the rest were split almost equally into those showing improvement and those showing deterioration. To see whether there was any significant difference in the magnitude of change the Wilcoxon matched-pair signed rank test was employed. Here $N = 17$ and $T = 66.5$. Clearly there was no significant difference in the scores.

The above figures suggest that the inclusion of dance in the curriculum for secondary age girls in School A made no difference to their behaviour as assessed by their class teacher. Matters might, of course, have been worse if there had been no dance. If the changes in school A's results are compared with those of the control group we can see that the dance group improved more than the control group in three of the four categories and that in the fourth (Unforthcomingness) the deterioration in the scores for School B was not significant while that of the control group was seen to be significant. In order to see this more clearly, the changes in the control group scores were compared with those of School A for this area only i.e. 'Unforthcomingness'. Since the comparison was between two unrelated groups the Wilcoxon test was not appropriate and the Mann-Whitney test of significance was used.

The hypothesis was proposed that the deterioration in the control group was significantly worse than that of School A in the area of unforthcomingness.

N1 (i.e. those from School A showing a change in score for unforthcomingness) = 16

while N2 (i.e. those from the control group showing a similar change) = 19

Using the Mann Whitney formula to calculate 'U' we find that $U = 46$ (See appendix 2 for calculation). Reference to the table of critical values for U showed that the hypothesis could be upheld at a level of significance of .002.

This suggests that the results for School A might indeed have been similar to those of the control group if they had not had a dance course.

SCHOOL B

Table 35, 36 and 37 give the changes in test results for School B. The results of tests 1 and 2 were compared, then tests 2 and 3. Where the change between tests 2 and 3 proved to be insignificant or to show a change of direction the difference between tests 1 and 3 were examined.

TABLE 35BEHAVIOUR ASSESSMENTSCHOOL B : SHOWING INDIVIDUAL CHANGES IN AVERAGED SCORES IN TESTS 1 & 2

<u>Name</u>	<u>Unforthcominess</u>	<u>Aggression</u>	<u>Restlessness</u>	<u>Social Isolation</u>
B1	- 1.00	- 1.00	- .4	- .7
B2	- .5	NO CHANGE	NO CHANGE	+ .7
B3	- 1.7	- 1.00	- 1.4	- .4
B4	- .7	NO CHANGE	+ .4	+ .4
B5	- 1.00	NO CHANGE	- .2	- .7
B6	- 1.3	- .5	- .8	- .3
B7	- .4	- 1.00	- .2	NO CHANGE
B8	- .7	- 1.5	- .6	- 1.00
B9	- 1.3	NO CHANGE	- 1.4	- .6
B10	- 1.3	- 1.00	- 1.00	- .6
B11	- 1.00	- 1.5	- 1.00	- 1.00
B12	- .8	- 1.00	- 1.00	- .7
B13	- 1.3	- 2.00	- 1.6	- .2
B14	NO CHANGE	NO CHANGE	- .4	NO CHANGE
B15	- .5	- 1.00	- 1.6	- .7
B16	- 1.00	- 1.00	+ .2	- .3
B17	- .2	NO CHANGE	+ 1.2	- .3
B18	- 1.00	- 1.00	- 1.00	- 1.4
B19	- .7	- 1.00	- 2.00	- 1.00
B20	- 1.00	- .5	- 1.2	- 1.00

1 No change	6 No change	1 No change	2 No change
0 Deteriorations	0 Deteriorations	3 Deteriorations	1 Deterioration
19 Improvements	14 Improvements	16 Improvements.	17 Improvements
N = 19	N = 14	N = 19	N = 18
T = 0	T = 0	T = 21.5	T = 11
P = .01	P = .01	P = .01	P = .01

The girls from School B showed a very considerable improvement in their behaviour. In both 'Unforthcomingness' and 'Aggression' no-one deteriorated at all. The great improvement in 'unforthcomingness', with only one girl showing no change in behaviour, was in line with the findings with both groups in the pilot study. However aggression did not show the same improvement in the groups in the pilot study.

Restlessness and social isolation also showed great improvement in School B.

The difference in scores in the last two areas was subject to the Wilcoxon matched-pairs signed ranks test as above.

Restlessness

Reference to Table 35 showed that $N = 18$. When the ranks for the sign shown most seldom were added T was found to equal 22.5

Reference to the table of critical values of T in the Wilcoxon test showed that the difference was significant at the .01 level of significance.

Social Isolation

Again referring to Table 35 showed that $N = 18$ and $T = 11$ so that the difference was significant at the .01 level of significance. In both cases there was significantly greater improvement than deterioration in behaviour.

In every area of behaviour, then, the class teacher of the girls from School B saw substantial improvement.

Table 36 indicates whether that improvement was maintained for a further term.

TABLE 36

BEHAVIOUR ASSESSMENT

SCHOOL B : SHOWING INDIVIDUAL CHANGES IN AVERAGE SCORES IN TESTS 2 and 3

<u>Name</u>	<u>Unforthcomingness</u>	<u>Aggression</u>	<u>Restlessness</u>	<u>Social Isolation</u>
B1	+ .2	+ 1.00	- .4	+ .3
B2	NO CHANGE	NO CHANGE	- .6	+ .6
B3	NO CHANGE	NO CHANGE	+ 1.4	- .6
B4	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
B5	- .5	NO CHANGE	NO CHANGE	+ .7
B6	+ .7	- .5	- .8	NO CHANGE
B7	NO CHANGE	+ 1.00	+ .4	NO CHANGE
B8	- .8	+ 1.00	NO CHANGE	+ .3
B9	- .5	- 1.00	- .2	- .7
B10	- .7	NO CHANGE	- .6	- .4
B11	NO CHANGE	+ 1.00	- .2	- .3
B12	- .7	NO CHANGE	- .8	NO CHANGE
B13	- .7	+ 1.00	- .2	NO CHANGE
B14	- 1.00	NO CHANGE	NO CHANGE	NO CHANGE
B15	- .8	+ .5	- .6	- 1.3
B16	- 1.00	+ 1.00	- .2	+ .3
B17	- 1.5	+ .5	- 1.8	+ .3
B18	- 1.5	+ 1.00	- .4	+ .4
B19		LEFT SCHOOL		
B20	NO CHANGE	NO CHANGE	- .8	+ .3

6 No change.
1 Deterioration.
12 Improvements.

N = 13
T = 5.5
P = .01

8 No change.
9 Deteriorations.
2 Improvements.

N = 11
T = 9.5
P = .02 +
+ Deterioration.

4 No change
2 Deteriorations
13 Improvements.

N = 15
T = 20
P = .02

6 No change.
8 Deteriorations.
5 Improvements.

N = 13
T = 45.5
Not significant.

Unforthcomingness continued to improve as did restlessness. Again these were the two areas in which the pilot study dance group showed such improvement. The other two areas showed that more individuals received poorer assessment of their behaviour in test 3 than received improved assessment.

Once again the Wilcoxon Matched-Pairs signed ranks test was used to establish significance levels for these changes.

Unforthcomingness Tests 2 and 3

Reference to Table 36 shows that there were thirteen changes of score between tests two and three, therefore $N = 13$

The sum of the ranks of the least frequent sign gave $T = 5.5$

The hypothesis that the group continued to improve scores for 'unforthcomingness' could be upheld at the .01 level of significance.

Restlessness. Tests 2 and 3.

Here $N = 15$ and $T = 20$ and so the hypothesis that the group also continued to improve scores for restlessness could be upheld at the .02 level of significance.

Aggression

Eleven subjects showed a change of score and of these nine showed worse scores in test three than they did in test two. $N = 11$ and $T = 9.5$. Reference to the table of critical values for 'T' showed this value to be significant at .02 level of significance. Thus there was a statistically significant deterioration in the scores for aggressiveness in the third test.

In Table 37 a comparison is made between scores for aggression in tests one and three. Of the eight girls showing no change in scores for aggression between tests 1 and 3, four had showed no change in test 2 but four had improved scores ~~for test 2~~ ⁱⁿ for test 2 before returning to their original score.

Application of the Wilcoxon test showed that $N = 11$ and $T = 3$ therefore, in spite of the fall back to less desirable scores in test three than in test two, the results in test three were still significantly better than in the first assessment.

Social Isolation

In the third assessment of this area eight girls showed worse scores than in the second test while five improved and six stayed the same. $N = 13$ and $T = 45.5$. Reference to the table of critical values for T shows that this value was not significant, therefore there was no significant change in scores between the two tests. Table 37 also compares scores made in the area of 'social isolation' in test three with those in test one. Of the five girls who showed no change in scores for this aspect of behaviour between tests one and three, three had improved their scores between tests two and three. Thirteen other girls improved their scores between test one and test three and only one deteriorated, though her deterioration was of quite considerable proportions. Reference to Wilcoxon test gave $N = 14$ and $T = 12$. This value for ' T ' is significant for $N = 14$ at the .01 level of significance.

In every area, then, there was a statistically significant improvement in behaviour between the start of the school year and the end of the year.

Table 37

BEHAVIOUR ASSESSMENT

SCHOOL B : SHOWING INDIVIDUAL CHANGES IN
 AVERAGED SCORES IN TEST 1 and 3
 - Two areas only.

<u>Name</u>	<u>Aggression</u>	<u>Social Isolation</u>
B1	NO CHANGE	- .4
B2	NO CHANGE	+ 1.3
B3	- 1.00	- 1.00
B4	NO CHANGE	- .4
B5	NO CHANGE	NO CHANGE
B6	- 1.00	- 3
B7	NO CHANGE	NO CHANGE
B8	- .5	- .7
B9	- 1.00	- 1.3
B10	- 1.00	- 1.00
B11	- .5	- 1.3
B12	- 1.00	- .7
B13	- 1.00	- .3
B14	NO CHANGE	NO CHANGE
B15	- .5	- 2.00
B16	NO CHANGE	NO CHANGE
B17	+ .5	NO CHANGE
B18	NO CHANGE	- 1.00
B19	LEFT SCHOOL	
B20	- .5	- .7

8 No change
 1 Deterioration.
 10 Improvements.

N = 11
 T = 3
 P = .01

5 No change
 1 Deterioration.
 13 Improvements.

N = 14
 T = 12
 P = .01

SCHOOL C

Table 38 shows the results of the assessment of behaviour for School C (Experimental Group). It should be remembered that this group had a more substantial dance programme in the second term.

TABLE 38BEHAVIOUR ASSESSMENT

SCHOOL C (E) : INDIVIDUAL CHANGES IN AVERAGE
SCORES BETWEEN TESTS 1 & 2

<u>Name</u>	<u>Unforthcomingness</u>	<u>Aggression</u>	<u>Restlessness</u>	<u>Social Isolation</u>
C1	- 1.5	- .5	- 1.2	- 1.3
C2	- .25	- .5	- .2	- .7
C3	- 1.00	- .5	- 1.00	- .7
C4	- .5	- 1.00	- .8	- .4
C5	- 2.00	- .75	- 1.00	- 1.3
C6	- .5	- .5	- 1.00	- 1.3
C7	+ 1.00	- .5	- .2	- .3
C8	.5	NO CHANGE	- .4	- 1.00
C9	- 1.25	NO CHANGE	- .6	NO CHANGE
C10	- .25	- .5	- .4	NO CHANGE
C11	- .25	NO CHANGE	- .2	NO CHANGE
C12	- .5	NO CHANGE	- .6	- 1.4
C13	- 1.00	- 1.00	- .4	- .7
C14	- 1.25	- .5	- 1.6	NO CHANGE
C15	- 1.25	- .5	- 1.00	- 2.00
C16	- .25	- 3.0	- 1.00	- 1.4

1 deterioration.
15 improvements.

N = 16
T = 9
P = .01

4 No change
0 deteriorations.
12 improvements.

N = 12
T = 0
P = .001

16 improvements.

N = 16
T = 0
P = .001

4 No change
0 deterioration.
12 improvements.

N = 12
T = 0
P = .01

Again the sections on aggression and social isolation showed least change but this group, as a whole, showed greater improvement in behaviour than any other group. It is however worth noting that two of those showing no improvement in aggression had the worst assessment for aggressive behaviour in the group (scoring maximum points on both occasions).

All these changes were obviously significant.

It is possible, of course, that a teacher would assess behaviour more favourably at the end of a school year, or at the end of two terms because she wished to think that her influence upon the class had been favourable in terms of improved behaviour. This was not true in the case of the control group and only marginally true for School A. The other two teachers may have felt differently about their own self-image. However the teacher of the class from School B had most of her group the previous year and the class teacher of the experimental group, like the teacher of the control group and the teacher from School A, had her class for a term before the experiment began. Particularly in School C there was a permissive atmosphere and the writer was never conscious of any desire on the part of teachers in the school to disguise discipline problems; indeed the teachers were only too ready to describe the latest "outrage".

In summing up it is possible to say that the results obtained from Schools B and C (Experimental group) support the view that dance can make an impact upon overt behaviour. School A, while not making significant improvement, did not show the deterioration in assessment of behaviour which might have been expected at the end of a summer term and which was shown by assessment of the control group.

Table 39 gives a summary of the results obtained in this section. Some individual changes of behaviour are discussed in the chapter entitled 'Some Individuals'.

Ranks Test of Significance

TABLE 3a : THE BEHAVIOUR ASSESSMENT RESULTS FOR ALL GROUPS
SUBJECT TO THE WILCOXON MATCHED-PAIRS SIGNED RANKS TEST

<u>Test for</u>	<u>School</u>	<u>Number</u> ¹	<u>Value T =</u>	<u>Level of Significance</u>
Unforthcom- ingness.	Control	19	0	.01 [⊗]
	A	16	49	Not significant
	B (T1&2)	19	0	.01 [⊗]
	B (T2&3)	13	5.5	.015
	C (E)	16	9	.015
Aggression	Control	8	19	Not significant
	A	8	6	Not significant
	B (T1&2)	14	0	.015
	B (T2&3)	11	9.5	.02 [⊗]
	C (E)	12	0	.015
Restlessness	Control	15	13	.015 [⊗]
	A	15	34	Not significant
	B (T1&2)	19	21.5	.015
	B (T2&3)	15	20	.02
	C (E)	16	0	.015
Social Isolation	Control	16	9	.01 [⊗]
	A	17	66.5	Not significant
	B (T1&2)	18	11	.015
	B (T2&3)	13	45.5	Not significant
	C (E)	12	0	.01

⊗ : Deterioration.

¹ Number = individuals showing changes of score.

Note : All levels of significance as for a two-tailed test.

CHAPTER 9.ASSESSMENT OF MOVEMENT QUALITY AND ABILITY
TO WORK TOGETHER IN MOVEMENTAbstract

A method of assessing success in a dance situation was devised. Results showed that the control group did less well on the second occasion than they did on the first. The only dance group which was assessed in this way made significant improvement. It is felt however that the method of assessment was rather crude and it proved impossible to correlate the results of this assessment with results in the other sections of this study.

CHAPTER 9MOVEMENT ASSESSMENTMethods of Assessing 'Movement'

M. North (1972) points out,

"there is no common method of qualitative evaluation or scoring (of movement) which can be applied with any degree of accuracy".¹

Yet attempts are made to assess success in dance. In the writer's own college students' solo and group dances are assessed and given marks which have some influence upon the students' final marks in the teacher's certificate examination of Physical Education. This kind of assessment is based upon criteria known to the dancers and requires assessment by experienced teachers. This form of assessment was not appropriate to the teaching situation in special schools. Attempts to assess the improvement in movement in individuals in Schools A and B were based upon photographic evidence. This was of limited value. While ballet is based upon positions which can be 'caught', in 'creative' or 'modern' dance the 'action' is more important than 'position' and, while photography can 'freeze' action, it usually tends to flatten the effect of movement. Ciné and close circuit television can be used and these supply an excellent check to the memory of the observer. However the presence of a photographer, either 'still' or 'moving', in every dance lesson is seldom practicable and would always be an intrusion into the teaching situation.

1. North (1972) pg. 123.

In this study the teacher herself took photographs, with both 'still' and 'ciné' cameras. The latter was a tiny pocket version which was relatively unobtrusive in use. Since the teacher was also occupied suggesting developments, encouraging those who needed encouragement and providing accompaniment, not all developments could be photographed. However, photographs did provide some useful evidence and where appropriate these have been used to illustrate the text.

Student observers were used in an attempt to assess the performance of individuals at the end of the programme in Schools A and B. This, while providing some interesting comments on individuals, did not provide any 'before and after' comparisons.

A study of the work of M. North (1972) and B. Cox (1963) led to a further search for a means of evaluating success in dance. The work of the former proved most helpful.

North used movement observation as a means of making personality assessments. For this present study all that was required was a means of assessing any changes in the quality of movement arising from dance classes and a means of noting whether improved performance in dance was reflected in other aspects of the study. M. North examined movement behaviour in classroom, playground and at home and found that "there have been revealed quite distinctly, the same patterns of (movement) behaviour as shown during a 30 minute lesson." ¹.

1. North (1972) p.43.

The writer decided to evaluate the performance in dance of both groups of children from School C. This was to be done before and after the dance programme.

Twenty two students were recruited to carry out the evaluation. All were following a 'Main level' or Bachelor of Education Course in Physical Education and had studied the technique of movement observation and recording during their course. It had been found in the past that when students were required to evaluate dancers they tended to approve of those dancers whose movement most nearly approached their own 'typical' movement patterns. Particularly when students were required to assess child dancers there was a lack of objectivity. Students were much more objective when they were required to grade the success of individuals in fulfilling narrowly defined tasks. Thus, though every individual had a slightly different concept of 'suddenness', they were able to grade an individual's success in producing a sudden movement. With training using video tapes and live performers, this group of students reached a point where there was never less than 90% agreement on a mark out of five for a specific movement task. While even greater consistency would have been desirable, this level was accepted as 'useful'. A variety of assessment forms was tested. The students preferred to award a numerical mark rather than agreeing with a statement. The form found simplest to use is included in Appendix Four. This was the version used for assessing the success of girls from School C in the following movement tasks.

The assessment used in this study

1. How well can she move directly, flexibly, strongly, lightly, suddenly, and with sustainment? (Laban's six basic elements 1948).
2. How well does she use levels and different directions ?
3. How well does she use her body - use of different body parts, achievement of a full stretch ?
4. How well can she 'freeze' a movement ?
5. How well does she respond to music ?
6. Her relationship with others in a movement situation was also assessed - her ability to lead and to follow in a dance situation, her sensitivity to the movements of others in the dance and her contribution to the planning of a simple group dance.

The assessment form, as can be seen in Appendix Four, took the form shown in the following example.

TASK 1

Demonstrate FLEXIBLE MOVEMENT. Music The Swan Girls dance/move ..

Names - 1 2 3 4 5 +

Also note USE OF LEVELS - 1 2 3 4 5 +

Total scores awarded are also given in Appendix Four.

The practice of awarding numerical marks for movement in gymnastics, during skating and ballroom dancing is well established. Such marks are obviously to some extent subjective but tend to be reasonably consistent. The normal practice in these activities is to have at least four judges. It was not possible for students to work in teams of more than three; most worked in pairs. To cover problems arising from such small teams of judges closed circuit television was used and all the students were able to observe movement together and marks were then, if necessary adjusted. In practice, very few marks had to be adjusted more than one point.

Administration

The movement assessment took place in the students' college immediately preceding and following the dance programme. Girls were brought by bus from their school to spend the day in college. Thirty five girls from School C (experimental class and control class) were put into seven groups of four and three groups of three, based on the sociometric test given prior to that particular assessment. This meant that some girls were differently grouped on the two occasions, but as far as possible the same students worked with the same girls. Eight groups worked with two students and two groups with three students. On the first occasion the girls were shown round the college by their students leaders in order that both students and girls should feel less strange with one another. The writer took overall control of the movement session but each

student team was responsible for demonstrating and explaining what was required. In order that results should not be too coloured by the superior performance of any one student, the best student demonstrator of a particular movement task was asked to show her movement to the whole group. Demonstrations were not used a great deal in dance lessons but were felt essential here in order to overcome possible language problems. In spite of the 'centralisation'¹ of the work, the students managed to achieve a surprising degree of intimacy with their own group.

Some music used in the first assessment was subsequently used in dance lessons, so other music was substituted for these pieces for the second assessment.

One girl (D2) was absent on both occasions. D7 from the control group refused to participate after the first activity on both occasions. G4, from the experimental group took part, albeit rather reluctantly, on the first occasion and refused to join in at all on the second occasion until the group dance at the end. This girl was always rather shy in dance lessons, but on a few occasions danced a solo part. Indeed she danced a solo at the school open day two weeks after the final assessment.

It is acknowledged that the method of assessment was rather 'crude', but it did provide a rather more objective approach than that provided by photographs. It also permitted some comparison between the group which did not follow a dance programme, i.e. the control group, with a dance group.

1. 'Centralisation'. That is all groups worked on the same task at the same time and the teacher in overall charge (i.e. the writer) decided when all groups should move on to the next task.

It was considered important too that both groups should be assessed at the same time and with the same sense of 'occasion'.

Results

The scores were divided into two groups i.e. those concerned with an individual's movement performance and those concerned with her ability to work with others in a movement class.

Table 40 shows the difference in scores in the former achieved by individuals in the control group on the two occasions. 'One' was a lowest score and 'five' the highest possible score thus a + sign shows improvement in movement.

TABLE 40

MOVEMENT ASSESSMENT.

CONTROL GROUP DIFFERENCE IN SCORES
BETWEEN ASSESSMENT 1 and 2.

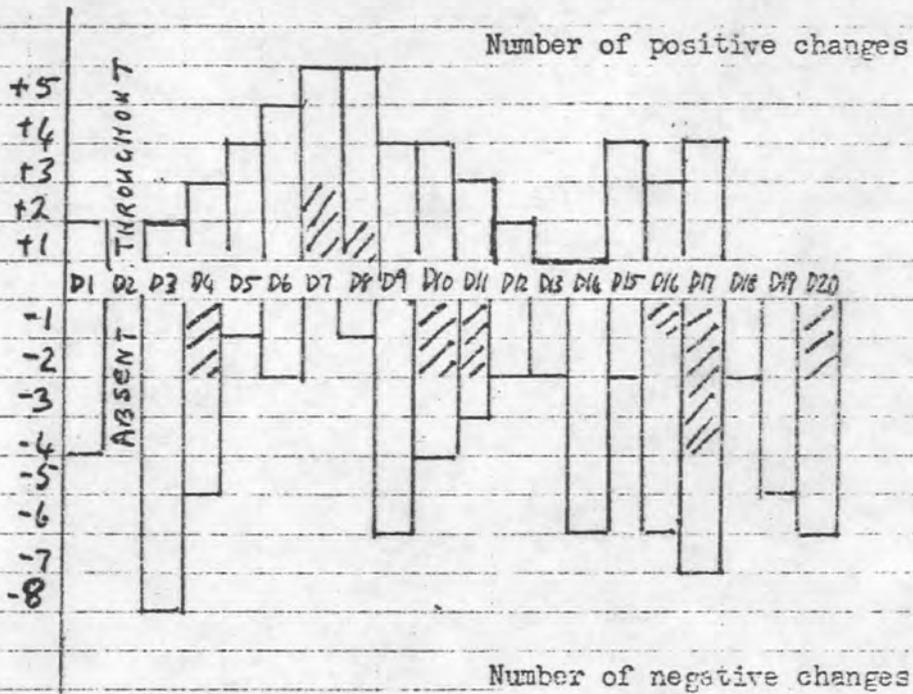
Name	CONTROL GROUP												CHANGE		
	A	B	C	D	E	F	G	H	I	J	K	L	#	-	No change
D1	0	0	-1	0	-1	-1	0	0	-1	+1	0	0	1	4	7
D2	Not present on either occasion														
D3	-1	0	-1	-1	-1	-1	0	+1	0	-1	-1	-1	1	8	3
D4	-1	-1	0	+1	+1	0	-2	0	0	-1	-2	0	2	5	5
D5	+1	+1	0	+1	0	0	0	0	-1	0	0	0	3	1	8
D6	0	-1	0	+1	+1	0	0	0	-1	0	+1	+1	4	2	6
D7	+1	0	+3	+1	0	0	+2	0	+1	0	0	0	5	0	7
D8	+1	0	0	0	0	-2	+1	0	0	+1	+1	+1	5	1	6
D9	+1	-2	-1	-1	+1	-1	0	-1	0	-1	+1	0	3	6	3
D10	0	0	-1	+1	-1	-2	+1	+1	0	0	-2	0	3	4	5
D11	+1	0	0	+1	-1	-2	0	0	0	0	-2	0	2	3	7
D12	0	0	0	-1	0	0	+1	-1	0	0	0	0	1	2	9
D13	0	0	-1	0	-1	0	0	0	0	0	0	0	0	2	10
D14	-1	0	0	0	-1	-1	-1	-1	0	0	0	-1	0	6	6
D15	0	0	0	+1	0	0	+1	0	0	+1	-1	-1	3	2	7
D16	-1	-1	0	0	-2	0	+1	-1	0	-1	-1	+1	2	6	4
D17	-1	-2	-1	+1	0	0	-2	-3	0	0	-1	-2	1	7	4
D18	0	-1	+1	0	0	0	-1	0	0	+1	0	0	2	2	8
D19	0	0	0	-1	-1	-1	0	-1	0	-1	0	0	0	5	7
D20	0	0	0	-1	0	-1	0	-2	-1	0	-2	-1	0	6	6
Total												38	72	118	

- A = Flexible movement.
 B = Direct movement.
 C = Strong movement.
 D = Light movement.
 E = Sudden movement.
 F = Sustained movement.
 G = Use of different levels.
 H = Use of different directions.
 I = Ability to obtain a full stretch.
 J = Use of different body parts.
 K = Ability to 'freeze' a movement.
 L = Sensitivity to the music.
 + = Number of positive changes.
 - = Number of negative changes.

Table 11
Movement Assessment

Control Group

Showing changes in each individual's scores in the second assessment



Shaded portion shows changes of two or more points for any given assessment.

Students did not on the second occasion have access to the marks given at the first assessment. Nor were they officially told which was the experimental group. Of course the pupils themselves may have informed their student teachers of this.

Table 40 does not show which girls had high marks and maintained them throughout both assessments (though these can be seen in Appendix Four). D1, D5 and D6 all showed a high proportion of 'no change' marks but all three were, in fact, amongst the highest placed individuals in both assessments; D13, on the other hand, also showing a high proportion of 'no change' in assessment received nine out of twelve marks of one in the first assessment and eleven out of twelve marks of one in the second assessment. The students reported, "just didn't try".

The 'judges' were, on the whole, reluctant to award a mark of five; only two fives were awarded to the control group on the first occasion and only one on the second occasion: there were only two changes of three points and fifteen of two points; all other changes were of one point only. It may be that only the seventeen changes of more than one point were really significant.

Table 41 shows these changes in diagrammatic form. The diagram shows quite clearly that, while the group as a whole received a lower assessment on the second occasion than on the first, most of the changes were negligible. These results are much as we would expect with the change of one mark either way being due to slightly different standard of assessment on the two occasions. The weighting towards the negative side could have been due to awareness of the dancers that they were less experienced than the other group.

There is little to be gained from examination of different aspects of the assessment except to note that the aspects in which this group did best as a group on the first occasion were lightness or delicate movement, suddenness and sustainment, while in the second assessment

lightness and suddenness scored high but sustainment deteriorated. The poorest performed activity by this group was the same in both tests - the ability to completely stretch the body received a total of thirty eight points (i.e. an average of two) on both occasions.

An attempt was made to examine the statistical significance of the positive and negative changes recorded in the movement assessment. In order to do this the difference between the positive and negative scores awarded to each individual was recorded and this data was then subject to the Wilcoxon matched-pairs signed ranks test of significance.

Table 42 below shows the difference in scores.

Table 42

Movement Assessment

Difference between positive and negative changes
in the second test

	<u>Positive</u> <u>Changes</u>	<u>Negative</u> <u>Changes</u>	<u>D</u>	<u>Rank</u>
D1	1	4	- 3	- 9
D3	1	8	- 7	- 18
D4	2	5	- 3	- 9
D5	3	1	+ 2	+ 6
D6	4	2	+ 2	+ 6
D7	5	0	+ 5	+ 13.5
D8	5	1	+ 4	+ 11.5
D9	3	6	- 3	- 9
D10	3	4	- 1	- 2.5
D11	2	3	- 1	- 2.5
D12	1	2	- 1	- 2.5
D13	0	2	- 2	- 6
D14	0	6	- 6	- 16
D15	3	2	+ 1	+ 2.5
D16	2	6	- 4	- 11.5
D17	1	7	- 6	- 16
D18	2	2	0	
D19	0	5	- 5	- 13.5
D20	0	6	- 6	- 16

N.B. D2 Absent for both tests.

When the ranks of the less frequent sign were added a value of $T = 37$ was given. Reference to the table of significant values of T in the Wilcoxon test showed that for $N = 18$ the difference was significant, at a level of .05. It is thus possible to state that the control group's performance over the twelve areas assessed showed significant deterioration on the second occasion.

Table 43 shows the changes in score for the experimental group on the individual movement section of this assessment.

Table 44 shows these changes in diagrammatic form.

C1 and C11 had the highest assessment in this group on the first occasion; C1 showed relatively little change while C11 continued to improve.

It is worth noting that C4 gave only token attention on the first occasion and opted out entirely on the second occasion until the group work section when she participated with some enthusiasm. She could be equated with D7 from the control group.

The experimental group had, in addition to the very much bigger number of positive scores, many more scores of two or three - fifty seven in all. Clearly the experimental group showed greater improvement in movement than the control group. This was to be expected since the former group had been following a dance programme. This is not to say that individuals in the control group, e.g. D5, did not perform better on both occasions than the majority of the experimental group.

TABLE 43

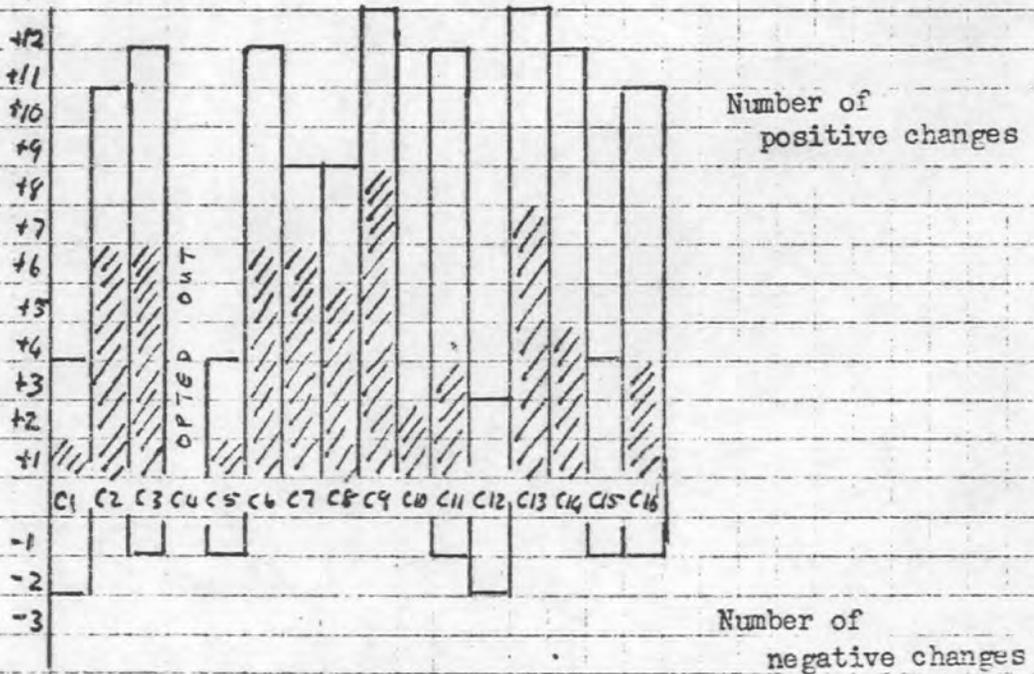
MOVEMENT ASSESSMENT

Name	EXPERIMENTAL GROUP												DIFFERENCE IN SCORES			
	A	B	C	D	E	F	G	H	I	J	K	L	+	-	No change	
C1	0	0	+1	-1	0	+1	0	+1	0	-1	0	+2	3	2	7	
C2	0	+1	+1	0	+1	+1	+3	+2	+2	+1	+3	+3	10	0	2	
C3	+1	+2	+3	-1	+1	+1	+2	+3	+2	+1	+1	+2	11	1	0	
C4	OPTED OUT OF SECOND TEST AND PART OF FIRST.															
C5	+1	0	0	+1	0	0	0	0	0	0	-1	+2	3	1	8	
C6	+1	+2	+2	+2	+2	+1	+1	0	+2	+1	+1	+2	11	0	1	
C7	0	+3	+2	+1	+2	+2	+1	0	+2	+2	0	+1	9	0	3	
C8	+1	+2	0	+2	+3	+1	+1	+1	0	0	+3	+3	9	0	3	
C9	+1	+2	+2	+1	+2	+1	+1	+2	+3	+2	+2	+2	12	0	0	
C10	+1	+2	+1	0	+1	+1	+1	+1	+1	+1	+1	+2	11	0	1	
C11	+1	+1	-1	+3	+1	+2	+2	+1	+1	+1	+1	+1	11	1	0	
C12	0	0	+1	-1	0	0	0	0	-1	-1	0	0	2	2	8	
C13	+3	+1	+2	+2	+1	+2	+2	+1	+1	+2	+2	+1	12	0	0	
C14	+1	0	+1	+2	+1	+2	+1	+1	+2	+1	+1	+3	11	0	1	
C15	0	0	+1	+1	0	0	0	0	-1	0	+1	0	3	1	8	
C16	+1	+1	+1	+2	+2	+2	+1	0	+1	+1	+1	+1	11	0	1	
													<u>TOTAL</u>	129	8	43

- A = Flexible movement.
 B = Direct movement.
 C = Strong movement.
 D = Light movement.
 E = Sudden movement.
 F = Sustained movement.
 G = Use of different levels.
 H = Use of different directions.
 I = Ability to obtain a full stretch.
 J = Use of different body parts.
 K = Ability to 'freeze' a movement.
 L = Sensitivity to the music.
 + = Number of positive changes.
 - = Number of negative changes.

Table 44.Movement AssessmentExperimental Group

Showing changes in each individual's
scores in the second Assessment



Shaded portion shows changes of two or more points for any given assessment.

The programme showed the expected improvement, but the consistency of improvement shows, Table 44, was not expected. The improvement in sensitivity to music was the most outstanding. Signs had been noted in all the dance groups of an increasing willingness to listen to music. On a number of occasions girls came to suggest music which they had heard which might be used in dance. Usually these were 'pop' songs or advertising jingles, but sometimes the music was put forward appropriately for certain movements. The domestic science teacher in School C told the writer how girls discussed with her the music used in dance. For example she reported one girl saying "You should hear S.J.'s music; it's 'fab'." (The music in question was that of the Lilac Fairy from Tchaikovsky's "Sleeping Beauty".).

The total score for sensitivity to music was higher in assessment two than any other score and gave an average of 3.2 per individual. The aspects scoring high in the first assessment were strength, lightness and suddenness. On the second occasion all three continued to score high but were joined by 'ability to freeze a movement' and 'sensitivity to music'. The latter two aspects tend to go together since greater sensitivity to the music leads to expectation of the moment to 'freeze the movement'. The higher scores for differences in 'tension' or 'weight' and for 'suddenness' were common to both groups. The aspect showing the poorest marks for the experimental group in the first assessment was 'ability to use different levels' and this also had the poorest mark in the second assessment.

No scores of five were registered in the first assessment but there were eleven such marks in the second occasion. There were no negative scores when the change of one point either way was ignored, the group as a whole clearly made improvement in its ability to perform basic movement following a dance programme.

As with the control group the differences between positive and negative changes were subject to the Wilcoxon matched-pairs signed ranks test to note the level of statistical significance. Table 45 gives this data.

Table 45

<u>Movement Assessment</u>			
<u>Experimental Group. Positive and Negative</u>			
<u>Changes - Differences</u>			
	<u>Positive Changes</u>	<u>Negative Changes</u>	<u>D</u>
C1	3	2	+ 1
C2	10	0	+ 10
C3	11	1	+ 10
C5	3	1	+ 2
C6	11	0	+ 11
C7	9	0	+ 9
C8	9	0	+ 9
C9	12	0	+ 12
C10	11	0	+ 11
C11	11	1	+ 10
C12	2	2	0
C13	12	0	+ 12
C14	11	0	+ 11
C15	3	1	+ 2
C16	11	0	+ 11

There being no larger negative changes $T = 0$ and one is able to say that the experimental group showed a positive improvement in performance on the occasion of the second assessment at a level of significance of .01.

An attempt was made to correlate the changes in score in the movement assessment with the changes in behaviour assessment. This proved an unprofitable exercise and it was decided that the most useful time to compare these changes was when individuals who were in some way outstanding were discussed. This discussion takes place in the next chapter.

Working together in movement

As has already been explained, great emphasis was placed in the dance programme on working together with others and this ability was also assessed by the students as part of the total movement assessment. The aspects for which marks were given were as follows :-

- (a) ability to lead and ability to follow a partner;
- (b) the part played by the individual in planning a group dance;
- (c) her sensitivity to others during the group dance. By this latter point was meant the way a girl adjusted her movement to accommodate that of others in the group and her response in movement to the activity of others during the group dance.

CONTROL GROUP

Table 46 gives the changes in score for these aspects for the control group.

TABLE 46

MOVEMENT ASSESSMENT

CONTROL GROUP : CHANGES IN SCORES
FOR WORKING TOGETHER

Name	<u>CHANGES</u>				<u>CHANGES</u>			<u>Average Change</u>	<u>Signed Rank</u>
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>+</u>	<u>-</u>	<u>No change</u>		
D1	0	0	0	0	0	0	4	-	
D2	NOT PRESENT FOR ASSESSMENT								
D3	0	-1	-1	-1	0	3	1	-.75	- 12
D4	+1	+1	-2	-1	2	2	0	-.25	- 3
D5	0	0	-1	-2	0	2	0	-.75	- 12
D6	0	0	-2	-1	0	2	0	-.75	- 12
D7	0	0	0	0	OPTED OUT OF THIS SECTION				
D8	+2	+2	+1	+1	4	0	0	+ 1.5	+ 16
D9	+1	-1	-2	0	1	2	0	-.5	- 8
D10	+1	-1	+1	0	2	1	1	+.25	+ 3
D11	+2	+2	+1	+1	4	0	0	+ 1.5	+ 16
D12	0	0	0	-2	0	1	3	-.5	- 8
D13	0	-1	0	0	0	1	3	-.25	- 3
D14	0	-1	+2	+1	2	1	0	+.5	+ 8
D15	+1	+1	-1	0	2	1	0	+.25	+ 3
D16	0	0	-1	-1	0	2	2	-.5	- 8
D17	0	-2	-2	-2	0	3	0	- 1.5	- 16
D18	0	-1	-1	0	0	2	0	-.5	- 8
D19	0	+1	-2	0	1	1	2	-.25	- 3
D20	-1	-2	-1	-1	0	4	0	- 1.25	- 14
TOTAL					<u>18</u>	<u>28</u>	<u>16</u>		

A = Leading a partner.

B = Following a partner.

C = Contribution to planning.

D = Sensitivity to others in the dance.

Once more changes in score may cover differences like those between D7 who opted out of the group and partner work on both occasions and therefore showed no change of score while on three out of the four sections D1 received a score of Four but still showed 'no change' from Table 45.

Looking at overall scores we see that in this part of the assessment the changes outweigh the 'no change', with negative changes outweighing positive ones. There were also more changes exceeding one point in either direction than in the section on individual movement patterns.

Because fewer areas were involved in this part of the assessment it was decided to use a different method of ranking than was used in the last calculation. This time an average mark for change of score in 'working together in movement' was reached by averaging the changes in the four assessments. This mark is given in the penultimate column in Table 46. To examine the significance of change the Wilcoxon Matched-Pairs signed Ranks test was again used. The signed ranks are given in the last column of Table 46. $N = 17$ and T (the sum of the ranks with the less frequent sign) = 36.

Reference to the table of critical values for T showed that for $N = 17$ the critical value for T at .05 level of significance was 35. There was no significant difference in the positive and negative changes for working 'together in movement' for the control group though the deterioration in score almost reached the significance level of .05.

Experimental Group

Table 47 gives the difference in scores obtained by individuals in the experimental group in the two assessments. If the teaching method was effective then one would expect a significant improvement in marks given in this section of the assessment. As can be seen there were 44 improved scores and only three scores which were lower in the second assessment than in the first. To assess the statistical significance of this difference the Wilcoxon test was again used. As for the control group the average change for the four areas was assessed for each girl and these average scores are given in the penultimate column while in the last column of Table 48 the signed ranks are given. The sum of the ranks of the least frequent sign was found to equal $14 = T$. For $N = 15$ the critical value of T at a level of .01 is given as 16, therefore, it may be stated that there was a positive improvement in the assessment of the ability of the experimental group to work together in movement at a level of significance of .01.

TABLE 47

MOVEMENT ASSESSMENT

EXPERIMENTAL GROUP E WORKING TOGETHER WITH
OTHERS IN MOVEMENT : DIFFERENCE IN SCORES IN
TESTS ONE AND TWO

Name	1		2		3		4		+	-	No change	Average Change	Signed Rank
	A	B	C	D	C	D	C	D					
C1	+1	0	+2	0					2	0	2	+ .75	+ 7
C2	+1	+2	+2	+2					4	0	0	+ 1.75	+ 13.5
C3	+1	+2	+1	+2					4	0	0	+ 1.5	+ 10.5
C4	-2	-3	-1	0					0	3	1	- 1.5	- 10.5
C5	0	+1	+4	+3					3	0	1	+ 2.0	+ 15
C6	+2	+1	+1	+2					4	0	0	+ 1.5	+ 10.5
C7	+2	+2	+2	+1					4	0	0	+ 1.75	+ 13.5
C8	-1	-1	+1	-1					1	3	0	- .5	- 3.5
C9	+2	0	0	+1					2	0	2	+ .75	+ 7
C10	+2	+1	0	-1					2	1	2	+ .5	+ 3.5
C11	0	0	+1	+1					2	0	2	+ .5	+ 3.5
C12	0	0	0	0					0	0	4	0	
C13	+1	+2	0	-1					2	0	2	+ .5	+ 3.5
C14	+1	+2	0	0					2	0	2	+ .75	+ 7
C15	0	+1	-1	+1					2	1	0	+ .25	+ 1
C16	+1	+1	+2	+2					4	0	0	+ 1.5	+ 10.5
TOTAL									<u>44</u>	<u>3</u>	<u>18</u>		

C4 opted out of all this section except for the group dance when she appeared to enjoy taking part though she contributed nothing to planning this section, and showed a lack of awareness of others during the dance. (C4 could in fact dance well but appeared to dislike working with the students).

1. A = Ability to lead a partner.
2. B = Ability to follow a partner.
3. C = Contribution to a group dance.
4. D = Sensitivity to others in a group dance.

An attempt was made to correlate the scores obtained in this section of the assessment with sociometric rating. The results gained from using Spearman rank order correlation are given in Table 48. The rank order in the 'open' version of the sociometric test on the first occasion was compared with the rank order of the average assessment (average of four marks) given for working together in the first movement assessment; this was repeated for the second occasion. As can be seen there was an insignificant correlation between the two ranks :-

Table 48

SPEARMAN RANK CORRELATION
 COEFFICIENT WHEN SCORES FOR ABILITY TO WORK
 TOGETHER IN MOVEMENT ARE COMPARED WITH
 SOCIOMETRIC RATING

	<u>BEFORE EXPERIMENT</u>	<u>AFTER EXPERIMENT</u>
CONTROL GROUP	$rs^1 = + .28$ Not significant	$rs^1 = + .41$ Not significant
EXPERIMENTAL GROUP	$rs^1 = + .28$ Not significant	$rs^1 = - .07$ Not significant

1. rs = Spearman rank correlation coefficient corrected for ties.

The large number of ties and the number of factors involved in the assessment of 'ability to work together in movement' militated against the correlation of these two assessments.

It may be that again the most useful way of using the material from this assessment is when we look at individuals in the next chapter.

Conclusion

While it was not possible to tie the results of the students' assessment of the children's performance in 'dance' with the information given in earlier chapters, the method of assessment used provides evidence of the expected improvement in performance by the group following a dance programme. The control group did not show similar improvement.

CHAPTER 10Abstract

This chapter looks at individuals whose reaction to dance was outstanding in some way. It makes use of the three tests described previously as well as comments by class teachers, the girls' own comments, the writer's observations in the dance lessons and some of the photographs taken.

Note When quotations from pupils' work are given the original spelling and punctuation have been used.

CHAPTER 10SOME INDIVIDUALS

(All names have been altered)

For some girls dance appeared to act as an outlet for pent up energy, possibly for frustration. For some it appeared to build up the individual's self confidence. Dance was a means of 'showing off' to some, for others it seemed to be a means of 'losing oneself'. For some it was probably just another subject. Occasionally an individual became 'bored' by dance and decided to 'opt out' of the lesson but this reaction was always short lived.

B18, whom we shall call Sylvia, provided one of the most interesting studies and we were able to see something of her progress in the series of photographs given on Pages 235 & 236. These photographs were selected from a large number taken by the writer during the dance lessons.

Sylvia had a stated I.Q. of 69 and was an epileptic. She was taking phenobarbitones at the time of the experiment and she had a slight heart condition. Before the experiment her class teacher wrote, "She often wilts and this has an effect on both her physical and mental performance." Nevertheless the school medical officer had said that she need not be excluded from physical education lessons.

Sylvia had only one close friend, a girl of very low intelligence, who also took fits of some sort in school.

In the first sociometric test, Sylvia had a rank in the 'open' version of 16.5 (in a group of 20). The teacher considered her not a very aggressive individual but found her difficult to teach.

'Sylvia' (Bl8), progress during the dance programme

1. First lesson Bl8 has long hair.



2. Sylvia dancing with material



3. New found poise. "I felt like a bootiful real ballerina".



Her average score for 'unforthcomingness' was 3.5^{1.} (compared with a class average of 2.97), for 'aggression' it was 2.0 (compared with a class average of 2.62), for 'restlessness' 3.4 (compared with 3.22) and for 'Social Isolation' 4.00 (compared with 3.52).

During the first two lessons Sylvia fainted and caused a mild diversion but the girls accepted her faint as a fairly normal procedure. The class teacher dealt with her and the lesson proceeded. The photograph on Page 235 shows Sylvia's stance in the early part of the first lesson. She drooped, gazed into space and appeared to have no interest in what was going on. In the third lesson she was given a small piece of material which she particularly liked. She joined in the 'Indian hand dance' with the material 'hiding' her face. After the lesson she wrote, "S licks the mucis and dansing and I like dancing with me hands". She also enjoyed a partner dance with her special friend. From then on she joined in each lesson. She began to enjoy strong flexible movement and manipulated material with considerable skill. Her spatial awareness improved and she moved easily at the different levels and directions. She particularly enjoyed rising and falling movements. Photograph two shows her dancing with material. Sylvia is the girl in long black trousers. Unlike the rest of the group in the photograph she involves both sides of her body in the movement. Something of her new vigour shows in her painting of the sea (shown in the photograph on Page 105) which she painted immediately after a dance lesson where the central theme had been 'the sea'. Her class teacher was astonished when, instead of waiting to be told what to do on her return to the classroom, Sylvia immediately got out paper and paint and set to work on her 'sea painting'.

1. The higher the score the less desirable the behaviour in the eyes of the class teacher.

After the first two lessons Sylvia never again fainted in a dance lesson. The photograph on Page 236, taken during the last lesson, when students were present, indicated her growing self confidence. After that lesson she wrote, "I felt like a bootiful real ballerina." At that time her class teacher wrote, "Her fainting spells seem to have stopped. She has become more part of the class. She seems less frightened to approach others and talks more. Much more physical activity. Attention span improving."

The class teacher's assessment at the end of this period indicated the improvement which had taken place. A further assessment was made after a term's dance with the class teacher and these are all given in Table 49 below. The 'average' scores of the whole class are given in brackets.

TABLE 49

B18'2 SCORES IN SOCIOMETRIC TEST AND
BEHAVIOUR ASSESSMENT

SOCIOMETRIC TEST		(Number in group = 20 in tests 1 & 2 and 19 in test 3).		
<u>Rank</u>		<u>Test 1</u>	<u>Test 2</u>	<u>Test 3</u>
Open choice version		16.5	9.5	1.5
Weighted score		14.5	14.5	2
<u>BEHAVIOUR ASSESSMENT</u>				
		<u>Test 1</u>	<u>Test 2</u>	<u>Test 3</u>
Unforthcomingness		3.5 (2.97)	2.5 (1.82)	1.0 (1.27)
Aggression		2.0 (2.62)	1.0 (1.87)	2.0 (1.89)
Restlessness		3.4 (3.22)	2.4 (2.57)	2.0 (2.25)
Social Isolation		4.0 (3.52)	2.6 (2.99)	3.0 (2.96)

Close friendships were slower to change than the looser groupings shown in the open tests but by the end of the year there was no doubt at all about her popularity as shown in sociometric rating. The reason for the rise in the rating for aggression is not known except that the class teacher felt that as Sylvia gained in confidence so she was more willing to stand up to others. It may be useful to consider how Sylvia compares with the rest of her class in the improvement seen in the behaviour test. If we examine the figures in brackets we will see that before the programme commenced she had a worse than average score in three out of four sections. After the programme of dance taken by the writer she had better than average scores in three out of the four sections. Her rise in popularity over the three sociometric tests was quite startling. Having been placed eighteenth in the first open test she improved to tie for first place in the third test. She also tied for first place in the weighted version. Yet Sylvia continued to choose to work with the same close friend and tended to refuse others as partners in dance.

About half way through the first term Sylvia confided to the writer that dance was 'fab'. About the same time the deputy head told the class teacher with some astonishment, "Sylvia actually smiled at me today". She went on to describe how Sylvia had talked with some animation about the use of material in dance.

Sylvia was not the only girl of low sociometric status, considered by her teacher to be very withdrawn and restless, who was successful in dance. C5, whom we shall call 'Sally', was another such case. Sally had an I.Q. of 70 and was better at reading and writing than average for her group. She was friendly with a small group of girls of high sociometric standing and was very nervous in the classroom.

Her class teacher wrote, "She is a lone wolf living in a world of fantasy. She is unhappy and withdrawn". Her high sociometric status in the first test, in fact, suggests that she was not as much a lone wolf as her class teacher thought. However her tendency to withdraw was amply illustrated in the dance classes. At the beginning of the first lesson the girl said to the visiting teacher, "I suffer from nerves, you know. I can't dance". She then withdrew to a corner of the room for the whole lesson. Occasionally Sally would help herself to a piece of material and play with it in a corner but otherwise she remained detached. The class teacher's observation sheet pin points the moment of change. It was the third lesson from the end of the first term. The class was structuring a dance round the music and story of the ballet 'La Boutique Fantasque'. Sally came to the dance teacher and said, "I could bring my doll and dance with her". Her solo with the doll can be seen in Photograph Pg, 241. The doll motif was repeated many times in term two but Sally took part in many other dances also. On her second visit to College for her final movement assessment the students gave her a mark of 5/5 for participation in planning. She suggested a 'story' in which she had to play a solo part and showed every evidence of enjoying herself. Again her doll had a part but she played out her part before her peers, students and the CCTV camera. After the experiment was concluded, Sally took part in a group dance given during the school open day. Her mother told the teacher she was overjoyed to see her daughter joining in with such obvious enjoyment.

Sally's scores are given in Table 50 and they can be compared with the average for her group given in brackets.

Sally (C5) performing a solo dance



Linda's (B1) painting of the dancing material



TABLE 50.

G5's SCORES IN THE SOCIOMETRIC TEST AND
BEHAVIOUR ASSESSMENT

(a) <u>Sociometric Tests</u>	<u>Test 1</u>	<u>Test 2</u>
Open choice test - rank	4.5	3.5
<u>Weighted score</u> - rank	9.5	3.5
 (b) <u>Behaviour assessment</u>		
Unforthcomingness	4.0 (2.78)	2.0 (2.03)
Aggression	4.0 (2.78)	3.25 (2.06)
Restlessness	4.4 (3.36)	3.4 (2.63)
Social Isolation	3.6 (3.56)	2.3 (2.11)

(c) Movement Assessment

	<u>/</u>	<u>∩</u>	<u>∧</u>	<u>∨</u>	<u>/-</u>	<u>-/</u>	<u>levels</u>	<u>Direction</u>	<u>Stretch</u>	<u>Parts</u>	<u>Freezing</u>	<u>Sensitivity to music</u>
Test 1	1	1	1	1	2	2	1	1	1	2	2	1
Test 2	2	1	1	2	2	2	1	1	1	2	1	2
							<u>Leading</u>	<u>Following</u>	<u>Planning</u>	<u>Sensitivity to others</u>		
							Test 1	1	1	1	1	
							Test 2	1	2	5	4	

Symbols used in the above and following examples are those commonly used in dance notation, i.e.

- / indicates 'effort' and is always present.
- ∩ indicates a flexible movement.
- ∧ indicates a direct movement.
- ∨ indicates 'strong' movement.
- ∨ indicates light movement.
- /- indicates sudden movement.
- / indicates sustained movement.

As can be seen, Sally still has worse scores than the mean for her group in two out of the four sections in the behaviour test but she nevertheless showed considerable improvement - the second highest improvement in the group. Sally still had a long way to go. She became involved in the dance long after the rest of her group; she had, in fact, little over one term's dance. Her actual movement at the time of the second assessment did not show improvement except in the group dance, where she showed great sensitivity to the other dancers. She had improved in terms of flexibility and lightness but she found direct, strong movements beyond her. She had not a very good sense of the space around her body; she had difficulty in moving at different levels and in different directions. All movements were close to the centre of her body and she was afraid to move out into general space. She was still unable to lead a partner in the second test, but she was now able to follow another's lead with some success. The important change was her very much greater involvement and if one was able to continue to involve her in dance she might well go on to further improve her overt behaviour.

In all three classes, as in the pilot study dance group, the girls very much enjoyed working with materials.

Linda (B1) wrote, "I liked dancing with the material. It makes me float in the air. It is like a trans (sic. trance)". Ann (B2) wrote, "I was ill today so I watched the dancing and the part I liked best was when they were dancing with a lovely big cloth. I liked the patterns and the music. There was some carm and some quite ruff and I am going to try to do a picture like that." (The picture

is reproduced on page 241). Some of the more withdrawn girls found the material particularly helpful.

C14 and C15 who were of low I.Q. (55 and 50 respectively) were only drawn into the lesson in the early stages when they were able to hide behind a piece of material. These two girls were border-line severely subnormal; of C14 the psychologist wrote, "Has no ability to learn from experience." : of C15 she wrote, "Functioning at a very low level. Difficulty with the Weschler performance scale". For the first two lessons these two girls sat close to one another in a corner of the hall; in the third lesson they covered their faces with small pieces of material and joined in the 'hand' dances where they were not required to move from the spot. In the fourth lesson very large pieces of material were produced and the girls worked in twos and threes to 'make the material dance.' C14 and C15 (whom we shall call Joyce and Isobel) were reported by their class teacher in her capacity as observer as "making tentative movements towards the dance". In the 6th lesson they began to dance together using a large piece of material (see page 245). They were quite competent in handling the material and seemed quite unselfconscious. Sometimes the lesson moved too quickly for these girls. Then they would withdraw into a corner again. Isobel seemed able to profit from instruction but Joyce did not. Isobel began to dance alone towards the end of the experiment and to have partners other than Joyce. Her movement showed her increasing confidence. Her scores are given in Table 51 overleaf, with the average scores for her class again in brackets. She showed the third greatest improvement in her group.

Dancing with material



TABLE 51 C15's SCORES IN BEHAVIOUR AND MOVEMENT ASSESSMENTS

(a) <u>Behaviour Assessment</u>	<u>Test 1</u>	<u>Test 2</u>
Unforthcomingness	3.0 (2.78)	1.75 (2.03)
Aggression	1.5 (2.78)	1.0 (2.06)
Restlessness	2.2 (3.36)	1.2 (2.63)
Social Isolation	4.0 (3.56)	3.0 (2.11)

(b) Movement Assessment

							<u>Leads</u>	<u>Direction</u>	<u>Stretch</u>	<u>Body Parts</u>	<u>Freeze</u>	<u>Sensitive to Music</u>
Test 1	1	2	2	2	2	1	1	2	1	1	2	1
Test 2	2	2	3	4	3	3	2	3	3	2	3	4

	<u>Lead</u>	<u>Follow</u>	<u>Sensitivity to others</u>	<u>Planning</u>
Test 1	1	1	2	2
Test 2	2	3	3	1

A glance at Table 51 will show that Isobel's scores in test 1 were worse than the class average for unforthcomingness and social isolation. For the other two areas she had a better than average score. She showed improvement in every section in test two though she was still below the class average for social isolation. She was regarded by her teacher as a nice quiet girl but was under consideration for transfer to a school for E.S.N. (severe). Her increased involvement in movement delighted both the teacher and head mistress.

The biggest improvement in movement was her increased sensitivity to music. Indeed for this particular girl more music lessons might have had a more beneficial effect than dance, for in the early stages before she was willing to get on her feet, she sat in the corner, and, if she was not aware of being watched, she moved her head and shoulders to the music. There was improvement of two points in the ability to obtain a full stretch. Unwillingness to reach out from the centre of one's body is commonly seen in very nervous, withdrawn individuals and improvement in this area could well be seen as much a reflection of growing self confidence as the improved assessment for 'unforthcomingness'. The other two-point gains were in ability to follow another's movement (though she was tentative about leading another when the students were present) and in the qualities of lightness and sustainment. She did not achieve true sustainment but enjoyed rather slow continuous movement and could sometimes achieve good delicate movement though only in her hands. Her response was more to music than to verbal instruction.

Isobel did not show notable change in sociometric status and, while the number of rejections she received reduced from five in the first test to two in the second test, her friend Joyce who did not make much progress in dance received no rejections at all in test two compared with five in the first test. Perhaps the girl who rejected Isobel and not Joyce was being realistic - Isobel might have danced with her but Joyce certainly would not have done.

Successful participation in dance did not always lead to greater acceptance by the group, nor to much improvement in behaviour.

C13, whom we shall call Sandra, was rejected by one girl in test one (the same girl who in the second test rejected Isobel) but was not rejected by anyone in the second test. On the other hand, though she was not unchosen in the open choice tests she received no 'votes' at all in either of the weighted tests. In test two, (open test) her three 'votes' came from girls of low sociometric status, while in test one she had two votes from girls higher up the rank order. Sandra gave herself wholeheartedly to dance but was unacceptable to others as a partner. At the end of the second term of dance, Sandra was transferred to a residential school because it was felt she was under too much pressure at home. She had spent much of her life in care and had been at home for only ten months before the experiment began. She had a twin brother who suffered from brain damage and psychologists and social workers felt Sandra was too dominated by her twin. During the experiment Sandra's behaviour showed only marginal improvement and she was rated bottom in the second sociometric test. The observer recorded that she was fully absorbed throughout the dance lessons. On one or two occasions she disappeared behind a large piece of material but joined in the movement from this place of safety. Sometimes she was utterly lost in the dance and the teacher recorded that this was the only lesson where she looked really happy. Yet she seldom had a partner. In couple dances she often danced with the teacher. She was very quick to follow the teacher's lead and was able to lead herself. On three separate occasions she demonstrated a

movement with the teacher and the rest of the class then adopted the movement. Sandra was unable to write, but when one of the other girls interviewed her with a tape recorder she said, "I like Miss G. leading me. I feel safe then." and "When I was dancing with the big cloth I wasn't afraid, it made me happy". She always chose the same piece of material - a large rather dull and heavy piece - and when she left at the end of term she took this with her to use on her bed at the residential school. Her scores in the tests are given below in Table 52.

Table 52

C13's SCORES IN BEHAVIOUR ASSESSMENT AND
MOVEMENT ASSESSMENT

(a) Behaviour Assessment

	<u>Test 1</u>	<u>Test 2</u>
Unforthcomingness	3.25 (2.78)	2.25 (2.03)
Aggression	2.0 (2.78)	1.0 (2.06)
Restlessness	3.0 (3.36)	2.6 (2.63)
Social Isolation	3.3 (3.56)	2.6 (2.11)

(b) Movement Assessment

	<u>Levels</u>	<u>Direction</u>	<u>Stretch</u>	<u>Body Parts</u>
Test 1	2	2	3	2
Test 2	4	3	4	4

	<u>Lead</u>	<u>Flow</u>	<u>Sensitive to Music</u>
Test 1	4	3	3
Test 2	5	5	3

The average scores for the class given in brackets show that she was worse than average in unforthcomingness in the first test but better than the class average on the other three counts. The second test gave much the same picture though she was only very marginally better than average on the last two counts. Nevertheless she made one of the greatest improvements on average of the group.

Like the girl from the control group rated as bottom in both tests of sociometric status, Sandra was very friendly with her teachers and very welcoming to strangers visiting the school. It was only with her peers that Sandra seemed to have difficulty in relating. Success in dance did not help her to overcome this problem but it was certainly a source of joy to her.

The pupil in Group C₂ showing the greatest all-round improvement was Q16 whom we shall call Penny. Penny had an I.Q. of 60 but was very retarded in reading (the school assessed her reading age as 4.1 (Burt) at the age of twelve years eight months). She had a twin sister and an elder sister both at the same special school and lived in one of the poorest areas in the city. Penny was unchosen in the first limited choice version of the sociometric test. She received two 'votes' in the first open choice version but was also rejected by five other girls. In both versions of the test she was given bottom place in the rank order. By the end of the dance programme her popularity had risen. She was no longer rejected and her status in the limited choice version had risen to seventh and in the open choice version to sixth place. She showed most

improvement in the group in the behaviour assessment with a particularly big improvement in aggression. Her class teacher rated her as very aggressive at the start of the experiment. She was known for her very quick temper and was inclined to hit out at everyone and everything. She had a poor attendance record and her class teacher said she was really relieved when she did not attend. She was present for the first movement assessment but missed the first four dance lessons. By the time she appeared the other more aggressive members of the class were already involved in the dance. In this first lesson no-one would accept Penny as a partner so she danced with the teacher. She looked somewhat embarrassed and withdrew to a corner. Penny was the second tallest girl in the group and looked quite sophisticated. Eventually she agreed to accompany some very delicate movement with temple bells. This obviously appealed to her and when everyone began to play her own instrument and to dance to this, Penny began to move to her own playing of the bells. So she was drawn into the dance lesson and went on to show considerable involvement. The photograph on Page 252 shows her delicate hand movement. Penny's scores are given in Table 53 and show her all round improvement. Her class teacher still assessed her as worse than the class average in unforthcomingness and restlessness, but she was better than class average on the other two counts. Particularly outstanding was the change in aggression. Her class teacher was delighted with this change in Penny's behaviour. Her attendance also improved since she very seldom missed a dance lesson.

Penny (C16) performing a 'hand dance' on the occasion
of the second movement assessment



Madeline (B3) showing a different type of 'hand' dance



TABLE 52Cl6's AVERAGE SCORES(a) SOCIOMETRIC TESTS

OPEN	T.1	16	Rejections	T.1	5
	T.2	6		T.2	0
WEIGHTED	T.1	16			
	T.2	7			

(b) BEHAVIOUR

	<u>Test 1</u>	<u>Test 2</u>
Unforthcomingness	3.0 (2.78)	2.75 (2.03)
Aggression	4.5 (2.78)	1.5 (2.06)
Restlessness	4.0 (3.36)	3.0 (2.63)
Social Isolation	4.0 (3.56)	2.6 (2.11)

(c) MOVEMENT ASSESSMENT

							<u>Level</u>	<u>Direction</u>	<u>Stretch</u>	<u>Body Parts</u>	<u>Freeze</u>
Test 1	2	1	1	1	1	1	1	2	1	2	1
Test 2	3	2	2	3	3	3	2	2	2	3	2

	<u>Sensitivity to Music</u>	<u>Lead</u>	<u>Follow</u>	<u>Sensitivity to Others</u>	<u>Planning</u>
Test 1	1	1	1	1	2
Test 2	2	2	2	3	4

Figures in brackets show class average.

The areas in movement showing greatest improvement were light, delicate movement, changes of speed, sensitivity to others and participation in planning. The latter two reflect to some extent the change shown in the sociometric tests. Her awareness of space was still poor and there was a certain lack of control over her body which was still very obvious. Penny suffered from very poor

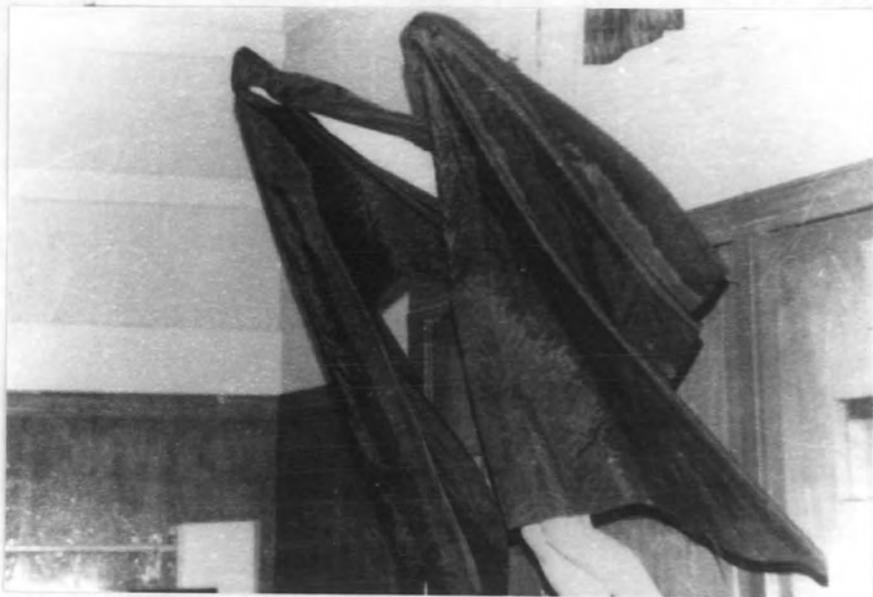
eyesight and wore very thick glasses. This may account for the fact that she was reluctant to move very much from the spot and enjoyed hand dances most of all. She was one of the few girls in this group who said she would rather dance without material and certainly she never seemed to need this to hide behind.

Another girl who did not need to hide behind material but who found great joy in movement was C9, whom we shall call Elizabeth. She was mentioned in the chapter on sociometric tests. The photograph on Page 255 shows something of the dynamic quality of this girl. Here material was used not as a means of self concealment but as an extension of her exuberant personality.

Elizabeth was one of ten children. An older sister was in the class above and both were given to frequent displays of temper. They were of gypsy stock - members of a family noted as trouble makers in the area where they lived. They were both outspoken and physically attractive. Several teachers spoke in an aggressive manner about "those D....'s". Both were physically able e.g. both could juggle with three balls, showed no fear of high apparatus and performed well in athletic events - Elizabeth could jump 14' 6". Unfortunately neither had the self-discipline necessary to take part in competitive activities. Elizabeth had a lively imagination, was quick to pick up an idea and to make suggestions for its development but she could neither read nor write. (Scored 4.4 for reading age in Burt). Dance gave her some outlet for both energy and imagination. During the first lesson she said, "I want to do ballet. I can stand on my toes and I've got a ballet record at home". She enjoyed most the more violent movements in dance. She recorded her views in a taped interview with one of the other girls.

Elizabeth (C9) using material to dance the part
of a 'witch'

"I think dancing is exciting. It makes me fizzy".



"I think dancing is exciting. It makes me fizzy. I like making up new dances especially with other girls. My favourite movement is the stabbing one and my favourite dance is the witches one. The best bit is where I jump from the table."

(This is the moment recorded in the photograph on Page 255).

She could show considerable self discipline in movement. The other photograph on the same page shows her with her partner performing an 'echo' dance to the music of "Tokyo Melody", which they accompanied with percussion. Her partner in this dance was C3, with whom her class teacher had reported she was, "at daggers drawn". This dislike was shown from time to time but was seldom obvious during a dance session. Elizabeth had obvious powers of leadership and was given to 'organising' the class for dance. She would also lead effectively in movement and in this showed self-discipline. For example she led the whole class in the running dance shown on Page 102 (Chapter 6), achieved a spiral shape and then led the group out of the spiral without losing the rhythm of the music and with thought for those following.

Elizabeth's success in dance was not reflected by improvement in the behaviour assessment scores. As can be seen from her individual scores in Table 5.4 she made no improvement at all in either aggression or social isolation. In the first of these she scored the maximum possible in both tests. In the second area she had a better than class average for the first test but dropped below class average in the second test. In her scores on unforthcomingness she had a worse than average score in the first test but was better than average on the second test. Her score for restlessness, though

it showed improvement in the second test was worse than average on both occasions. The increase in the number of 'rejections' awarded her was mentioned earlier. Her scores in the movement assessment showed improvement on almost every count.

TABLE 54

G9'S SCORES IN ALL THREE SECTIONS(a) Sociometric Tests

	<u>Test 1</u>	<u>Test 2</u>
Open choice Rank	7.5	11
Weighted scores Rank	4.5	7
Rejections against her	1	4
Rejections made by her	0	1

(b) Behaviour Assessment (Low score desirable)

Unforthcomingness	3.0 (2.75)	1.75 (2.03)
Aggression	5.0 (2.78)	5.0 (2.06)
Restlessness	4.4 (3.36)	3.8 (2.63)
Social Isolation	3.3 (3.56)	3.3 (2.11)

(c) Movement Assessment (High score desirable)

							<u>Level</u>	<u>Direction</u>	<u>Stretch</u>	<u>Parts</u>	<u>Lead</u>	<u>Follow</u>
Test 1	2	2	2	3	2	3	1	2	1	1	2	2
Test 2	3	4	4	4	4	4	2	4	4	3	4	2

(d) Planning 5 in each test.

(Class average shown in brackets).

Apparently the girl who was the most interesting dancer was not desired as a partner for dance by any except her closest friends. This supports the view that choices made in the sociometric tests were not related to the criteria given for making these choices. Elizabeth's closest friend was also a very aggressive girl (awarded 5 by her class teacher on both occasions). Her other close friends were not so aggressive but were described as 'very restless'. All enjoyed dance and all - even one described by her teacher as 'extremely nervous' - volunteered to dance a solo in the class dance on which the group worked for the first few weeks of term. The 'nervous' girl (C6) exhibited a characteristic often described in literature on E.S.N. children. She was very successful in her part as 'the fairy of the song birds' and wanted this dance to be repeated every lesson. She opted out of a substantial part of two lessons when the teacher decided that for the sake of the rest of the group this dance should not be included. She became involved again after sulking for two lessons.

Another very aggressive girl, this time from School B, whom we shall call Hazel, seemed to find great satisfaction in dance. However, ^{as with} Elizabeth, Hazel's prowess in dance did not improve her aggressive behaviour, as assessed by the class teacher. Hazel (B9) was a very disturbed individual. A year previously she had been excluded from a comprehensive school with the report, "behaviour manic". She was the product of a broken home. Her present school reported "Fights with her teachers. Epileptic. Hyperkinetic." Hazel was one of the brightest girls in the group and was able to express herself well. Of the first dance lesson she wrote, "I liked all the things we done on Tuesday. We had a dance it

was romantic all my mind was just floating on thin air. I like the indian one which was relaxing. Allyson talked to us on the tape. She said did we like it we said yes indeed it was like as if you were only by yourself it was great". The observation sheets show she was sometimes distracted from the dance lesson but never opted out for the whole lesson. Assessment showed her behaviour improved steadily, except, as already stated, in the area of aggression. She continued to be very easily upset and then could be quite destructive. However this behaviour was never displayed in a dance lesson. If Hazel was very upset before a lesson began some very quiet music was always used for the first dance. Usually the girls used material as well and the flow of the material combined with the soothing music seemed to help release Hazel's tension and she behaved well for the rest of the afternoon. Unfortunately the dance did not appear to have any longer term effect other than on her aggressive behaviour. By the third term of dance her teacher reported that outbursts were becoming less frequent. Her results in each assessment are given below.

TABLE 55 B9's SCORE IN SOCIOMETRIC TESTS AND IN
BEHAVIOUR ASSESSMENT

(a) <u>Sociometric Tests</u>	<u>Test 1</u>	<u>Test 2</u>	<u>Test 3</u>
Open choice test - rank	9	5	9
Weighted scores - rank	6	2	13
(b) <u>Behaviour Assessment</u>			
Unforthcomingness	3.0 (2.97)	1.7 (1.82)	1.2 (1.27)
Aggression	4.0 (2.62)	4.0 (1.87)	3.0 (1.89)
Restlessness	4.0 (3.22)	2.6 (2.57)	2.4 (2.25)
Social Isolation	3.6 (3.52)	3.0 (2.99)	2.3 (2.96)

(Class averages given in brackets).

Comparison with scores in brackets show that she was assessed as worse than the class average in all sections in test one, worse than average throughout the tests in aggression and restlessness (though nearer the class average in tests 2 and 3 in the latter) but better than the class average in tests 2 and 3 on unforthcomingness and in test 3 on social isolation. As can be seen above, her improved social status in test two was not maintained. Nevertheless towards the end of the second term she wrote of her pleasure at being a class leader.

"Today we did a dance about a ship wreck from a story in the bible. I was captain of the ship. The others said I could be in charge. It was great. We was shipwrecked and I helped some of the others get to safety."

Here her pleasure came less from the dance than because she had been invited to be the 'star'. This was a new experience for this girl. It is not possible to pin down the reason for her drop in status in the third term. Indeed her teacher was surprised because she had believed her to be getting on better than ever with her peers. Of course one must bear in mind the rapid rise in status of B18. Other girls obviously also rose in status as Hazel dropped. All girls in this group enjoyed the dance. The reason for selecting this particular girl for individual comment is to attempt to show that even very disturbed girls can gain satisfaction from dance.

Another girl from School B who enjoyed dance a great deal had quite a different personality. B3, whom we shall call Madeline was a pretty girl liked by both teachers and pupils. Madeline developed meningitis during her infant school years and after a long absence from school had been placed in a school for

the educationally subnormal. Her class teacher wrote, "Is in the top peer group. Neat to the point that she has risen above the standards of the home. A quiet somewhat timid girl."

From the first Madeline enjoyed dance. She had good bodily control and soon acquired a useful 'movement' vocabulary. The photograph on Page 252 shows Madeline in a dance based on strong, direct sudden movement. In the beginning she preferred slow sustained movement. She wrote, "I enjoyed the dance because it was very soft and relaxing. I like slow and drifting music very much because I can concentrat". She also wrote that she "didn't like the stoping bits becus I felt like going on and on". The headteacher was astonished when, during an early lesson, he walked through the hall and saw Madeline demonstrating a movement to the rest of the class. He thought she was too shy to do this. Her confidence grew during the dance lessons so that she wrote "When we were leading our partners I felt impotent (important) I realy did."¹⁰ Later she began to enjoy being led round and wrote, "I liked when the partner was leading you round with your eyes closed it made me feel free and like I had the hole place to yourself there were nobody there." About this time she began to enjoy sharper and stronger movements and began to be irritated when the rest of her group did not respond to the music as she thought they should. She wrote, "I like doing the witches dance when the group co-operates but most of all I like doing is when you dance by self because you can do the movments you know is rite. It gets better every week." Her assessment for behaviour also "got better". Her scores are given in Table 56.

TABLE 56B3's AVERAGE SCORES

(a) <u>SOCIOMETRIC TEST</u>	<u>Test 1</u>	<u>Test 2</u>	<u>Test 3</u>
Open -	3.5	1	3
Weighted -	2	3	3
(b) <u>BEHAVIOUR ASSESSMENT</u>			
Unforthcomingness	2.7 (2.97)	1.0 (1.82)	1.0 (1.27)
Aggression	2.0 (2.62)	1.0 (1.57)	1.0 (1.89)
Restlessness	2.4 (3.22)	1.0 (2.57)	2.4 (2.25)
Social Isolation	3.0 (3.52)	2.6 (2.99)	2.0 (2.96)

(Class averages in brackets).

As can be seen her scores were always better than the class average (except for the third assessment for restlessness) but she made good progress in the second test, though there was that increase in restlessness in test 3. Madeline found other aspects of school life satisfying. She could play the recorder, was a good swimmer and was rather better than average for her class at written work. She was held in high esteem by the rest of her class and was a member of a close-knit group with other girls of high sociometric status. Dance for Madeline was an extra means of self expression rather than a starting place.

One of the few girls from School A showing no deterioration of behaviour and indeed showing slight improvement in assessed behaviour was Al8 whom we shall call Lorna. Lorna was a very 'difficult' pupil given to acts of violence and showing an unexpected streak of cruelty. She would catch flies and pull off their wings. She missed the first few lessons and came

unwillingly to her first session. She was quickly caught up in a dance using coloured ribbons as a means of focus. The previous week the class had been working on rising and falling movements; this led to discussion on fountains and the teacher promised they should do a fountain dance. Elgar's "Fountain music" was used and ribbons added to the colour of the movement. Lorna wrote, "I like the fountain dance because we had to make a fountain and some of us had 5 people and we made a pat-in in the sky. I like jiggling the coloured ribbon and we could make like rainbow patterns in the air." Her group demonstrated to the rest of the class. From then on, Lorna appeared to enjoy dance and the photograph on Page 264 shows something of her involvement. Of this dance she wrote, "I liked the material dance we did some nice patterns and shapes we did curve shapes and wavy shapes. I liked the music and the scarfs I had a pink scarf and it was lovely." Her class teacher said she was surprised to see Lorna being constructive instead of destructive. From time to time in the dance lessons Lorna would fight with other girls but this was always a passing thing and she quickly returned to dance. As well as slight improvement in behaviour she showed some improvement in sociometric status. Her average scores are given in Table 57

TABLE 57

ALB'S SCORES IN SOCIOMETRIC TESTS AND
BEHAVIOUR ASSESSMENT

(a) <u>SOCIOMETRIC TESTS</u>	<u>Test 1</u>	<u>Test 2</u>
Open Version	18	11.5
Weighted Version	16.5	14.5
 (b) <u>BEHAVIOUR ASSESSMENT</u>		
Unforthcomingness	3.2 (2.57)	3.0 (2.66)
Aggression	4.0 (2.87)	3.5 (2.57)
Restlessness	4.4 (3.17)	3.5 (2.98)
Social Isolation	4.0 (3.14)	4.0 (3.15)

(Class average scores in brackets)

Lorna (A18) dancing with material



Throughout, Lorna had lower than class average on assessment but she showed more than average improvement as well as improving her sociometric status.

It will be noted that Lorna's improvement in sociometric status was not reflected in the class teacher's assessment of her position in relation to the rest of the class. This has been so for girls from Schools B and C also. It seemed that a girl's growing popularity was often not noticed by her class teacher until some time had elapsed. This suggests that more use might be made of sociometric tests to help a teacher spot individuals whose unpopularity was growing before this reached a state when the class teacher could not help but be aware of it. We saw in a previous chapter that a girl (D20) could be actively rejected by a large number of the class without her class teacher being really aware of this.

Only three girls in School A showed improvement in three aspects of behaviour. It will be remembered that the group as a whole showed no significant change in behaviour and sociometric rank order showed a relatively high correlation between the two tests. This was the school where the girls were drawn together from three different classes for physical education. The schools physical education programme was extensive. In the summer term the experimental dance programme took place along with sailing, canoeing, camping, swimming in an open air sea water pool and so on. Madeline from School B who was described above had experienced success in other aspects of school life besides dance - she swam competitively and played the recorder quite well - and we have shown that her success in dance was followed by only marginal improvement in behaviour assessment (and deterioration in one section). The reason for the lack of impact of dance on the behaviour patterns of the girls in School A could have been because they too already had experienced satisfaction in other physical activities.

In the pilot scheme for this study a class parallel to that receiving dance followed a programme of gymnastics. Behaviour improved in this group also, though not as significantly as that of the dance group. Any follow up study should look at the effect of using longer physical education programmes including a variety of activities.

There is evidence in this chapter that dance gave satisfaction to both very withdrawn and very aggressive girls. Statistics suggest that in a high proportion of cases successful experience in dance could influence the behaviour patterns of adolescent girls and their integration with their peers. It would clearly be foolish to claim that dance was universally acceptable but to many girls in this study it seemed to give opportunity to experience meaningful success.

CHAPTER 11

Discussions and Conclusions

The basic premise underlying this study is that of the unity of man; that is, the belief that an individual's body is part of his total 'personality' and that what affects one part of the 'self' inevitably has impact upon other aspects of 'self'. Oliver (1972) said;

"Because of the intimate relationship of the functioning of all aspects of growth, an individual cannot be divided into two parts, therefore we do not believe that one type of experience trains the body and another type of experience educates the mind".

He might have added, "or develops social relationships". There is evidence, examined in chapter two, that children who are academically retarded tend also to be physically retarded but that in the latter respect they are often nearer the 'norm' than in academic skills. Chapter two also records evidence of the successful use of aspects of physical education in improving the self concept, and consequently academic performance, of educationally subnormal boys. There is little evidence of successful use of physical education in this way with girls. The importance of success in physical skills amongst boys is established (see for example Schools Council Enquiry 1 (1967) and Jephcott in 'Time of One's Own' (1967)). Both these enquiries show that for girls, success in motor skills is less important. However the girls interviewed in the course of the survey described in chapter three were almost unanimous in voting physical education

1. Oliver in Kane (1972) p.187.

both enjoyable and useful. Many seemed to see this aspect of school life as of more relevance than some other aspects of the curriculum. It seemed possible therefore that if the material was well-chosen, girls too might through successful participation improve their self-concept. An attempt to measure changes in self image amongst educationally subnormal girls following a P.E. programme was made by Cratty in U.S.A. and by Groves in the pilot study for this thesis. Neither produced any evidence of change but Groves suggested that this was probably due to inability of the girls involved to verbalise about their feelings.

In the survey relating to the present study (see chapter three) Heads and physical educationalists as a whole gave strong support to the important part played by physical education in giving success to those who have so often failed in school. The specialist system of teaching employed in large comprehensive schools usually prevents teachers from capitalizing on such success. In the few small secondary modern schools included in the survey head teachers and physical educationalists saw the possibility of transferring the effect of success in the gymnasium and swimming baths or on the playing fields to the classroom situation. Special school heads were also more aware of the possibility than were the heads of comprehensive schools. Unfortunately special schools were badly handicapped in the provision of a satisfactory physical education programme by inadequate facilities, small numbers, lack of staff who were qualified in physical education and the frequent 'turn over' of staff. The need for more peripatetic teachers of physical education was emphasised by some special school heads, but if transfer of motivation is to be sought, then

class teachers must work alongside visiting teachers. The writer found that class teachers were willing to be involved when given something concrete to do, such as completing observation sheets for each lesson. Greater help from colleges of education would also be welcomed by most special school heads. The use of students working with small groups of pupils would enable slow learners to find their own area of success in the wide spectrum of physical activities possible even with fairly limited facilities.

As yet there is little reported evidence of the aspects of physical education most suitable for use with retarded teenage girls. The survey produced conflicting evidence and the clearest impression gained was that little thought had been given to the best material for and method of presentation to less-able girls. Most teachers assumed that what was appropriate for one group of girls was probably appropriate for another. Yet it is possible that retarded children do not learn motor skills in the same manner as normal children. The easy distractability of many of these children probably indicates that teaching needs to be more direct and that extraneous distractions should be removed. The successful use of small pieces of material as a means of focus in the dance programmes used in this experiment points the way towards developing other simple forms of focusing attention. It may be that the use of small apparatus in developing certain bodily skills, as was recommended in the 1950's for all children, should be re-introduced for less able pupils.

The value of dance in the education of less able girls was indicated in the Newsom report and finds some support in studies

carried out by Duval, Friedmann-Witthower, Gittins, Lofthouse, Smith, Talbot and Wethered. As early as 1807 Pestalozzi pointed out that, "dance has a universal basis in human nature". He was looking at dance not as an art form designed to entertain an audience but as something closely related to man's desire to find himself. The form of dance used in this research was called 'creative dance' because it involved every child in the development of movement patterns, themes and dance dramas. Technique was only introduced when children appeared to want it and then only at a very simple level. In this present study no attempt was made to evaluate the influence, if any, of this type of dance programme on academic achievement. Rather it was felt that academic progress was likely to be very limited until these girls overcame their frustration at past failures, learned to control their aggression, were calmed and began to show more trust in other people. It was decided, therefore, to focus upon social relationships and behaviour patterns - especially those of aggression, withdrawal and restlessness. The dance emphasised partner and group experiences and early in the dance programme their sensitivity towards one another appeared to grow. Sociometric tests before and after the experimental programme showed that in classes who had previously not had much physical education there was increasing acceptance of those previously unacceptable to their classmates, though dance appeared to have no effect upon the make up of close friendship groups. The more dance a group received, the more sociometric ranking changed. Fewer girls were rejected by a dance group than by a control group at the end of the same period of time. In two of the dance groups there

Pages wrongly numbered. Please continue onto page 272.

was positive improvement in the class teachers' assessment of aggressive, withdrawn and restless behaviour. Certain difficulties exist when a test depends on subjective opinions. The class teachers involved in this work had different personalities and appeared in conversation to use different standards for judging children's behaviour, so there was nothing to be gained by comparing one class's scores with another. The difference between the first and second tests for the same group were however significant.

The girls from the control group showed a significant deterioration in behaviour and less acceptance towards some members of the group actively rejecting more in the second test. The relatively high correlation in sociometric ranking in the control groups' scores suggest that under normal circumstances sociometric status, even with somewhat disturbed and retarded girls, remains relatively stable over a period of six months. All groups showed the stability of close friendship groups amongst adolescent retarded girls. The third dance group, the girls from School A, showed much less change in sociometric ranking and in behaviour than the other two groups receiving dance. This could have been owing to the fact that the group met together for only a small proportion of the school week and loyalties were apparently based largely on age group classes. Another possible reason was the existence in this school of a well-established physical education programme. In the summer term the experimental dance sessions took its place alongside sailing, canoeing, camping and swimming in the open air sea water pool.

Since, however, this group did not show the deterioration in behaviour assessment shown by the control group, but instead a slight although statistically insignificant improvement, it may be that dance, together with the range of outdoor activities, did have some impact. Alternatively, the slight improvement might have been due to outdoor activities and not to dance. It would obviously be useful to conduct the dance programme with a group made up as in School A, but from a school with little or no programme of physical education and/or with a group who were together for the bulk of the school week and who normally followed an extensive physical education programme. Unfortunately, neither of these options was open to the writer.

Only with one dance group and the control group was it possible to evaluate performance in dance on any sort of numerical scale. The control group showed no improvement in performance after the experimental period while the experimental group showed a significant improvement. Unfortunately it was impossible to prove correlation between improvement in movement and in other aspects tested. It seems probable that this was due to the high proportion of ties in all three tests. The method of assessing success in movement tasks was fairly crude and this too could have accounted for the difficulty of correlation. Most girls showing a great improvement in dance also showed the considerable improvement in sociometric and behaviour scores. However, good individual performance and enjoyment in dance did not necessarily lead to better adjustment; indeed, two who danced well from the start and who clearly loved dance became considerably less popular

as the experiment went on and showed only very marginal improvement in behaviour. In spite of this the group results were sufficiently positive to suggest that dance may have therapeutic value at least with two out of three classes of girls.

The problem of the 'Hawthorne effect' on the results of this experiment has not been tackled very successfully. Originally it was intended to involve one colleague in a series of art lessons and another in music lessons running parallel with two of the dance programmes, but in the event neither colleague was able to commit herself for the necessary length of time. The only attempt to control the Hawthorn effect was by encouraging the class teacher of one group to continue the programme for a further term and then retesting. Results of this experiment were encouraging. If this class teacher had continued in special education it would have been possible to see the results of a further year's work in dance. Unfortunately she moved into another related field which was unsuitable for the purpose of this research.

The time span available for each dance programme has been briefer than desired. Limitations were imposed because of the turn over of women teachers in special schools and, though to a lesser degree, change in the make-up of groups. These obviously change with each new school year and, because of the smallness of special schools, it is very unusual for a group to be promoted as a complete entity. There are changes during the year with girls entering the group from 'normal' schools, or, occasionally, from severely subnormal units, while girls leave to attend residential schools, are taken into 'care' or simply reach school leaving age.

The greatest problem met by the writer was lack of stability in staffing. One group had to be abandoned because the class teacher had a nervous breakdown and the class was then dispersed amongst colleagues for some time until a replacement could be found. In another case work had to be re-started the following term because the teacher felt that she could no longer work with such difficult children and so left without notice. One other class teacher died of a brain tumour after her class had been chosen for the experiment, though before work commenced, and the head teacher of one school suffered a nervous breakdown. The strain felt by teachers working with these girls is clearly tremendous. If dance can in any way reduce the strain it is valuable. Of course smaller classes and more auxiliary help is a high priority, but girls also need quick success in some field.

Mention was made in chapter two of improvement in the academic performance of educationally subnormal boys after successful participation in physical activities. In America there is a growing interest in relating the development of perceptual skills needed for reading and those required in some motor activities. It would be useful to see whether successful participation in dance made any measurable difference to reading skills. The head teacher of one school used in the present study believed that dance had led to improved performance in reading but this was not measured by the writer.

A growing number of educationalists recommend a multi-media approach to remedial education. It seems that dance has a part to play in this approach but its place would certainly be more firmly established if it could be shown that dance improved

reading skills. To use dance as a therapy is not to deny its place as an art form nor to suggest that it needs to be seen as therapeutic to warrant a place in the school curriculum. Unless, however, those who have continually failed in school activities find meaningful success and so become less frustrated with their world, they cannot be led to a true appreciation of dance as an art form nor to an acceptance of themselves as individuals who matter.

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APPENDIX ISurvey of Schools

1. Letter to heads of secondary schools.
2. Questionnaire to heads of secondary schools.
3. Questionnaire to heads of girls' Physical Education
in streamed schools.
4. Questionnaire to heads of girls' Physical Education
in unstreamed schools.
5. Questionnaire to heads of special schools.
6. Questionnaire to remedial secondary girls.

NAME OF SCHOOL.....

NUMBER ON ROLL.....

FOR THE ATTENTION OF THE HEADMASTER / HEADMISTRESSHow many girls are in remedial classes or receiving remedial teaching?

Do 'remedial' girls receive more / less / the same amount + of Physical Education as A stream girls?

Would you give this group more Physical Education if it was possible to do so? Yes / No +

Have you any plans to increase the amount of Physical Education for non-examination fifth year girls after the raising of the school leaving age?

Yes / No +

Please delete as appropriate.

What part do you consider P.E. plays in the education of less-able girls in your school? Please tick those statements with which you agree.

Tick here.

- a) Gives them opportunity to experience success.
- b) Gives them a leisure time interest.
- c/ Helps absorb aggressive tendencies.
- d) 'Brings out' the shy individual.
- e) Gives the class a group identity.
- f) Improves group cohesion.
- g) Improves classroom behaviour.
- h) Improves work in other areas of the curriculum.
- i) Gets rid of excess energy.
- j) Is a waste of time.
- k) Any other? Please state

Would you be willing for me to come to your school to talk to less able girls (preferably 13++) with a view to establishing their attitude towards physical activities? Yes / No.

Thank you for your co-operation.

NAME OF SCHOOL

THE HEAD OF GIRLS' PHYSICAL EDUCATION.

I know from my own experience that the lower streams of a secondary school present the Physical Educationist with her greatest challenge. I should very much like to know how you seek to meet this challenge in your particular school. Any information will be used in a confidential manner i.e. the school's name will not be used unless you wish it to be so.

Which activities have you found most popular with remedial classes or bottom stream girls?

- 1st year.....
- 2nd year.....
- 3rd year.....
- 4th year.....

Are there any activities which you feel would benefit the girls which for reasons beyond your control you are unable to give them? Please state.

How many girls from these lower streams represented the school in the last 12 months in

- a) Netball.....
- b) Hockey.....
- c) Tennis.....
- d) Swimming.....
- e) Athletics.....
- f) Trampolining.....
- g) Gymnastics.....
- h) Other?.....

PLEASE CROSS OUT ANY ACTIVITIES IN WHICH YOU DO NOT HAVE SCHOOL TEAMS.

In the light of your past experience, what proportion of girls from the lower streams leaving school in any one year would you expect to continue some form of physical activity as a leisure pursuit?

What part do you consider P.E. plays in the education of less able girls?

Please tick those statements with which you agree.

- a) Gives them opportunity to experience success.
- b) Gives them a leisure time interest.
- c) Helps absorb aggressive tendencies.
- d) 'Bring out' the shy individual.
- e) Gives the class a group identity.
- f) Improves group cohesion.
- g) Improves classroom behaviour.
- h) Improves work in other areas of the curriculum.
- i) Gets rid of excess energy.
- j) Is a waste of time for this group.
- k) Any other? Please state.

Tick.

Would you be willing (if your Headteacher agrees) for me to come to talk to your academically less able groups about their attitude to physical activities? Yes / No.

Thank you for your co-operation. Please return this questionnaire along with that sent to your Headmaster.

Lilian Groves.

NAME OF SCHOOL

TO THE HEAD OF GIRLS' PHYSICAL EDUCATION

I know from my own experience that the lower streams of a secondary school present the Physical Educationist with her greatest challenge.

I should very much like to know how you seek to meet this challenge in your particular school. Any information will be used in a confidential manner i.e. the school's name will not be used unless you wish it to be so.

SECTION A. To be completed by those teaching in streamed schools.

1. Which activities have you found most popular with remedial classes or bottom stream girls ?

1st year

2nd year

3rd year

4th year

2. Are there any activities which you feel would benefit the girls which for reasons beyond your control you are unable to give them ?

Please state.

3. How many girls from these lower streams represented the school in the last 12 months in :-

(a) Netball

(b) Hockey

(c) Tennis

(d) Swimming

(e) Athletics

(f) Trampolining

(g) Gymnastics

(h) Other?

PLEASE CROSS OUT ANY ACTIVITIES IN WHICH YOU DO NOT HAVE SCHOOL TEAMS.

4. In the light of your past experience, what proportion of girls from the lower streams leaving school in any one year would you expect to continue some form of physical activity as a leisure pursuit ?

THE PLACE OF PHYSICAL EDUCATION IN THE EDUCATION OF E.S.N. GIRLS

Name of School

Number of Girls on Roll

1. Have you one or more Physical Education Specialist (a) YES / NO *
 (b) WOMAN / MAN / BOTH *
 (c) FULL / PART TIME *

2. How many periods of P.E. are timetabled each week for
 Secondary age girls ?

3. Please tick against the activities taken in the girls P.E. programme

Gymnastics

Modern Educational Dance

Music and Movement (E.B.C.)

Country Dance

Games

Swimming

Athletics

Outdoor Pursuits

Others (Please specify)

4. What activities other than those would you like to provide ?

5. What activities do your staff find most popular ?

with 11 year old girls

with 12 year old girls

with 13 year old girls

with 14 year old girls

with 15+ girls

6. Please tick these activities for which you have school teams (i.e. to
 compete against other schools) -

Netball

Hockey

Tennis

Swimming

Gymnastics

Other (please specify)

7. What part do you consider Physical Education can play in the educational development of the girls in your school ? Please tick those statements with which you agree.
- (a) Gives them opportunity to experience success
- (b) Gives them a leisure time interest
- (c) Helps absorb aggressive tendencies
- (d) 'Bring out' the shy individual
- (e) Gives the class a group identity
- (f) Improves group cohesion
- (g) Improves classroom behaviour
- (h) Improves work in other areas of the curriculum
- (i) Gets rid of excess energy
- (j) Is a waste of time for this group
- (k) Any other ? Please state
8. As far as you know, what percentage of girls take part in physical activities in the year after they have left school
9. What changes in your school do you feel would improve work in P.E. ?
10. Would you be willing for me to come to your school and talk to some of the girls with a view to establishing their attitude towards physical activities ?

YES / NO *

* Please delete as appropriate.

Thank you for your co-operation.

L. Groves

Principal Lecturer in Physical Education
at St. Hild's College, Durham.

WHAT DO YOU THINK OF PHYSICAL EDUCATION?

Please put your age here _____

1. Do you think P.E. is interesting? Yes/No
2. Do you think P.E. is boring? Yes/No
3. Do you think P.E. is useful? Yes/No
4. Do you think P.E. is a waste of time? Yes/No
5. Do you think P.E. helps you to keep fit? Yes/No
6. Do you think P.E. makes you more graceful? Yes/No
7. Do you think P.E. helps you to slin? Yes/No
8. Do you think P.E. gives you something to do outside school? Yes/No
9. Do you think P.E. gives you something to do when you
leave school? Yes/No
10. Do you think you should have more P.E. lessons? Yes/No
11. Do you think you should have less P.E.? Yes/No
12. Do you think you should be able to choose whether to do
P.E. or not? Yes/No
13. Do you think P.E. should be done away with? Yes/No
14. Do you think you are good at P.E.? Yes/No
15. Do you think you are useless at P.E. Yes/No
16. Do you try to 'dodge' P.E. - as often as possible
(tick whichever is true) sometimes - - - -
never - - - - -
17. If you do try to 'get out' of doing P.E. is it because -

(a)	you don't like changing	-----	<input type="checkbox"/>
(b)	you can't be bothered	-----	<input type="checkbox"/>
(c)	you feel stupid doing P.E.	-----	<input type="checkbox"/>
(d)	you are no good at P.E.	-----	<input type="checkbox"/>
(e)	you are frightened of apparatus	-----	<input type="checkbox"/>
(f)	you don't understand what the teacher wants.	-----	<input type="checkbox"/>
18. Make a list of the kinds of P.E. you like, such as Netball, Dancing,
Camping, Gymnastics
19. Make a list of the kinds of P.E. you do not like
20. Write down anything else you would like to tell me about P.E.

APPENDIX 2SOCIOMETRIC TESTSContents

1. Test form.
2. Matrices.
3. Sociogrammes not given elsewhere.
4. Example of statistical calculations used.

APPENDIX 2.

Sociometric Test Form. (Surnames of class members have been removed from 5.)

Your name here

1. Make a list of the girls in your class you most want to dance with in College on July 1st.

1st choice

2nd choice

3rd choice

2. Who in your class do you most like to work with in the classroom ?

1st choice

2nd choice

3rd choice

3. Who in your class do you most like to go round with at playtime ?

1st choice

2nd choice

3rd choice

4. Is there anyone you very much do not want to be with ?

Put their names here

.....

5. Now put a against every girls name if you would not mind being with her in college on July 1st.

Maureen

Madeline

June

Christine

Pearl

Angela

Kathleen

Lorraine

Linda

Stephanie

Christine

Mary

Linda

Maureen

Christine

Pauline

Valerie

Francis

Nancy

Catherine

Note : The second and third criteria were not used in discussion of this test, since they caused some confusion (see Chapter 7).

CONTROL GROUP SOCIOMETRIC TEST 1

Open Choice

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	
D1		x								x	x										3
D2	x					x				x	x				x						5
D3				x	x		x														3
D4			x		x		x														3
D5			x	x				x													3
D6	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	18
D7	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	18
D8	x	x				x	x		x			x	x			x					8
D9	x	x		x		x	x	x				x	x					x			9
D10	x	x									x										3
D11	x	x									x										3
D12	x	x	x		x	x	x	x	x					x				x			10
D13	x	x	x	x	x	x	x	x	x	x	x	x				x		x	x		15
D14			x	x	x																3
D15	x	x	x	x	x	x	x	x	x			x	x					x			12
D16		x				x	x						x	x			x			x	7
D17	x	x				x		x	x	x	x				x	x					9
D18	x	x	x	x				x	x			x	x	x			x		x	x	12
D19	x		x	x	x	x							x	x						x	8
D20			x	x	x																3
	13	13	11	11	10	10	9	9	8	7	7	7	7	6	5	5	5	5	4	3	

CONTROL GROUP SOCIOMETRIC TEST 2

OPEN CHOICE.

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	
D1		x	x				x	x		x	x						x				7
D2	x		x				x	x		x	x	x					x				8
D3		x			x		x	x				x	x		x		x				8
D4		x	x		x	x	x	x													6
D5			x	x			x	x	x			x	x	x	x		x	x			11
D6							x	x				x									3
D7	x	x	x	x	x	x		x	x	x	x	x	x		x		x				14
D8		x	x		x	x			x	x	x	x	x								9
D9		x	x	x	x	x	x	x		x	x	x		x	x			x	x		14
D10	x	x	x	x			x	x			x	x					x				9
D11	x	x	x	x	x	x	x	x	x	x		x			x			x	x		14
D12	x	x	x		x	x		x	x	x	x										9
D13	x	x	x	x	x	x	x	x	x	x	x	x			x	x		x	x		16
D14	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x		x	17
D15	x	x	x	x	x	x	x	x	x			x	x				x				12
D16		x				x		x			x	x					x	x			7
D17	x			x	x	x			x				x	x				x			8
D18	x			x		x			x			x		x					x	x	8
D19				x		x								x		x		x		x	6
D20			x			x							x		x	x		x	x		7

10 13 14 11 11 14 11 15 11 9 10 14 7 5 8 4 9 9 5 3

CONTROL GROUP SOCIOMETRIC TEST 1

WEIGHTED CHOICE.

(Names based on status in Open Choice Test)

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20
D1		2								3	1									
D2	1									3	2									
D3				1	2		3													
D4			1		2		3													
D5			1	2				3												
D6		3	2																	R
D7			2	2	3															R
D8						3			1			2								R
D9				2				1				3								
D10	2	3									1									R
D11	1	3								2										
D12							3	1	2											
D13									2			3								1
D14			2	1	3															
D15		2					1	3												
D16													3	1		2				R
D17	2	3	R								1									
D18													1	R					2	3
D19	1									R		2	3							
D20			3	1	2															

Choice	320	024	321	330	032	001	103	302	120	012	310	012	010	102	100	000	010	000	110	001
No. Choosing.	5	8	6	6	51	1	4	5	3	3	4	3	1	3	1	0	1	0	2	1
Weighted Score	13	6	14	15	8	1	6	11	7	4	11	4	2	5	3	0	2	0	5	1
Rank	3	8.5	2	1	6	17.5	9.5	4.5	7	12.5	6.5	12.5	15.3	10.5	14	19.5	15.5	19.5	10.5	17.5
Rejects			1R							1R					1R				1R	4R

CONTROL GROUP

SCHOOL C. CLASS C. SOCIOMETRIC TEST 2
WEIGHTED CHOICE.

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20
D1		1								3	2				R					R
D2	2									1	3				R					R
D3				R	2		1								3					R
D4		1			2		3											R		
D5			1	2			3													R
D6				R				3	2			1								R
D7			2	1	3											R				R
D8									3		1	2						R		R
D9	R					3		1				2						R		
D10	2	1									3				R					R
D11	3							1				2						R		R
D12	3							2	1									R		R
D13						2	3	1							R					R
D14			1	2	3															
D15		2					1	3		R					R					R
D16		1									2							3		R
D17	1								3				2							
D18				2	R										1				3	
D19						1									3			2		
D20			1			2														
Choice	122	410	310	130	022	121	203	312	012	101	122	130	010	101	001	000	001	010	002	000
No. Choosing	5	5	4	4	4	4	5	6	5	2=	5	4	1	2	1	0	1	1	2	0
Weighted Score.	9	14	11	9	6	8	9	13	7	4	9	9	2	4	1	0	1	2	2	0
Rank	6	1	3	6	11	9	6	2	10	12.5	6	6	15	12.5	17.5	19.5	7.5	15	15	19.5
Rejects	1R			2R	1R					1R				2R		4R	4R	1R		13R

SCHOOL A. Sociometric Test 1Open Choice

(Numbers assigned to girls on basis of social status
in this test)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Expans.
A1					x	x		x	x	x	x					x		x			8
A2			x			x			x		x										4
A3	x	x		x		x	x		x		x	x			x						9
A4	x	x	x				x					x									5
A5	x							x					x	x							4
A6	x	x	x	x												x					5
A7	x	x	x	x								x									5
A8	x				x					x			x				x				5
A9		x									x										2
A10	x			x	x			x								x				x	6
A11		x	x			x	x		x												5
A12	x	x		x			x		x									x			6
A13	x			x	x			x		x					x						6
A14	x			x	x			x		x			x								6
A15		x	x			x	x		x												6
A16	x	x		x	x			x													5
A17		x			x																2
A18	x						x									x					3
A19		x	x			x				x			x	x							6
A20			x			x															2

Score	12	11	8	8	7	7	6	6	6	5	4	4	4	3	3	3	1	1	1	0
Rank	1	2	3.5	3.5	5.5	5.5	8	8	8	10	12	12	12	15	15	15	18	18	18	20

SCHOOL A. SOCIOMETRIC TEST 2Open Choice

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Expens.
A1		x				x		x	x							x		x			6
A2			x			x			x		x			x							5
A3		X		x		x	x				x	x			x		x				8
A4	x	x	x		x		x						x			x		x			8
A5						x		x		x						x					4
A6		x	x	x			x				x	x			x						7
A7		x	x	x		x						x						x			6
A8	x				x				x	x						x				x	6
A9	x	x						x			x			x						x	6
A10	x			x	x			x					x	x		x		x	x		9
A11		x	x			x			x					x							5
A12			x	x		x	x	x										x	x		7
A13	x				x			x						x		x		x			6
A14	x				x			x		x			x							x	6
A15		x	x	x		x	x					x						x			7
A16		x					x	x	x				x							x	6
A17		x	x	x		x	x				x	x			x						8
A18	x		x	x	x				x					x	x			x			8
A19			x		x			x		x			x	x							6
A20			x		x	x		x	x										x		6

Score	7	10	11	8	8	10	7	10	7	4	5	5	5	7	4	6	5	6	2	3
Rank	9.5	3	1	8.5	8.5	3	9.5	12.5	14.5	17.5		14.5		8.5	17.5	11.5	14.5	11.5	20	19

SCHOOL A. SOCIOMETRIC TEST 1

Weighted Choice

(Name - Numbers assigned on basis of sociometric status in test 1 'open choice' response)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A1					3			2											1	
A2			3						1		2									
A3		2				1									3					
A4			2				1					3								
A5	2							1							3					
A6		2	1												3					
A7			3	2								1								
A8	3					2											1			
A9		2									1									
A10					3											2				1
A11		1	3							2										
A12				2			1											3		
A13	2				3										1					
A14	2				3								1							
A15		3	1			2														
A16	3	2							1											
A17		1			2															
A18	2						3									1				
A19			3										2	1						
A20			1			2														

Weighted Score 10 15 15 4 .8 7 7 8 5 0 5 4 5 8 4 5 1 3 3 0

Number Choosing 6 7 8 2 6 3 3 3 2 0 2 2 2 4 2 2 1 1 1 0

Rank 3 15 15 14 5 7.5 10.5 19.5 10.5 14 10.5 5 14 10.5 18 15.5 15.5 19.5

SCHOOL A. SOCIOMETRIC TEST 2Weighted Choice

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A1								1	3									2		
A2									2		1			3						
A3		3				1									2					
A4		3	1				2													
A5						2		1								3				
A6		2	1												3					
A7				1								2						3		
A8					2					3							1			
A9		2						3			1									
A10								1						3						2
A11		2							1					3						
A12				2			1											3		
A13					1			3						2						
A14								2					3							1
A15			2			3	1													
A16								1	3											2
A17			1			2									3					
A18					3				2							1				
A19										3				2	1					
A20			1		3	2														

Weighted Score	0	8	14	5	7	10	8	16	9	2	6	2	3	8	7	4	1	3	5	2
No. Choosing	0	5	5	2	4	5	3	7	5	2	2	1	2	5	4	2	1	2	2	1
Rank	20	6	2	11.5	8.5	3	6	1	4	17	10	17	14.5	6	8.5	13	19	4.5	11.5	17

School B. Sociometric Test 1Open Choice

(Numbers assigned to girls on the basis of
Sociometric Status in this test).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Exp.	
B1		x	x	x	x		x		x										x		7	
B2	x		x	x		x	x		x				x									7
B3	x	x			x		x	x		x		x	x						x			9
B4	x	x	x			x	x		x				x									7
B5	x	x	x				x					x		x	x							7
B6	x	x	x	x	x		x		x				x									8
B7	x	x	x	x	x	x			x													7
B8	x	x								x	x						x			x		6
B9	x	x	x	x	x	x							x	x								8
B10	x	x	x						x								x		x	x		7
B11	x			x		x		x		x							x		x	x		7
B12					x	x								x	x							4
B13	x	x		x		x				x												5
B14					x							x					x					3
B15			x		x							x		x								4
B16								x		x	x									x		4
B17									x	x	x						x					4
B18	x	x	x	x		x	x	x		x	x						x					9
B19				x								x								x		3
B20					x								x		x	x						4

Score	12	11	10	9	9	8	7	6	6	6	5	5	5	5	4	4	4	4	0	0
Rank	1	2	3	4.5	6	7	9	12.5			16.5				19.5					

SCHOOL B. SOCIOMETRIC TEST 2Open Choice

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	<u>Expan.</u>
B1		x	x				x							x				x			5
B2	x		x	x		x	x		x												6
B3	x	x		x	x		x		x				x		x						8
B4						x			x				x								3
B5	x		x				x					x		x	x			x			7
B6			x	x					x				x								4
B7	x	x	x	x	x				x				x								7
B8					x					x								x			3
B9	x	x		x									x								4
B10								x								x		x			3
B11			x		x		x									x	x				5
B12	x	x	x		x						x			x				x		x	8
B13			x	x		x			x											x	5
B14	x	x	x		x										x						5
B15		x	x		x									x							4
B16								x		x	x							x			4
B17											x	x				x					3
B18	x		x	x	x	x	x	x						x							8
B19											x						x			x	3
B20								x	x				x						x		4

Score 8 7 11 7 8 4 6 4 7 2 4 2 6 5 3 3 3 5 1 3

Rank 2.5 5 1 5 2.5 12 7.5 12 5 18.5 12 18.5 7.5 9.5 15.5 15.5 15.5 9.5 20 15.5

SCHOOL B. SOCIOMETRIC TEST 3Open Choice

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Expan.
B1		x	x	x	x		x							x				x			7
B2	x		x		x		x		x									x	L		6
B3	x	x			x		x												E		4
B4						x						x	x						F		3
B5			x											x	x			x	T		4
B6				x					x				x								3
B7	x	x	x								x										4
B8					x					x								x	S		3
B9			x	x		x							x						C		4
B10											x					x	x	x	H		4
B11							x									x	x	x	O		4
B12					x									x	x			x	O		4
B13				x		x			x										L		3
B14		x			x										x					x	4
B15		x	x		x					x				x							5
B16							x			x	x	x					x	x		x	7
B17												x				x		x			4
B18					x					x		x						x			4
B19																					-
B20					x				x									x			3
Score	3	5	6	4	9	3	5	0	4	4	3	4	3	4	3	4	4	9	-	3	
Rank	15.5	4.5	3	9	15	15.5	6.5	19	9	15.5	9	15.5	9	15.5	9	15.5	9	15		15.5	

SCHOOL B. SOCIOMETRIC TEST 1Weighted Score

('Name - Numbers' assigned on basis of Sociometric
Status in 'open' choice question)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B1		1	2				3													
B2	1		2				3													
B3	2	3					1													
B4					3			2					1							
B5			1											2	3					
B6				3				1					2							
B7	2	3	1																	
B8									3	2									1	
B9				2		3							1							
B10								3								1		2		
B11						1		2								3				
B12					2									3	1					
B13				2		3			1											
B14					1							3				2				
B15					2							3		1						
B16								2			1								3	
B17								3		1							2			
B18								1		3	2									
B19				3							1								2	
B20					1										2	3				
Score	7	5	10	6	10	6	5	9	8	5	10	2	8	8	7	6	3	5	0	0
No. Choosing	3	3	4	4	4	4	3	5	3	3	4	2	3	4	4	3	2	2	0	0
Status	8.5	14.5	2	11	2	11	14.5	4	6	14.5	2	18	6	6	9.5	11	17	14.5	19.5	

SCHOOL B. SOCIOMETRIC TEST 2Weighted Scores

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B1		1	2				3													
B2	1		2				3													
B3	2	3					1													
B4						3		1					2							
B5			3											1	2					
B6				2				1					3							
B7	2	3	1																	
B8					2					3									1	
B9		3		1									2							
B10								2								1		3		
B11					1											2	3			
B12					2	1								3						
B13				3		2			1											
B14	3				1										2					
B15			3		1									2						
B16								2		3								1		
B17											2	3					1			
B18					2			1						3						
B19											3							1		2
B20									1				2							3
Score	8	6	9	6	15	6	5	7	12	2	3	1	7	7	4	8	7	4	1	2
No. Choosing	4	4	5	3	6	3	3	3	4	2	2	1	4	4	2	3	3	2	1	1
Status	4.5	11	3	11	1	11	13	7.5	2	17.5	16	19.5	7.5	14.5	4.5	7.5	16.5	19.5	17.5	

SCHOOL B. SOCIOMETRIC TEST 3Weighted Scores

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B1		1	3				3													
B2	1		3				2													L
B3	2	3					1													E
B4						3						1	2							F
B5			2											1	3					T
B6				3					2				1							
B7	3	2	1																	
B8					2					3									1	S
B9			3	1		2														C
B10											1							3	2	H
B11							3										1	2		O
B12					1										2				3	O
B13				3		1			2											L
B14					1										2				3	
B15			3		1					2										
B16											2								3	1
B17												2						3	1	
B18					3					2									1	
B19					LEFT				SCHOOL											
B20					2					3									1	
Score	6	6	10	5	16	6	7	0	5	5	5	5	5	3	5	7	6	11	x	3
No. Choosing	3	3	6	3	6	3	4	0	3	3	3	2	2	1	3	3	3	6	x	1
Status	7.5	3	13	1	7.5	6.5	19		13		13		17.5	13	4.5	7.5	2			17.5

SCHOOL C. CLASS E. SOCIOMETRIC TEST 1Weighted Choice.

(Names based on status in 'Open Test')

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
C1						1				3	2					R
C2			1		2			3		R			R	R	R	
C3		3		1	2					R			R	R	R	
C4		2	1		3											
C5	2	1	3							R			R			
C6	1								2	3						
C7				R				2	1	3			R	R	R	
C8			R	R			2		1	3			R	R		
C9		3					2	1								
C10	1	R	R			2					3		R			
C11	2				3			R				1				
C12	3									2					1	
C13				3	R				R	2		1				
C14			2									3			1	
C15				3								2		1		R
C16	1			2		3										

Choice

No. 6 4 4 4 4 3 2 3 3 6 2 4 0 1 2 0

Choosing

Weighted Score 14 7 9 7 6 6 4 6 8 8 3 9 0 3 6 0

Rank 1 1.5 2.5 6.5 9.5 12 9.5 4.5 13 2.5 15.5 14 9.5 15.5

Rejects 2R 2R 1R 1R 1R 3R 1R 5R 5R 5R

SCHOOL C. CLASS E. SOCIOMETRIC TEST 2WEIGHTED SCORE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
C1						1				2						3
C2			3	2	1				R							
C3		2		1	3				R							
C4		2	1		3				R							
C5		2							R		3				1	
C6	1									3						2
C7	3							2	1							
C8		3					2		1							
C9	3		R				1	2								
C10	2					3									R	1
C11	1						R					2			3	
C12										3	1			2		
C13				3						2		1				
C14				1	3										2	
C15					1									2		
C16				2		3				1						

Choice

No. Choosing	5	4	2	5	5	3	2	2	2	5	2	2	0	2	3	3
Weighted Score	10	7	4	11	9	5	5	4	6	9	4	5	0	4	6	6
Rank	2	5	13	5	1	3.5	10	10	13.5	7	3.5	13.5	10	16	13.5	7
Rejects			1R				1R		1R							1R

SCHOOL C. CLASS E. SOCIOMETRIC TEST 1

Open Choice

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	E
C1		x	x		x	x				x	x						6
C2	x		x	x	x	x	x	x	x								8
C3		x		x	x	x	x	x	x								7
C4		x	x		x												3
C5	x	x	x	x		x	x	x									7
C6	x			x			x		x	x						x	6
C7	x	x	x					x	x	x	x	x	x				9
C8	x	x					x		x	x	x	x	x				8
C9	x	x	x				x	x									5
C10	x				x	x	x	x	x		x						7
C11	x	x	x	x	x	x			x	x		x		x	x	x	12
C12	x	x	x	x	x	x	x	x		x	x		x	x	x		13
C13	x	x	x	x				x	x			x					7
C14	x	x	x	x	x		x	x	x			x			x		9
C15	x	x	x	x	x	x					x	x	x	x			10
C16	x			x	x	x				x				x			6

No. Choosing	13	12	11	10	10	9	9	9	9	7	6	5	4	4	3	2
Rank	1	2	3	4.5	4.5	7.5	7.5	7.5	7.5	10	11	12	13.5	13.5	15	16

SCHOOL C. CLASS E. SOCIOMETRIC TEST 2OPEN CHOICE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	E
C1						x				x	x	x				x	5
C2			x	x	x						x	x		x	x		7
C3	x	x		x	x	x											5
C4		x	x		x						x	x					5
C5		x				x	x				x		x	x			6
C6	x			x			x		x	x						x	5
C7	x					x		x	x								4
C8	x	x	x	x		x	x		x	x		x					9
C9	x					x	x	x									4
C10	x				x	x			x			x				x	6
C11	x	x	x	x	x	x				x		x	x		x	x	11
C12	x	x	x	x	x	x				x	x		x	x	x	x	12
C13	x	x	x	x				x	x			x					7
C14				x	x										x	x	4
C15					x									x			2
C16	x			x	x	x				x				x			6

No. Choosing 10 7 6 9 9 10 4 3 5 6 5 7 3 5 4 6

Rank 1.5 5.5 9 3.5 2.5 1.5 13.5 15.5 11 8 11 5.5 13.5 11 13.5 8

Example of statistics used in this SectionCORRELATION BETWEEN STATED I.Q. SCORE AND SOCIOMETRIC STATUSCONTROL GROUP TEST ONE (OPEN VERSION)SPEARMAN RANK CORRELATION COEFFICIENT TEST

<u>Name</u>	<u>Rank in Sociometric Test</u>	<u>I.Q. Rank</u>	<u>Difference</u>	<u>D²</u>
D1	1.5	10.5	9	81
D2	1.5	10.5	9	81.
D3	3.5	7.5	4	16
D4	3.5	4.5	1	1
D5	5.5	3	2.5	6.25
D6	5.5	6	.5	.25
D7	7.5	4.5	3	9
D8	7.5	2	5.5	30.25
D9	9	1	8	96
D10	11.5	19	7.5	56.25
D11	11.5	13.5	2	4
D12	11.5	17	5.5	30.25
D13	11.5	15.5	3	9
D14	14	15.5	1.5	2.25
D15	16.5	13.5	2.5	6.25
D16	16.5	18	1.5	2.25
D17	16.5	7.5	9	81
D18	16.5	10.5	6	36
D19	19	10.5	8.5	72.25
D20	20	20	0	0
				<u>620.25</u>

$$R_s = \frac{x^2 + y^2 - d^2}{2 \cdot 653 \times 658}$$

where $x^2 = \frac{N^3 - N}{12} - T$ where T indicates the sum of the various values of T for the various groups of tied observation.

$$(T = \frac{t^3 - t}{12})$$

$$\text{Then } R_s = \frac{653 + 658 - 620.25}{2 \cdot 653 \times 658} = 1.56$$

EXAMPLE OF USE OF WILCOXON MATCHED-PAIRS SIGNED-RANKS TEST OF SIGNIFICANCE UPON A COMPARISON OF THE NUMBER OF GIRLS REJECTED IN THE FIRST SOCIOMETRIC TEST WITH THOSE REJECTED IN THE SECOND TEST. (TABLE 28).

Control Group

<u>Name</u>	<u>Test 1</u>	<u>Test 2</u>	<u>Difference</u>	<u>Rank</u>
D1	0	1	+ 1	+ 3.5
D2	0	0	0	x
D3	1	0	- 1	- 3.5
D4	0	2	+ 2	+ 7.5
D5	0	1	+ 1	+ 3.5
D6	0	0	0	x
D7	0	0	0	x
D8	0	0	0	x
D9	0	0	0	x
D10	1	1	0	x
D11	0	0	0	x
D12	0	0	0	x
D13	0	0	0	x
D14	0	2	+ 2	+ 7.5
D15	1	0	- 1	- 3.5
D16	0	3	+ 3	9
D17	0	4	+ 4	10
D18	0	1	+ 1	+ 3.5
D19	1	0	- 1	- 3.5
D20	4	13	+ 9	11

Null hypothesis Ho = the number of rejections made in tests one and two does not differ significantly.
i.e. using the Wilcoxon test, the sum of the positive ranks = the sum of the negative ranks.

H1 : the number of rejections in the two tests will differ significantly
i.e. using Wilcoxon test the sum of the positive ranks \neq the sum of the negative ranks.

The statistical test developed by Wilcoxon was chosen because each individual was his own control and the sociometric test above yielded difference scores which could be ranked in order of magnitude.

The differences were ranked as above. N = the number of pairs minus those whose difference was zero = 11

The sum of the smallest sign (negative) gave

$$T = (-3.5) + (-3.5) + (-3.5) = 10.5$$

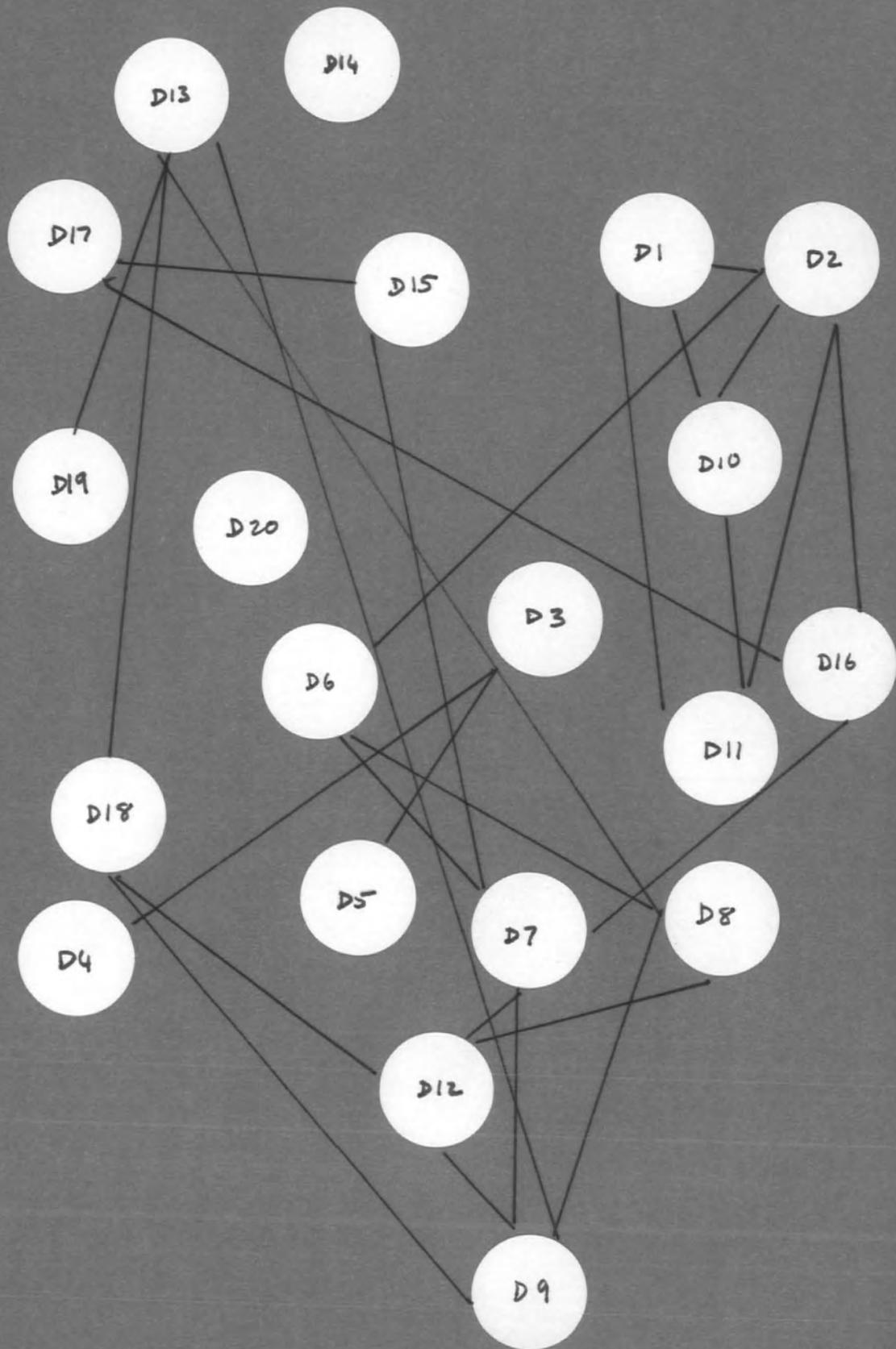
Reference to the table of critical values for T

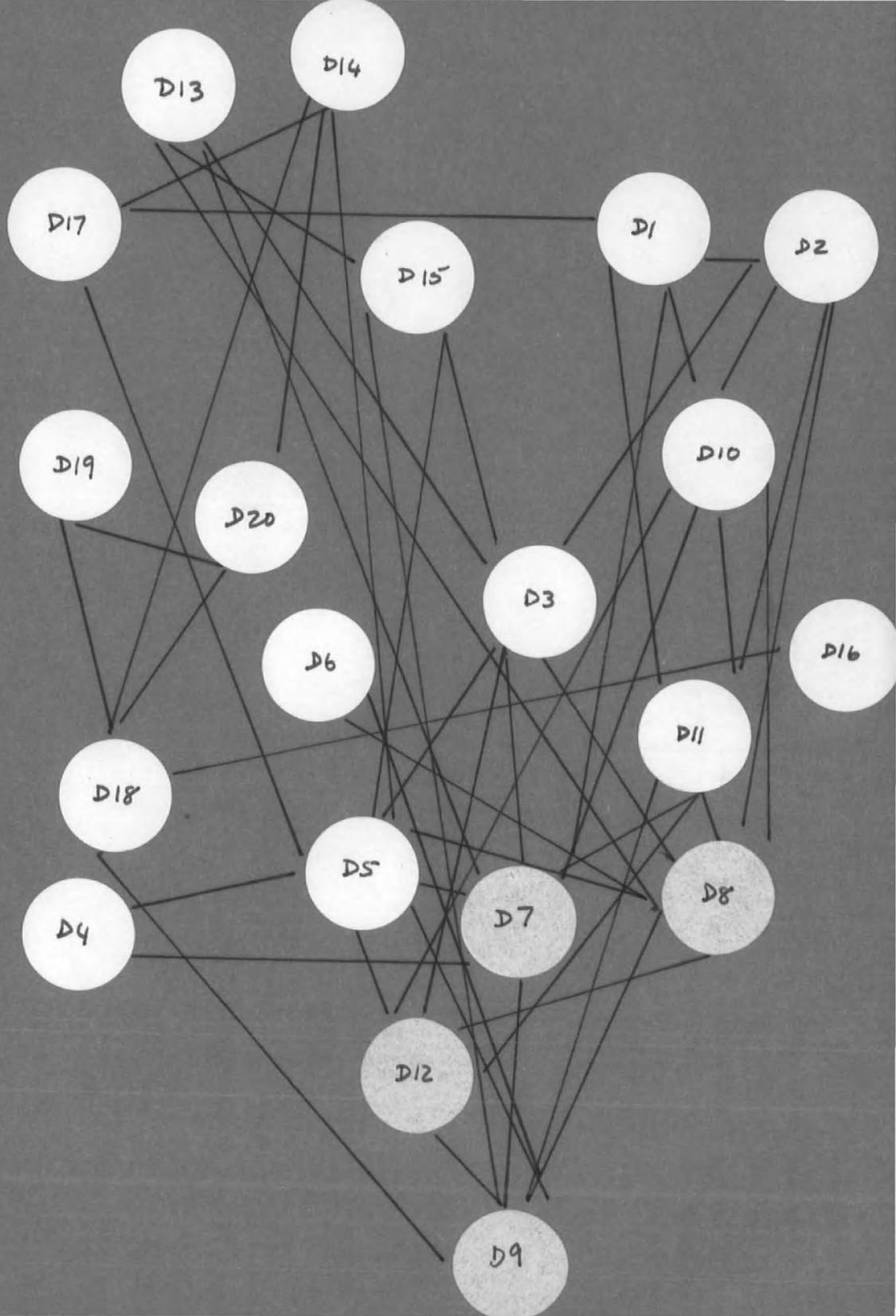
permits rejection of the null hypothesis at $\alpha = .05$

CONTROL GROUP

OPEN CHOICE

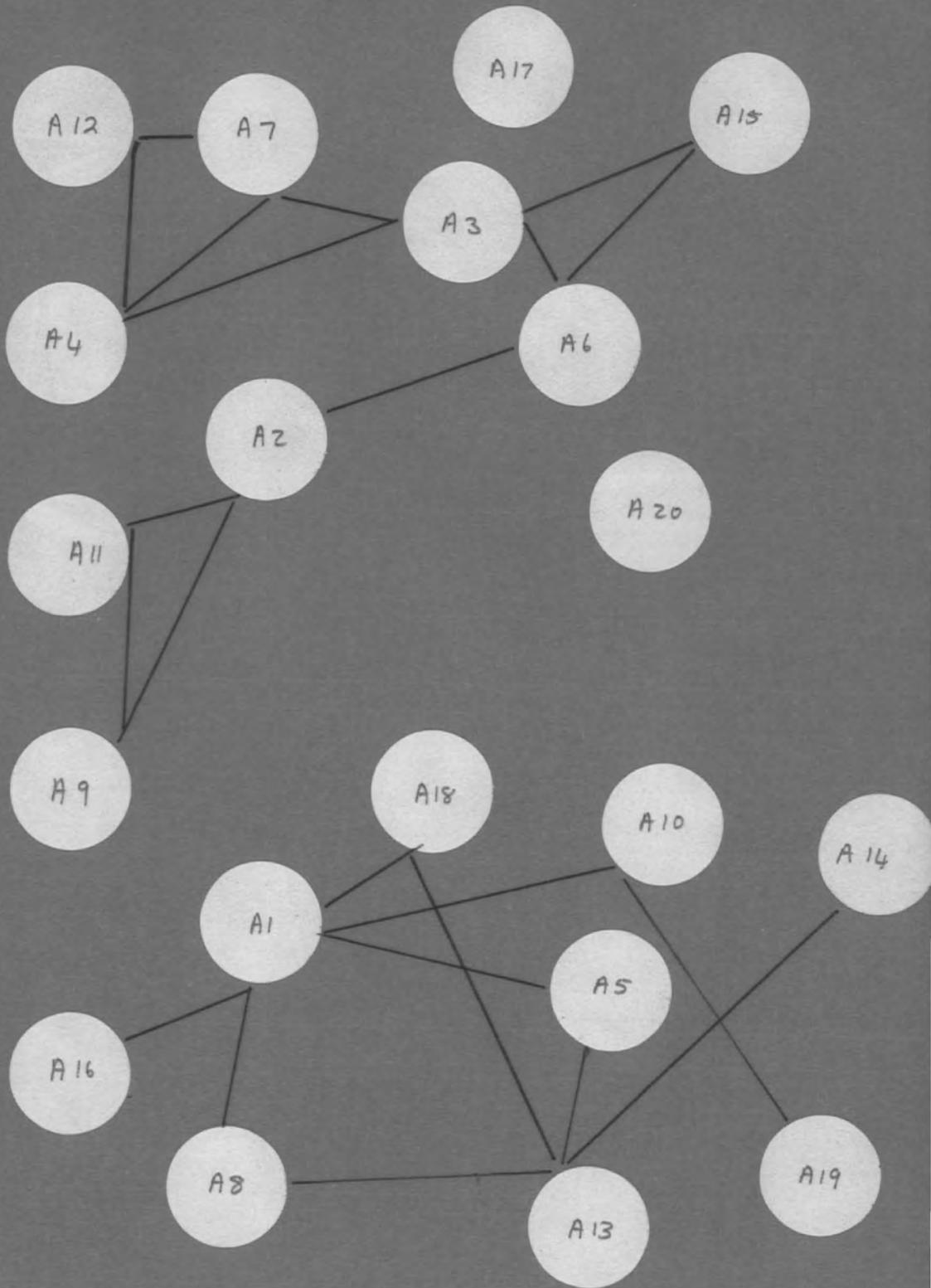
MUTUALS



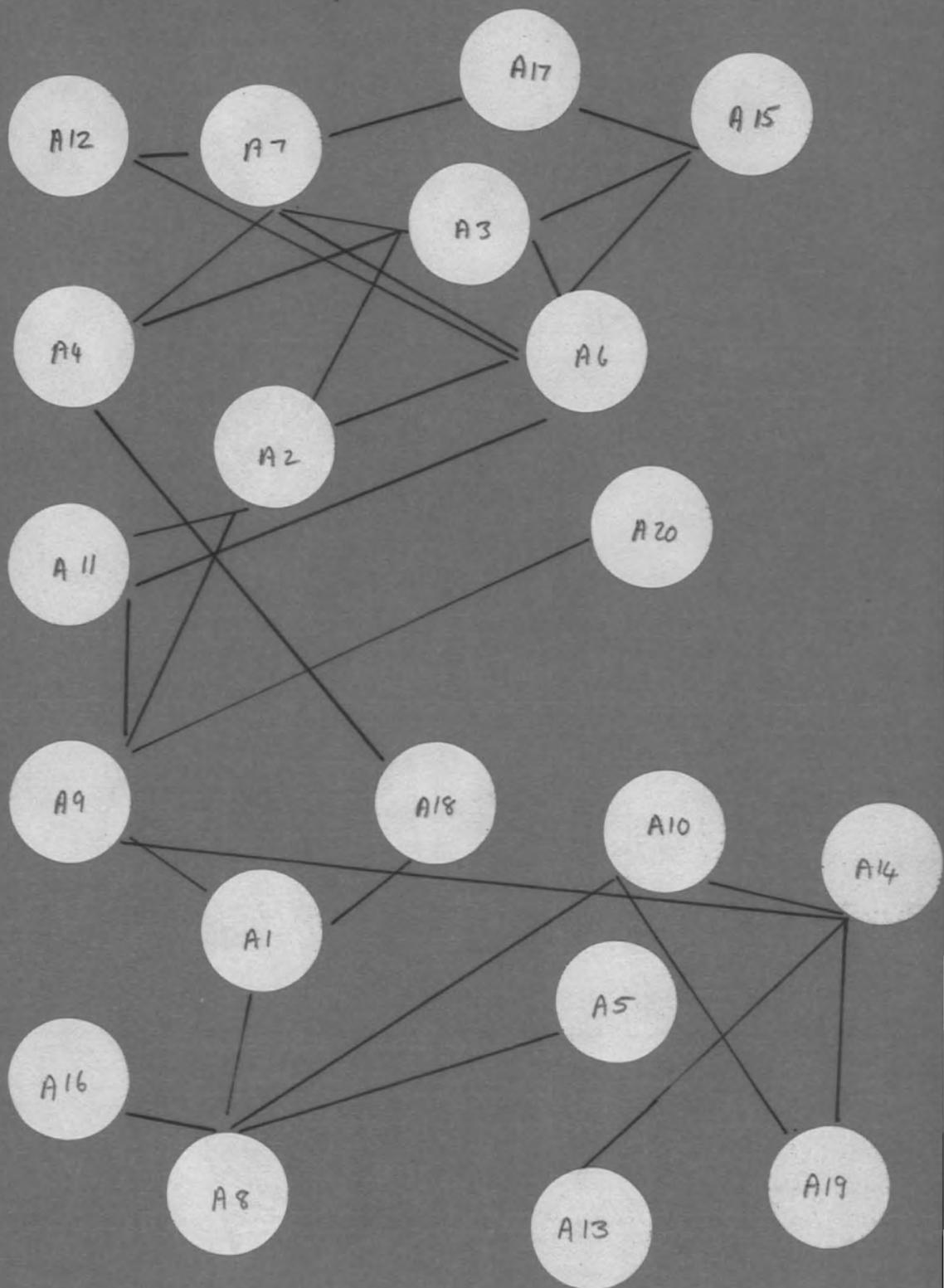


School A Open Choice

Mutuals

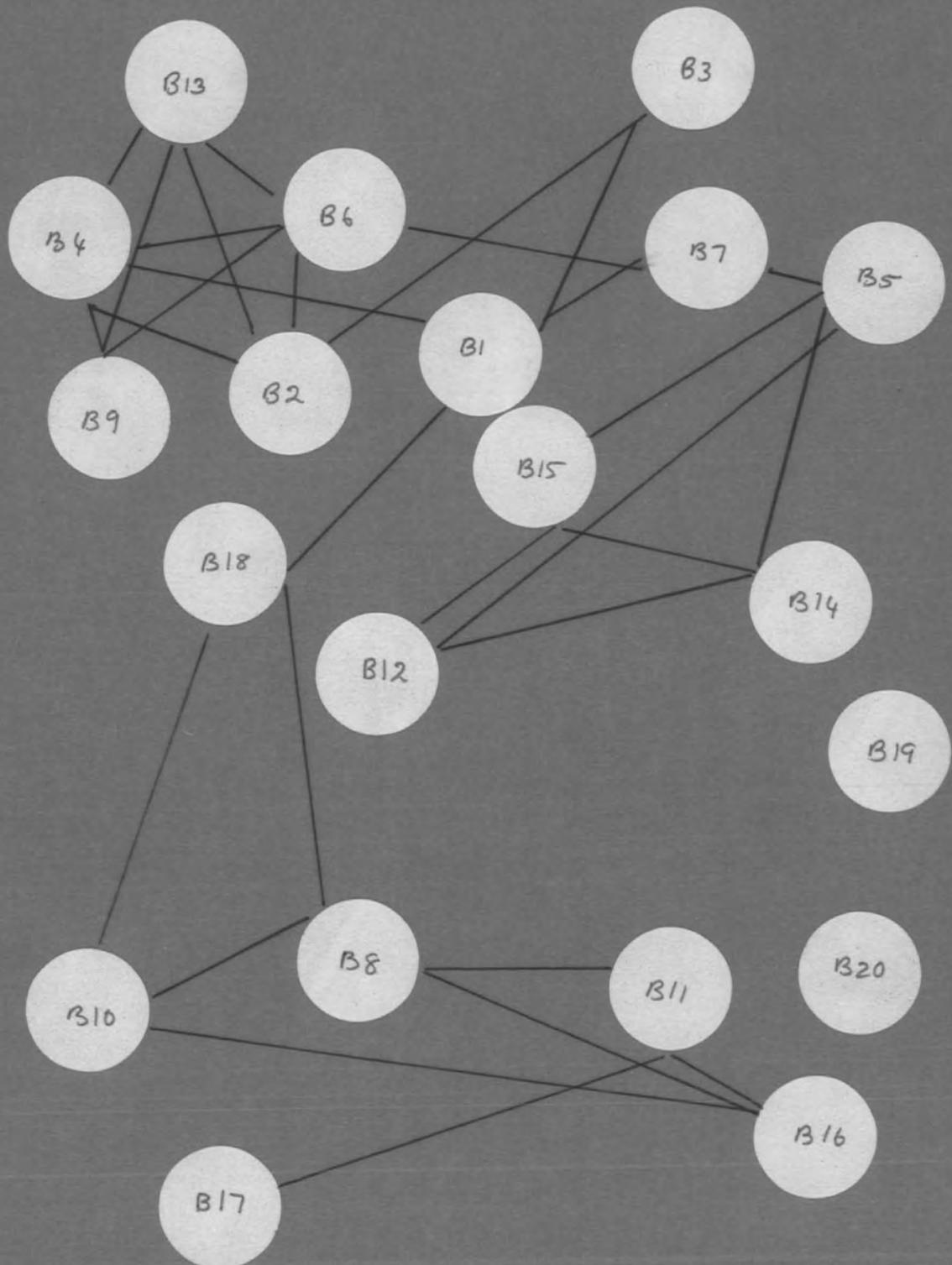


School A Open Choice Mutuals



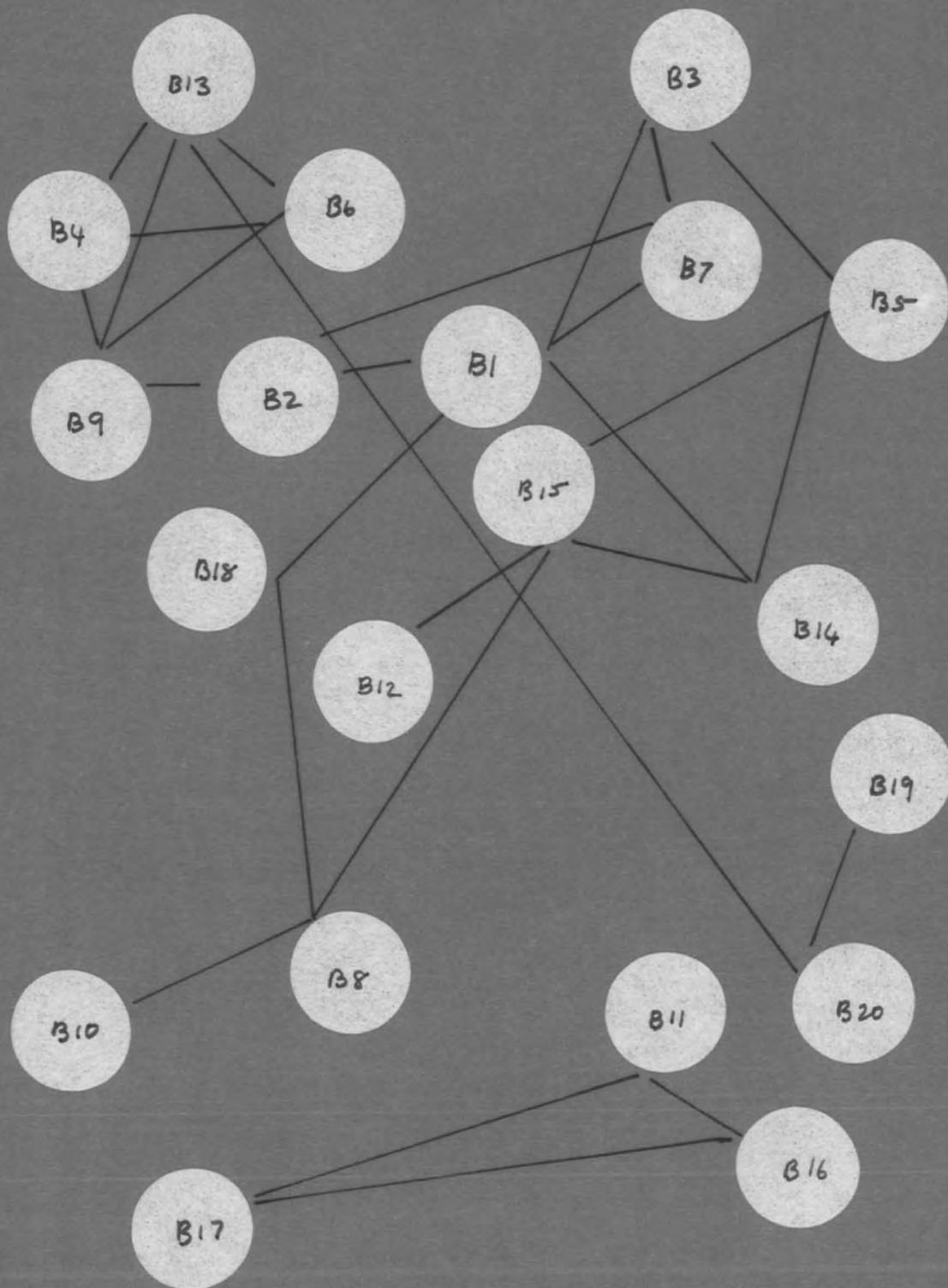
Sociometric Test 1

School B

Open Choice Mutuals

Sociometric Test 2
School B Open Choice

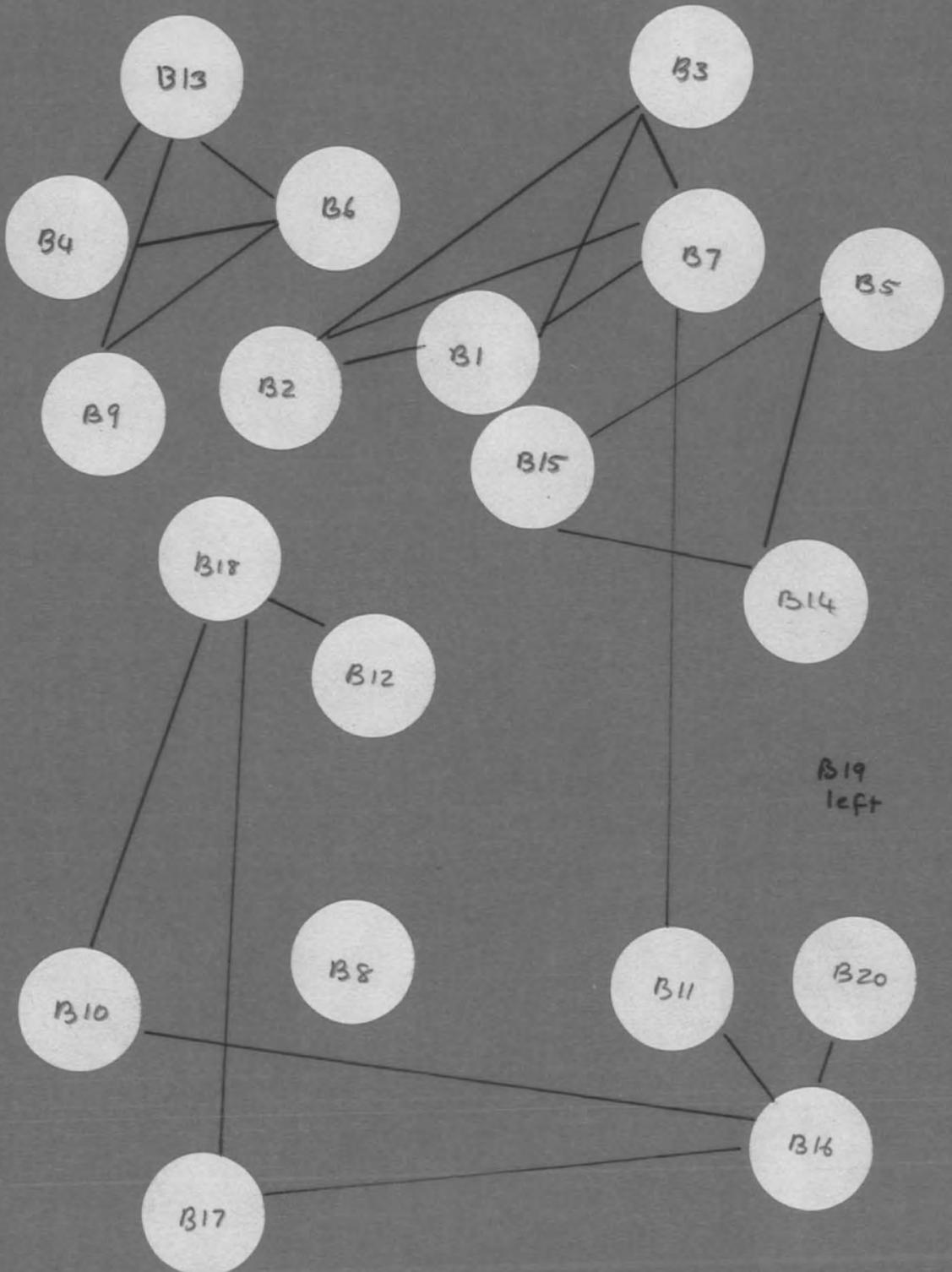
Mutuals



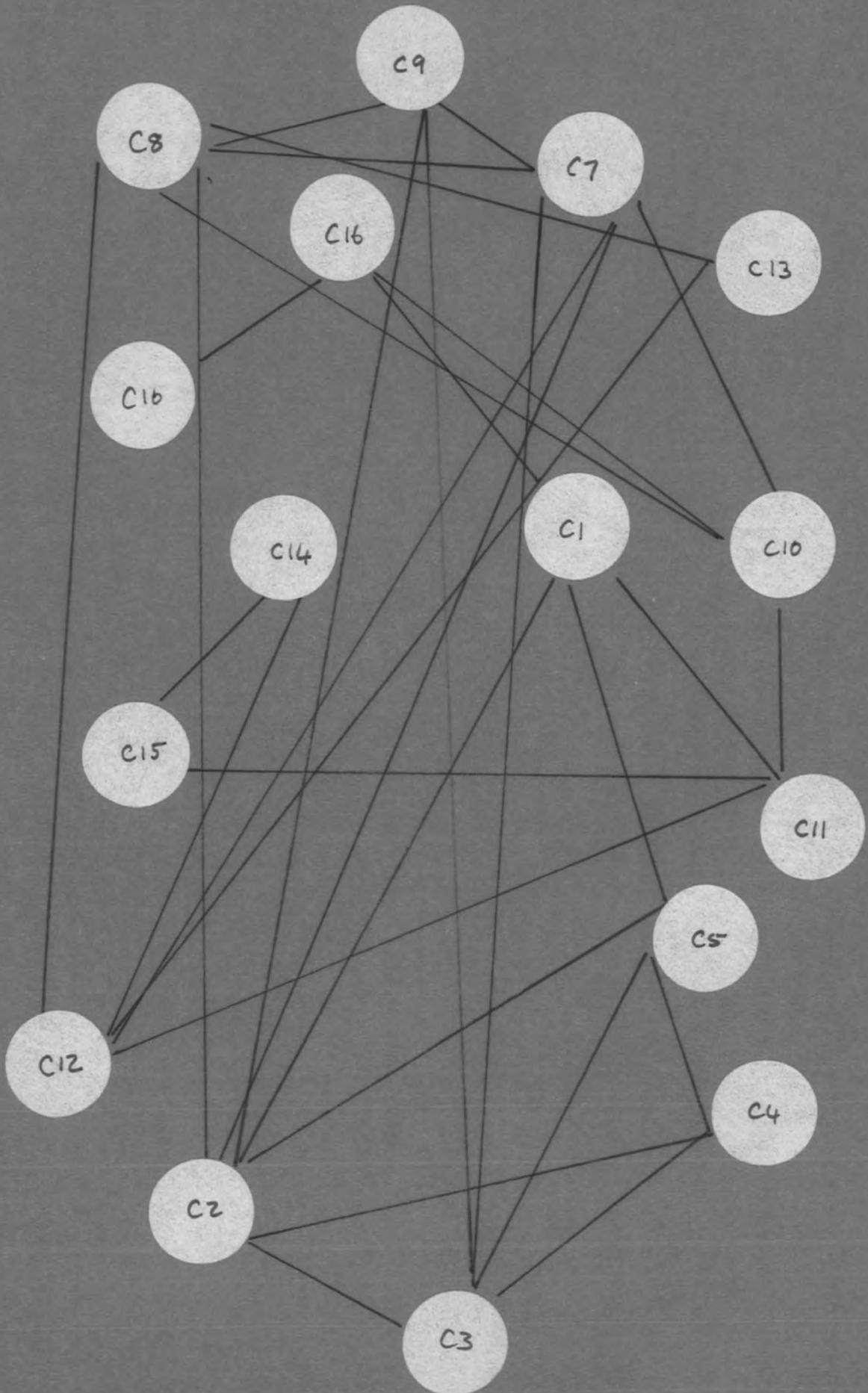
Sociometric Test 3

School B

Open Choice

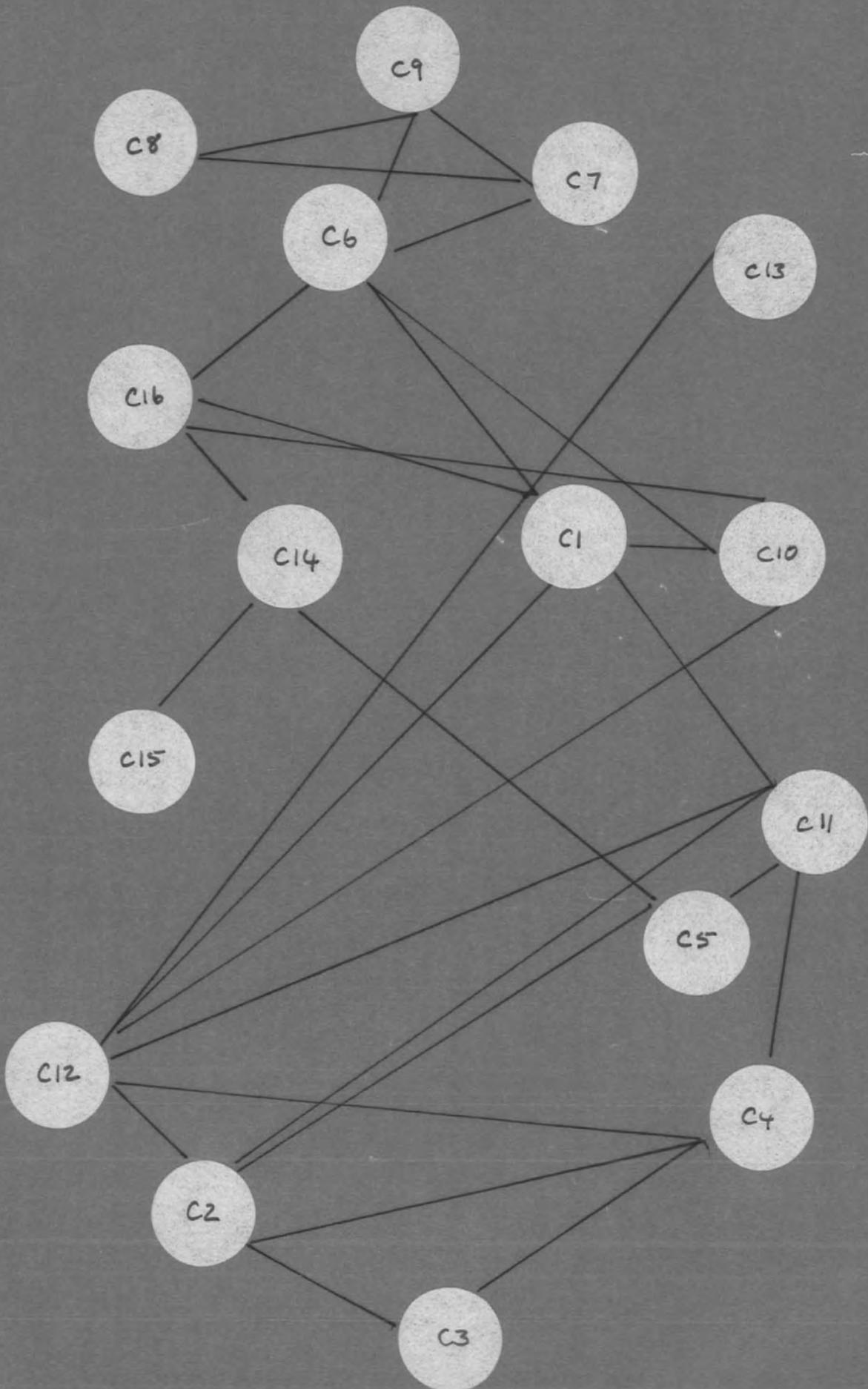
Mutuals

Sociometric Test 1
School C (Experimental) Open Choice Mutuals



Sociometric Test 2

School C (Experimental) Open Choice Mutuals



Example of use of Mann Whitney test of significance for two unrelated groups.

The test was used to compare gains/losses in scores for 'Unforthcomingness' made by the group from School A with those made by the control group.

<u>Changes in Control Group</u>	<u>Rank</u>	<u>Changes in School A</u>	<u>Rank</u>
+ 1.00	32	- .2	6
+ .7	25	+ .7	25
+ 1.00	32	+ .3	11.5
+ .5	16.5	+ .2	9
+ .7	25	- .7	1
+ .7	25	+ .7	25
+ 1.2	34	+ .5	16.5
+ .7	25	- .2	6
+ .2	9	+ .5	16.5
+ .5	16.5	- .3	3.5
+ .5	16.5	+ .2	9
+ 1.00	32	- .5	2
+ .7	25	- .2	6
+ .5	16.5	+ .8	30
+ .7	25	+ .3	11.5
+ .7	25		
+ .5	16.5		
+ 1.5	35		
+ .5	16.5		
$N^2 = 19$		$N^1 = 16$	

$$\Sigma = 448.0$$

$$\begin{aligned}
 U &= N^1 N^2 + \frac{N^2 (n^2 + 1)}{2} - R_2 \\
 &= 16 \times 19 + \frac{19^2 (19 + 1)}{2} - 448 \\
 &= 46
 \end{aligned}$$

∴ The null hypothesis may be rejected at .002 level of significance.

APPENDIX 3Behaviour AssessmentContents

1. Assessment form.
2. Scores averaged.
3. Examples of statistical calculations.

Social Behaviour Assessment Form.

DOCUMENT A

School _____

Girl's Name _____

Date of Birth _____

Stated I.Q. _____

Below are descriptions of behaviour and of attitudes to others and to work which you may have noticed in this child.

Please put an X under the appropriate column.

(Scores 1 2 3 4 5)

	NEVER	SELDOM	OFTEN	FREQUENTLY	EXTREMELY OFTEN	LEAVE BLANK
Restless in class						
Displays a short attention span.						
Unable to work well in a group						
Left without a partner						
Unable to listen readily to other girls						
Makes no contribution to class discussion						
Easily gives up a physical task						
Easily gives up a mental task						
Inattentive to teachers' instructions						
Fights with other girls						
Falls into a temper						
Unable to respond to new places						
Unable to respond to new situations						
Seems miserable or worried						

School A

		<u>Averages</u>		<u>Behaviour</u>
Unf.	(1)	2.57	(2)	2.66
Agg.	(1)	2.87	(2)	2.57
Restless	(1)	3.17	(2)	2.98
S.I.	(1)	3.14	(2)	3.15

School B

Unf.	(1)	2.97	(2)	1.82	(3)	1.27
Agg.	(1)	2.62	(2)	1.87	(3)	1.89
Restless	(1)	3.22	(2)	2.57	(3)	2.25
S.I.	(1)	3.52	(2)	2.99	(3)	2.96

C.E.

Unf.	(1)	2.78	(2)	2.03
Agg.	(1)	2.78	(2)	2.06
Rest.	(1)	3.36	(2)	2.63
S.I.	(1)	3.56	(2)	2.11

C.C.

Unf.	(1)	1.88	(2)	2.52
Agg.	(1)	1.62	(2)	1.6
Restless	(1)	2.3	(2)	2.55
S.I.	(1)	1.98	(2)	2.54

Behaviour Assessment.CONTROL GROUP

(Average Scores)

	<u>Unforthcomingness</u>			<u>Aggression</u>			<u>Restlessness</u>			<u>Social Isolation</u>		
	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>
D1	1.25	2.25	+ 1.00	2	1	- 1.00	3	2.4	- .6	2.3	2	- .3
D2	1.25	2	+ .75	1	1	0	1.6	1.6	0	1.3	1.3	0
D3	2.25	3.25	+ 1.00	2	2	0	2.8	3.4	+ .6	2	2.3	+ .3
D4	1	1.5	+ .5	1	1	0	1.2	1	- .2	1	2	+1.00
D5	2	2.75	+ .75	2	2	0	2	2	0	1.3	1.3	0
D6	1.5	2.25	+ .75	1	1	0	2.2	2.4	+ .2	2	2.3	+ .3
D7	2.75	4	+ 1.25	1	1	0	3	3.6	+ .6	2	2.3	+ .3
D8	2	1.25	- .75	2	1.5	- .5	2	2	0	2.3	2	- .3
D9	2	2.25	+ .25	1	1	0	1.8	1.8	0	2	2	0
D10	2.25	2.25	0	2	1.5	- .5	2	2	0	2.3	2.3	0
D11	2	2.5	+ .5	2	2.5	+ .5	2	2.2	+ .2	2.3	2.6	+ .3
D12	2	2.5	+ .5	2	1	- 1.00	1.8	2	+ .2	2	2.3	+ .3
D13	2	3	+ 1.00	2	2.5	+ .5	3.4	4.2	+ .8	2.6	3.3	+ .7
D14	1.75	2.5	+ .75	1	1	0	1.4	2.4	+1.0	2	2.3	+ .3
D15	2.25	2.75	+ .5	1.5	2	+ .5	2.4	3	+ .6	2.6	3.6	+1.00
D16	2	2.75	+ .75	1	1	0	2	2.6	+ .6	2.6	3	+ .4
D17	2.25	3	+ .75	4	5	+ 1.00	4.2	4.8	+ .6	3	4.3	+1.3
D18	2	2.5	+ .5	1	1	0	1.8	2	+ .2	1.3	2	+ .7
D19	1.25	2.75	+ 1.5	1	1	0	1.6	1.2	+ .4	1.3	2.6	+1.3
D20	2	2.5	+ .5	2	2	0	3.8	4.4	+ .6	3	5	+2.00

1 No change
19 '+' i.e.
deterioration

12 No change
5 '+' i.e.
deterioration
3 '-' i.e.
improvement

5 No change
13 '+' i.e.
deterioration
2 '-' i.e.
improvement

4 No change
14 '+' i.e.
deterioration
2 '-' i.e.
improvement

Behaviour AssessmentSCHOOL A

(average Scores)

	<u>Unforthcominess</u>			<u>Aggression</u>			<u>Restlessness</u>			<u>Social Isolation</u>		
	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>
A1	2.5	2.5	0	2.0	2.0	0	2.2	2.4	+ .2	2.3	2.6	+ .3
A2	2.2	2.0	- .2	3.0	3.0	0	4.0	3.6	- .4	3.6	3.3	- .3
A3	1.0	1.7	+ .7	2.0	2.0	0	2.4	2.2	- .2	1.0	1.6	+ .6
A4	2.2	2.5	+ .3	3.5	3.0	-.5	2.8	2.2	- .6	3.3	3.6	+ .3
A5	1.7	1.7	0	1.0	1.0	0	2.2	2.2	0	3.0	2.6	- .4
A6	2.5	2.7	+ .2	4.0	3.0	-1.00	3.2	2.6	- .6	3.6	3.0	- .6
A7	2.0	2.0	0	4.0	4.0	0	2.0	2.6	0	2.6	2.6	0
A8	3.2	2.5	- .7	1.0	1.0	0	2.2	2.2	0	3.6	3.3	- .3
A9	1.0	1.7	+ .7	2.5	3.0	+ .5	2.8	4.2	+1.4	4.3	4.0	- .3
A10	3.2	3.7	+ .5	2.0	2.0	0	4.6	4.4	- .2	4.0	3.6	- .4
A11	1.7	1.5	- .2	1.5	1.5	0	1.8	2.0	+ .2	1.6	2.3	+ .7
A12	2.0	2.5	+ .5	3.0	3.5	+ .5	2.0	3.2	+1.2	2.6	3.3	+ .7
A13	5.0	4.7	- .3	4.0	4.0	0	5.0	5.0	0	3.0	4.0	+1.00
A14	2.5	2.2	- .3	2.5	1.5	- 1.00	2.8	2.4	- .4	2.6	2.6	0
A15	2.2	2.2	0	5.0	5.0	0	3.6	2.6	-1.00	2.6	2.3	- .3
A16	4.0	4.2	+ .2	1.5	1.5	0	4.2	3.2	-1.00	4.3	3.3	-1.3
A17	3.0	2.5	- .5	2.5	2.0	- .5	2.2	2.2	0	3.3	3.0	- .3
A18	3.2	3.0	- .2	4.0	3.5	- .5	4.4	3.5	- .9	4.0	4.0	0
A19	3.7	4.5	+ .8	2.5	2.5	0	4.0	3.5	- .5	4.0	5.0	+1.00
A20	2.7	3.0	+ .3	5.0	2.5	- 2.5	4.4	3.4	- 1.00	3.6	4.0	+ .4

4 No change
 9 '+' i.e.
 deterioration
 6 '-' i.e.
 improvement

12 No change
 2 '+' i.e.
 deterioration
 6 '-' i.e.
 improvement

5 No change
 4 '+' i.e.
 deterioration
 11 '-' i.e.
 improvement

3 No change
 8 '+' i.e.
 deterioration
 9 '-' i.e.
 improvement

Behaviour AssessmentSCHOOL B.

(Average Scores)

	<u>Unforthcomingness</u>			<u>Aggression</u>			<u>Restlessness</u>			<u>Social Isolation</u>		
	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>
B1	2	1.0	-1.00	2.0	1.0	-1.00	2.2	1.8	-.4	3.0	2.3	-.7
B2	2	1.5	-.5	2.0	2.0	0	2.0	2.0	0	1.3	2.0	+.7
B3	3.7	1.0	-1.7	2.0	1.0	-1.00	2.4	1.0	-1.4	3.0	2.6	-.4
B4	3.2	2.5	-.7	4.0	4.0	0	3.2	3.6	+.4	3.7	3.3	-.4
B5	3.0	2.0	-1.00	2.0	2.0	0	2.8	2.6	-.2	3.3	2.6	-.7
B6	3.0	1.7	-1.3	4.0	3.5	-.5	3.6	2.8	-.8	3.6	3.3	-.3
B7	2.6	2.2	-.4	2.0	1.0	-1.00	3.0	2.8	-.2	3.0	3.0	0
B8	2.7	2.0	-.7	2.5	1.0	-1.5	3.0	2.4	-.6	4.0	3.0	-1.0
B9	3.0	1.7	-1.3	4.0	4.0	0	4.0	2.6	-1.4	3.6	3.0	-.6
B10	3.0	1.7	-1.3	2.0	1.0	-1.00	3.4	2.4	-1.00	3.6	3.0	-.6
B11	3.0	1.0	-1.00	2.5	1.0	-1.5	3.4	2.4	-1.00	4.3	3.3	-1.0
B12	2.5	1.7	-.8	2.0	1.0	-1.00	3.6	2.6	-1.00	4.00	3.3	-.7
B13	3.0	1.7	-1.3	4.0	2.0	-2.00	4.0	2.4	-1.6	3.6	3.3	-.3
B14	2.0	2.0	0	1.0	1.0	0	2.0	1.6	-.4	3.0	3.0	0
B15	2.5	2.0	-.5	2.0	1.0	-1.00	4.2	2.6	-1.6	4.0	3.3	-.7
B16	3.0	2.0	-1.00	3.0	2.0	-1.00	3.0	3.2	+.2	3.6	3.3	-.3
B17	2.7	2.5	-.2	2.0	2.0	0	3.0	4.2	+1.2	3.6	3.3	-.3
B18	3.5	2.5	-1.00	2.0	1.0	-1.00	3.4	2.4	-1.00	4.0	2.6	-1.4
B19	2.7	2.0	-.7	5.0	4.0	-1.00	4.8	2.8	-2.00	4.3	3.3	-1.0
B20	2.7	1.7	-1.00	2.5	2.0	-.5	3.4	3.2	-.2	4.0	3.0	-1.0

Behaviour AssessmentSCHOOL B

(Average Scores)

	<u>Unforthcomingness</u>			<u>Aggression</u>			<u>Restlessness</u>			<u>Social Isolation</u>		
	<u>T2</u>	<u>T3</u>	<u>Change</u>	<u>T2</u>	<u>T3</u>	<u>Change</u>	<u>T2</u>	<u>T3</u>	<u>Change</u>	<u>T2</u>	<u>T3</u>	<u>Change</u>
B1	1.0	1.2	+ .2	1.0	2.0	+1.00	1.8	1.4	- .4	2.3	2.6	+ .3
B2	1.5	1.5	0	2.0	2.0	0	2.0	1.4	- .6	2.0	2.6	+ .6
B3	1.0	1.0	0	1.0	1.0	0	1.0	2.4	+1.4	2.6	2.0	- .6
B4	2.5	2.5	0	4.0	4.0	0	3.6	3.6	0	3.3	3.3	0
B5	2.0	1.5	- .5	2.0	2.0	0	2.6	2.6	0	2.6	3.3	+ .7
B6	1.7	1.0	+ .7	3.5	3.0	- .5	2.8	2.0	- .8	3.3	3.3	0
B7	2.2	2.2	0	1.0	2.0	+1.00	2.8	3.2	+ .4	3.0	3.0	0
B8	2.0	1.2	- .8	1.0	2.0	+1.00	2.4	2.4	0	3.0	3.3	+ .3
B9	1.7	1.2	- .5	4.0	3.0	-1.00	2.6	2.4	- .2	3.0	2.3	- .7
B10	1.7	1.0	- .7	1.0	1.0	0	2.4	1.8	- .6	3.0	2.6	- .4
B11	1.0	1.0	0	1.0	2.0	+1.00	2.4	2.2	-.2	3.3	3.0	- .3
B12	1.7	1.0	- .7	1.0	1.0	0	2.6	1.8	- .8	3.3	3.3	0
B13	1.7	1.0	- .7	2.0	3.0	+1.00	2.4	2.2	- .2	3.3	3.3	0
B14	2.0	1.0	-1.00	1.0	1.0	0	1.6	1.6	0	3.0	3.0	0
B15	2.0	1.2	- .8	1.0	1.5	+ .5	2.6	2.0	- .6	3.3	2.0	- 1.3
B16	2.0	1.0	-1.00	2.0	3.0	+1.00	3.2	3.0	-.2	3.3	3.6	+ .3
B17	2.5	1.0	-1.5	2.0	2.5	+ .5	4.2	2.4	-1.8	3.3	3.6	+ .3
B18	2.5	1.0	- 1.5	1.0	2.0	+1.00	2.4	2.0	- .4	2.6	3.0	+ .4
B19	-	-	-	-	-	-	-	-	-	-	-	-
B20	1.7	1.7	0	2.0	2.0	0	3.2	2.4	- .8	3.0	3.3	+ .3

Behaviour Assessment

SCHOOL C. (EXPERIMENTAL GROUP)

(Average Scores)

	<u>Unforthcomingness</u>			<u>Aggression</u>			<u>Restlessness</u>			<u>Social Isolation</u>		
	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>	<u>T1</u>	<u>T2</u>	<u>Change</u>
C1	2.5	1.00	-1.5	2.5	2.0	-.5	3.2	2.0	-1.2	2.3	1	-1.3
C2	2.0	1.75	-.25	2.5	2.0	-.5	2.2	2.0	-.2	2	1.3	-.7
C3	2.5	1.50	-1.00	2.5	2.0	-.5	3	2.0	-1.00	2	1.3	-.7
C4	2.25	1.75	-.5	2.0	1.0	-1.0	2.4	1.6	-.8	2	1.6	-.4
C5	4.0	2.00	-2.00	4.0	3.25	-.75	4.4	3.4	-1.00	3.6	2.3	-1.3
C6	2.25	1.75	-.5	2.0	1.5	-.5	3.6	2.6	-1.00	2.2	1	-1.3
C7	2.0	3.00	+1.00	2.0	2.5	-.5	3.2	3.0	-.2	2.3	2	-.3
C8	2.5	2.00	-.5	5.0	5.0	0	4.6	4.2	-.4	4	3	-1.00
C9	3.0	1.75	-1.25	5.0	5.0	0	4.4	3.8	-.6	3.3	3.3	0
C10	3.75	3.50	-.25	5.0	4.5	-.5	4.6	4.2	-.4	3.3	3.3	0
C11	2.0	1.75	-.25	1.5	1.5	0	2	1.8	-.2	2	2	0
C12	2.25	1.75	-.5	1.0	1.0	0	2.6	2.0	-.6	3	1.6	-1.4
C13	3.25	2.25	-1.00	2.0	1.0	-1.0	3	2.6	-.4	3.3	2.6	-.7
C14	4.0	2.25	-1.25	1.5	1.0	-.5	4.6	2.8	-1.6	2.6	2.6	0
C15	3.0	1.75	-1.25	1.5	1.0	-.5	2.2	1.2	-1.00	4.3	2.3	-2.0
C16	3.0	2.75	-.25	4.5	1.5	-3.0	4	3.0	-1.00	4	2.6	-1.4

1 '+' i.e.
deterioration

4 No change

4 No change

15 '-' i.e.
improvement12 '-' i.e.
improvement16 '-' i.e.
improvement12 '-' i.e.
improvement.

Example of Wilcoxon Matched-Pairs signed ranks test applied to
Behaviour Assessment

School B. Tests 1 and 2

Restlessness

<u>Name</u>	<u>Average in Test 1</u>	<u>Average in Test 2</u>	<u>Change</u>	<u>Rank</u>
B1	2.2	1.8	- .4	- 6
B2	2.0	2.0	0	-
B3	2.4	1.0	- 1.4	- 15.5
B4	3.2	3.6	+ .4	+ 6
B5	2.8	2.6	- .2	- 2.5
B6	3.6	2.8	- .8	- 9
B7	3.0	2.8	- .2	- 2.5
B8	3.0	2.4	- .6	- 8
B9	4.0	2.6	- 1.4	- 15.5
B10	3.4	2.4	- 1.0	- 11.5
B11	3.4	2.4	- 1.0	- 11.5
B12	3.6	2.6	- 1.0	- 11.5
B13	4.0	2.4	- 1.6	- 17.5
B14	2.0	1.6	- .4	- 6
B15	4.2	2.6	- 1.6	- 17.5
B16	3.0	3.2	+ .2	+ 2.5
B17	3.0	4.2	+ 1.2	+ 1.4
B18	3.4	2.4	- 1.0	- 11.5
B19	4.8	2.8	- 2.0	- 19
B20	3.4	3.2	- .2	- 2.5

'+' shows deterioration of behaviour (3)

'-' shows improvement of behaviour (16)

0 shows no change.

Null hypothesis : There is no difference in the scores for restlessness the two tests.

i.e. using Wilcoxon test the sum of positive ranks =
the sum of the negative ranks.

H1 : the scores for restlessness will show a significant improvement in test two i.e. the sum of the positive ranks > the sum of the negative ranks.

N = Number of pairs less those whose difference is zero. = 19

T = The sum of the smaller of the sums of like-signed ranks
= (+6) + (+2.5) + (14) = 22.5

Reference to the table of significant values for T shows that the null hypothesis may be rejected at .005 for a one tailed test (the direction of change having been predicted in H1)

APPENDIX 4MOVEMENT ASSESSMENTContents

1. Form used for assessment.
2. Scores gained in assessment.
3. Example of statistics used in Chapter 9.

Sheet 2

TASK 3.

Demonstrate FIRM/STRONG MOVEMENT Music Finlandia Girls move.

Names

	1	2	3	4	5 +

ALSO note ABILITY TO BECOME FULLY STRETCHED.

	1	2	3	4	5

TASK 4.

Demonstrate LIGHTNESS/ DELICATE MOVEMENT Music Fairy of canaries

Girls move.

	1	2	3	4	5

TASK 5.

Demonstrate SUDDEN MOVEMENT Music - use percussion say skull

Girls move

	1	2	3	4	5

SEE OVER FOR REST OF THIS TASK.

Task 5 continued.

Also note ABILITY TO USE DIFFERENT BODY PARTS.

Names

	1	2	3	4	5

TASK 5.

Demonstrate SUSTAINED MOVEMENT. Music Use percussion say gong

	1	2	3	4	5

TASK 6.

Demonstrate LEADING A PARTNER. Music Greig's Morning

Girls take turns.

Leading

	1	2	3	4	5

Following

	1	2	3	4	5

TASK 7

see next sheet

Sheet 4

TASK 7.

With the girls make up a dance on witches. Music Chimes

Note CONTRIBUTION TO PLANNING.

Names

	1	2	3	4	5

Note SENSITIVITY TO OTHERS IN GROUP.

	1	2	3	4	5

Note ABILITY TO STOP WHEN MUSIC SUGGESTS THIS.

	1	2	3	4	5

Note SENSITIVITY TO THE MUSIC.

	1	2	3	4	5

Please add, after the session is over, any further observations which you feel able to make.

Movement Assessment.Control Group

<u>Name</u>	<u>T</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>	<u>N</u>	<u>O</u>	<u>P</u>
D1	(1)	3	3	2	2	4	3	3	3	2	4	4	4	4	2	4	4
	(2)	3	3	1	2	3	2	3	3	1	3	4	4	4	2	4	4
D2	(1)	Not present on either occasion.															
	(2)	Not present on either occasion.															
D3	(1)	3	2	3	3	3	2	2	2	2	2	3	3	2	3	2	3
	(2)	2	2	2	2	2	1	2	3	2	1	2	2	2	2	1	2
D4	(1)	3	3	3	4	3	3	4	3	3	3	4	4	3	3	3	4
	(2)	2	2	3	5	4	3	2	3	3	2	2	4	4	4	1	3
D5	(1)	3	3	3	4	4	3	3	3	3	3	4	4	4	4	4	4
	(2)	4	4	3	5	4	3	3	3	2	3	4	4	4	4	3	2
D6	(1)	4	4	4	3	4	3	3	4	4	4	2	2	4	3	5	3
	(2)	4	3	4	4	5	3	3	4	3	4	3	3	4	3	3	2
D7	(1)	2	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0
	(2)	3	1	3	1	0	0	4	1	1	0	0	0	0	0	0	0
D8	(1)	2	3	2	4	4	4	3	3	2	3	3	3	2	1	2	2
	(2)	3	3	2	4	4	2	4	3	2	4	4	4	4	3	3	4
D9	(1)	3	4	4	3	3	4	3	3	2	2	2	3	2	2	4	2
	(2)	4	2	3	2	4	3	3	2	2	3	3	3	3	1	2	3
D10	(1)	2	3	3	3	4	4	2	2	2	2	4	2	2	3	1	3
	(2)	2	3	2	4	3	2	3	3	3	2	2	2	3	2	2	3
D11	(1)	3	3	2	3	4	4	3	3	2	3	4	2	2	1	1	2
	(2)	4	3	2	4	3	2	3	3	2	3	2	2	4	3	2	3
D12	(1)	2	1	1	3	2	2	1	2	1	1	3	3	2	2	1	4
	(2)	2	1	1	2	2	2	2	1	1	1	3	3	2	2	1	2
D13	(1)	1	1	2	1	2	2	1	1	1	1	1	1	1	2	1	1
	(2)	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
D14	(1)	2	1	2	2	2	2	2	2	1	1	1	2	1	2	1	1
	(2)	1	1	2	2	1	1	1	1	1	1	1	1	1	3	2	2
D15	(1)	3	4	3	3	4	3	2	4	3	2	2	2	2	2	2	2
	(2)	3	4	3	4	4	3	3	4	3	3	1	1	3	3	1	2
D16	(1)	3	3	3	3	4	2	2	3	3	3	3	2	2	2	2	3
	(2)	2	2	3	3	2	2	3	2	3	2	2	1	2	3	1	2
D17	(1)	2	4	2	2	3	3	3	4	2	3	2	3	3	4	5	4
	(2)	1	2	1	3	3	3	1	1	2	3	1	1	3	2	3	2
D18	(1)	2	2	1	3	2	4	2	1	1	1	2	2	3	2	3	1
	(2)	2	1	2	3	2	4	1	1	1	2	2	2	3	1	2	1
D19	(1)	2	2	2	3	3	3	2	2	1	3	2	2	2	1	5	2
	(2)	2	2	2	2	2	2	2	1	1	2	2	2	2	2	3	2
D20	(1)	2	3	3	3	3	2	2	3	3	2	4	3	3	3	4	3
	(2)	2	3	3	2	3	1	2	1	2	2	2	2	2	1	3	2

A = Flexible movement ≠
 B = Direct movement ≠
 C = Strong movement ≠
 D = Light movement ≠
 E = Sudden movement ≠
 F = Sustained movement ≠

G = Use of levels
 H = Use of direction.
 I = Ability to obtain full stretch.
 J = Use of different body parts.
 K = Ability to 'freeze' a movement.
 L = Sensitivity to music.
 M = Ability to lead another.
 N = Ability to follow another.
 O = Contribution to planning a group dance.
 P = Sensitivity to others in a group dance.

Movement AssessmentExperimental Group

<u>Name</u>	<u>Test</u>	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
C1	(1)	3	3	3	4	3	3	3	2	3	4	3	2	3	4	2	2	
	(2)	3	3	4	3	3	4	3	3	3	1	3	4	4	4	4	2	
C2	(1)	2	1	3	3	3	2	1	1	3	2	2	2	2	2	2	2	
	(2)	2	2	4	3	4	3	4	3	5	3	3	4	3	4	4	4	
C3	(1)	2	1	2	3	3	2	1	1	2	2	2	2	2	2	2	2	
	(2)	3	4	5	2	4	3	3	4	4	3	3	4	3	4	4	4	
C4	(1)	1	1	2	2	2	1	1	1	1	1	1	1	2	3	1	1	
	(2)	Did not take part											3	3	0	0	0	1
C5	(1)	1	1	1	1	2	2	1	1	1	2	1	1	1	1	2	1	
	(2)	2	1	1	2	3	2	1	1	1	2	5	4	1	2	1	2	
C6	(1)	1	1	1	2	1	2	1	2	1	1	1	1	1	2	2	1	
	(2)	2	3	3	4	3	3	2	2	3	2	3	2	3	3	3	3	
C7	(1)	2	1	1	2	2	2	1	2	1	1	2	2	2	2	1	3	
	(2)	2	4	3	3	4	4	2	2	3	2	2	3	4	4	3	2	
C8	(1)	2	2	2	2	2	2	2	3	3	3	2	2	3	3	1	3	
	(2)	3	4	2	4	5	3	3	4	3	3	5	5	2	2	2	2	
C9	(1)	2	2	2	3	2	3	1	2	1	1	2	2	2	2	5	2	
	(2)	3	4	4	4	4	4	2	4	4	3	4	4	4	2	5	3	
C10	(1)	1	1	1	2	1	2	1	1	1	1	1	3	1	2	2	1	
	(2)	2	3	2	2	2	3	2	2	2	2	1	2	3	3	3	3	
C11	(1)	3	2	4	2	3	2	3	2	2	2	3	3	3	3	2	3	
	(2)	4	3	2	5	4	4	5	3	3	3	4	4	3	3	3	3	
C12	(1)	1	1	2	2	1	1	1	1	2	1	1	1	1	1	1	1	
	(2)	1	1	3	1	1	1	1	1	1	2	1	1	1	1	1	1	
C13	(1)	2	2	3	3	3	2	2	2	3	2	3	3	4	3	3	4	
	(2)	5	3	5	5	4	4	4	3	4	4	5	4	5	5	3	3	
C14	(1)	1	2	2	2	2	1	1	2	1	1	2	1	1	1	2	2	
	(2)	2	2	3	4	3	3	2	3	3	2	3	4	2	3	1	3	
C15	(1)	2	1	2	2	1	1	1	1	2	1	1	1	1	1	1	1	
	(2)	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1	
C16	(1)	2	1	1	1	1	1	1	2	1	2	1	1	1	1	2	1	
	(2)	3	2	2	3	3	3	2	2	2	3	2	2	2	2	4	3	

A = Flexible movement ≠
 B = Direct movement ≠
 C = Strong movement ≠
 D = Light movement ≠
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I = Ability to obtain full stretch.
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 K = Ability to 'freeze' a movement.
 L = Sensitivity to music.
 M = Ability to lead another
 N = Ability to follow another.
 O = Contribution to planning a
 group dance.
 P = Sensitivity to others in a
 group dance.

Example of statistics used in this sectionExperimental GroupAssessment for working together in movement compared with
Sociometric Status. Test 2

Spearman Rank Order Correlation Coefficient.

<u>Name</u>	<u>Sociometric Rank</u>	<u>Rank for working together in movement</u>	<u>D</u>	<u>D²</u>
C1	1.5	4	2.5	6.25
C2	5.5	2.5	3	9
C3	8	2.5	5.5	30.25
C4	3.5	16	12.5	156.25
C5	3.5	7.5	4	16
C6	1.5	9.5	8	64
C7	13.5	5.5	8	64
C8	15.5	13	2.5	6.25
C9	11	5.5	5.5	30.25
C10	8	11.5	3.5	12.25
C11	11	7.5	3.5	12.25
C12	5.5	15	9.5	90.25
C13	15.5	1	14.5	210.25
C14	11	11.5	.5	.25
C15	13.5	14	.5	.25
C16	8	9.5	1.5	2.25
				<hr/>
				720.00

Because of the large number of ties the formula

$$R_s = \frac{x^2 + y^2 - d^2}{2 \frac{x^2}{x} \frac{y^2}{y}} \quad \text{was employed}$$

$$= - .07$$

APPENDIX 6

Some Ideas and Music used in the dance programmes

(Note : Original spelling and punctuation have been retained).

A. "Sleeping Beauty"

This was a great favourite with the girls from School C.

There was a 'special' part for everyone and each individual personal movement pattern was catered for.

The dance was developed as follows.

Scene 1. The Christening

(a) Court Procession using "The grass is green" from B.B.C. recording of the sound track from "Elizabeth I." The girls enjoyed learning a simple step dance.

(b) The rocking dance using "Chanson de Matin" by Debussy
This was put in especially to cater for a girl who at this point would only dance if she could carry a baby doll. Some 'mirror' work was also developed.

(c) The Fairies from 'Pas de Six' from Tchaikovsky's "Sleeping Beauty."

(i) Fairy Candida - slow languid music

("I liked the lovely slow music. It was dreemy.")

(ii) Fairy Violente - fast in leaps and bounds.

("I liked it becoss there was stabbing in it.

I was punching out and wipping and I liked it very much")

(iii) Breadcrumb Fairy - dabbing movements.

(iv) Fairy of the Song Birds - flicks and flutters.

("It made me all trembly and all fussy")

(v) Lilac Fairy - Waltz rhythm.

("The one I liked best was the lilac fairy, sweeps and swings. I was dancing with a purple cloth and I was dancing with a smile").

(The domestic science teacher asked what music was being used because the class had told her, "Miss, you should hear Sue's music; it is gorgeous." This was the music of the Lilac Fairy."

(vi) The 'wicked fairy'.

("I liked best the bit where I jumped off the table and then stabbed my fingers at the baby")

Scene 2. In the garden, 16 years later

- (a) The dance of the princess and her friends using Cavalcade, from "Pageant of Dances", a follow-the-leader dance with coloured material linking each child to another, followed by a group dance using coloured materials to Tchaikovsky's "Sleeping Beauty Waltz."
- (b) The wicked fairy (as an old woman), pricking of finger etc. using percussion accompaniment.
- (c) The forest grows up - to Greig's 'Morning Mood' from Peer Gynt.
- (d) Entry of the Prince to Greig's "Norwegian Wedding" dance.
- (e) Court processional dance repeated.

B. The storm at Sea

based on verses from psalm 107.

The theme music from the Onedin line followed by The Storm from Four Sea Interludes from Peter Grimes by Britten.

This theme was taken with two groups and was received with different responses. In one group (that involved in the pilot scheme) several girls were afraid of the music. One wrote, "I did not like the storm music because it flighen me. It made me hide my head." Another said, "I did not like that fast, noysy music because it made me all funny inside. My feet was too many". The girls from School B loved it and danced this theme in a school assembly. 'L' wrote, "I liked getting thrown about. The wind blows hard and the waves crash about you and you get thrown about. The foam splashes out like a feather. The ship was all smashed up and we was swimming and we all helped the others to a safe place. It was very exciting."

C. 'Winter' based on a number of poems including "London Snow" by Robert Bridges.

1. Snow falling - Debussy's "The Snow is falling" from "Childrens Corner".

One girl wrote, "It started smooth and slowly, that was the snow flakes. You make your hands all curvey".

"The snow movements are slow and flowing and sometimes you twirl. The teacher had a jumper with a twirling pattern on it."

2. The frost - Vivaldi's "Four Seasons - Winter."

"I liked the sharp movements like the frost".

"It was like being very very cold. You move with hands and legs and feet and fingers all stif."

3. "Children Playing in the Snow" - "Children's Overture."
by Quilter
4. "The Skaters" - The waltz from "Les Patineurs" by Meerbaum.

"The skating dance was very jolly. We started off with an expert, then some more came and fell down, then we all joined in and skated with a step hop hop and we all made lovely patterns. Afterwards I made a picture of the patterns."

D. "The children and the ghosts"

1. Children playing - "Les Tulleries" from Moursorsky's "Pictures in an Exhibition."
2. Ghosts - "Saturn" from Holt's "Planet Suite."

This was particularly popular with children who still needed to 'hide' beneath material.

E. "The Creation Story" with the oldest girls.

1. 'Nothingness' - Cymbals.
2. Light - "Morning Mood" - Greig's "Peer Gynt."
3. Rocks and Land - "Architecture" from "Pageant of Dances."
4. Water and Sea - "Poisson d'or" - Debussy.
5. Plants - Percussion (Scrapers and shakers).
6. Animals - From Elgar's "Wand of Youth."
7. People - "The sons of the morning" from Vaughan Williams "Job."

This dance too was repeated for a school assembly and the girls were able to blend it into a satisfying whole.

Other Shorter Themes

1. Flexible movement using small pieces of material.

"The Swan" from Saint-Saens' "Carnival of the Animals."

The girls enjoyed following the rise and fall of the music. One girl wrote of this, "The music makes you concentrate and makes me very happy. It is like you have met this lovely boy and just fallen in love."

Another wrote, "The music was very sweet and like floating on air. I went up and down and round and round as light like a feather. It make you forget everything nasty." "We was doin the scarf dance and we made our dance have a funny ending. Janice's scarf landed on my arm and mine went across her neck. Me and Janice felt very happy because we enjoy ourselves."

2. Movement involving two or more dancers with a large piece of material - theme music from "Exodus."
3. Using a small piece of material and working with a partner - The bullfight - "Passadoble music."
4. "The Shadow" based on a poem from "Poetry for Creative Movement"

by **E.M. Stokes,**

which then developed into "Echoes" using Tokyo Melody.

This was a demanding dance requiring an exact but weaker copy by the 'echo' of the leader's movements. This was very popular with the girls from School C. They further developed this using percussion instruments and showed disciplined movement.

5. Various hand dances to Ravi Shankar's "Improvisations" and to Japanese music.

Hand dancing was very popular, particular with the less skilled girls. "Me and my sisto dance in the yard we suntimes do the hand dances we learnd at school it is the best dance I like".

6. "Fountains" Developed from rising and falling dance.

Collected pictures of fountains and waterfalls (The girls actually confused the two words). With one group, this developed into a 'ribbon' dance. "I like the ribbon dans be cos we had to mad a waterfall and we had 5 people and be twe we had six ribbons and we made a pattern in the sky. There were red blue green yellow orange ribbons and they were made of silk and they made rainbow patterns. When the dans finish we made a lovly still picture. It was good. You bend down and up and the ribbon did loop and twirl and you fly in the room.

7. "The Toyshop" using the overture from "La Boutique Fantasque" by **Rossini - Respighi**.

The 'story' involved an apprentice, his master and some toys which came to life. The girls used percussion instruments to accompany their movement as well as the music - thus the 'toy soldiers', had drums, a 'toy dog' had bells, two chinese dancers moved with finger cymbals and so on.

"We was pretendin to be toys in a shop and boy started to dust the toys and we all started to move around the shop too and the boy didnt no what to do and the dolls fell down. The manager was angry and he ran after the boy. It was good. I was a Spanish doll and I spin round with my tambourine and I was all lite and happy."

Again and again the girls used the words, "I felt happy".
 "I was happy", "I felt good".

An outline of one lesson as an example of the programme used

Lesson 2. School B.

Introduction

1. "Material dance" : music "The Swan". Aim : to reduce self confidence and to develop flowing movements.
 Instructions :- "Take a good starting position - show where the first movement will go - look at the material - be still At the end of the dance come smoothly to an end and hold still." This was a repeat of movement done in first lesson.
2. Indian hand dances. : music : from Ravi Shanker.
 Aim: to increase concentration and to increase awareness of parts of the body. Instructions :- "Drape the material round your head or shoulders. Sit on your side and hold yourself tall. Show me your hands : let your hands go towards one another, away, round; let the two hands dance together."

Movement qualities

1. Sudden movement. Using 'skull' or 'chinese block'.
 Instructions : "Give yourself a surprise : tummy, shoulder, chin"
2. Sustained movement. Using gong. Instructions : "Watch your hand, let it go on moving as long as you can hear any sound from the gong. Go on with long, smooth movements which go high and low and turn you round."

3. In threes : A 'Jerky' dance. Music : Popcorn.

Aim : To develop awareness of others in dance.

Instructions : "Listen to the music. Make sharp movements with hands, elbows, knees. When the music stops you 'freeze', make a spiky shape do the three of you make a good picture ? Let one of you end high, another low and one in the middle touch one another when you stop"

Final dance Halloween

Show twisted wood. Read "The Witch" from Stokes
 "Word Pictures for Creative Dance." Play "the gnomes"
 from "Pictures in an Exhibition" by Moursorsky - Ravel.
 Discuss all these. Hands dance to music showing 'winding',
 'wringing' movements with moments of absolute stillness.
 In threes or fours girls work out a dance to this music
 "making pictures" in the moments of stillness.

On return to the classroom some girls wrote about the dance, others painted pictures, one made a twisted model from a wire coathanger (with help from the class teacher) and some recorded their impressions on tape.

"The witch one was good. I like the music. It was exciting. The wood looked like an elephant in pain. I got myself in a screw and kept coming into a spiky shape. I didn't always like the stopping bits. I felt like going on and on."