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ATTITUDES OF COACHES AND EDUCABLE MENTAL RETARDATES TOWARD THE RETARDATES' PARTICIPATION IN INTERSCHOLASTIC ATHLETIC COMPETITION.

The Ohio State University, Ph.D., 1970 
Education, special

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Finally, a sincere debt of gratitude is necessary to my wife whose perseverance in assisting me to achieve my goal has been unwavering.
VITA

August 30, 1942.... Born - Pittsburgh, Pennsylvania

1965.............. B.S.Ed., California State College, California, Pennsylvania

1966.............. M.Ed., Pennsylvania State University, University Park, Pennsylvania

1966-1967.......... Teacher of the mentally retarded, Columbus, Ohio

1967-1968.......... Graduate Fellow, Ohio State University

1968-1969.......... Teacher of the mentally retarded, Columbus, Ohio

1969.............. Assistant Professor, Duquesne University, Pittsburgh, Pennsylvania

FIELDS OF STUDY

Major Field: Education of Exceptional Children

Studies in Mental Retardation. Professor Viola Cassidy

Studies in Educational Administration. Professor Donald Anderson

Studies in Educational Psychology. Professor Philip Clark
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CHAPTER I
INTRODUCTION

Does one have to be a special type of individual to participate in varsity or junior varsity interscholastic high school athletics? Does such a person have to be motorially, physically, and mentally "normal"? Or, could one who has been identified as educable mentally retarded successfully take part in the high school varsity or junior varsity interscholastic program? To investigate this last question is the purpose of this study.

Interest in a study of this nature stemmed from the writer's experiences as an assistant wrestling coach for one of the Columbus Public High Schools. During three years of coaching experience in the Columbus Public School System, hereinafter to be designated as the school system, this writer had come into contact with only three athletes who had been identified as educable mental retardates. This fact led the writer to ask himself the question, "Why are there not more educable mentally retarded students taking an active part and interest in the interscholastic
Better screening and identification procedures have increased the number of educable mentally retarded individuals being served by the public schools. As these identifying procedures become refined, even more educable mentally retarded individuals will be placed in the public schools. If we are to make these students an integral part of the school system, the problem posed in the question asked in the previous paragraph becomes increasingly more important year after year.

In order to try to determine whether or not this question was pertinent to this school system, the writer examined the literature. After an extensive search through past and current literature in the areas of mental retardation, physical education and motor skills, the writer was unable to uncover any material which dealt exclusively with the topic of non-institutionalized mentally retarded students and their integration into conventional interscholastic athletic competition. The dearth of literature led the writer to one of several conclusions.

1. The educable mentally retarded do not care for high school interscholastic competition.
2. If the educable mentally retarded do take an active interest and participate in interscholastic athletic competition with normal individuals, this fact has not been reported in the literature.

3. The educable mentally retarded are afraid to attempt interscholastic athletic competition against individuals of average intelligence.

4. The educable mentally retarded are not physically and/or mentally able to successfully take part in interscholastic athletics.

5. The coaches do not encourage the educable mentally retarded to take an active interest in interscholastic athletics.

6. The coaches are prejudiced against the educable mentally retarded population.

7. The coaches do not realize that some educable mentally retarded individuals are capable of participating in successfully in interscholastic athletics.

Of the listed conclusions, the investigator only studied the attitudes of the coaches and educable mental retardates toward participation in interscholastic athletic competition.
The Problem

The purpose of this study was to investigate how the male high school students of the school system who had been designated as educable mentally retarded identified with varsity and junior varsity interscholastic athletics within their own high schools. The educable mentally retarded student's perceptions of his own mental and physical capabilities as related to varsity and junior varsity interscholastic athletics were also studied. Finally, the reactions of the high school coaches within the school system were analyzed to determine if they accepted the participation of the educable mentally retarded in varsity and junior varsity interscholastic athletic competition.

The specific problems studied fell into three categories:

1. What was the emotional reaction of the educable mentally retarded toward interscholastic athletic competition.

2. What do the educable mentally retarded consider to be their own physical and mental abilities in relation to varsity or junior varsity interscholastic athletic competition.
3. How do the coaches perceive the educable mentally retarded student's ability, both mental and physical, in relation to interscholastic competition.

Statement of Hypotheses and Corollaries

The hypotheses and corollaries tested in the investigation were developed from the questions which were raised. The investigator then tested the following hypotheses and corollaries regarding the attitudes of coaches and educable mentally retarded students in relation to interscholastic athletic competition by the mentally retarded:

**Hypothesis I**
Educable mentally retarded students will express a strong interest in athletics of any nature.

**Hypothesis II**
The educable mentally retarded will express a strong desire to belong to either a varsity or junior varsity interscholastic athletic team.

**Corollary 1**
The educable mentally retarded will more often choose either football or basketball as a desired sport in which to participate if given the opportunity.
Hypothesis III  The educable mentally retarded will indicate that the main reasons for their lack of involvement on either varsity or junior varsity interscholastic athletic teams will be a fear of failure, and the fear of ridicule by the normal members of the team.

Hypothesis IV  The educable mentally retarded will indicate that they have the physical and mental abilities needed to be athletes.

Hypothesis V  The varsity and junior varsity coaches will indicate that the educable mentally retarded student does not possess the needed mental and physical skills necessary to succeed in interscholastic athletic competition of any nature.

Corollary 1  The coaches will indicate that the educable mentally retarded student should not participate in either varsity or junior varsity interscholastic athletic competition.

Corollary 2  The coaches will indicate that the educable mentally retarded will perform below average on the majority of the interscholastic athletic teams on which they attempt to participate.

Assumptions

It was necessary to make the following assumptions to conduct this study.
1. It was assumed that a substantial number of educable students studied had the needed mental and physical abilities to participate in at least one or more of the interscholastic sports sanctioned by the school system.

2. It was assumed that the coaches of the school system were willing to permit the educable mentally retarded to participate in interscholastic athletic competition.

3. It was assumed that the questionnaires answered by both the coaches and educable mentally retarded students reflected their true feelings concerning the educable mentally retarded and their participation in interscholastic athletic competition.

Limitations

This study was limited to investigating the responses of coaches and educable mentally retarded students by means of a questionnaire, to obtain facts as to the retarded students' participation in high school interscholastic athletic competition.

This study was limited to the Columbus Public School System and the results obtained from it cannot be
generalized to any other school system within the State of Ohio, or to any other school system outside of the State. In the school system, only male students in classes for the educable mentally retarded were used. These male students came from special classes for the educable mentally retarded in grades ten, eleven, and twelve. The IQ's of these individuals ranged from fifty to 79. Therefore, the results obtained can pertain only to the above mentioned group of students. Too, only the coaching staffs of the Columbus senior high schools were used. Accordingly, the results obtained from the coaches can apply only to the Columbus high schools. Females in the special classes for educable mentally retarded students were not used because there are no interscholastic sports for females in this school system.

Finally, data collection was limited to the two above mentioned groups. These two groups were surveyed by means of questionnaires that were developed by the investigator. No effort was made to communicate verbally with either of the groups. Data was not collected from other members of the school system who had contact with the educable mentally retarded students, such as special education teachers in the high schools, or the guidance
counselors within the high schools. Too, the parents of the retarded students were not contacted. Therefore, conclusions could be drawn only from the information provided by the aforementioned two groups.

Definition of Terms

For the purpose of this study the following definitions applied:

1. Adapted Physical Education: "The aim of adapted physical education is to provide through competent leadership, a diversified program of developmental activities, games, sports, and rhythm suited to the interests, capacities, and limitations of students with disabilities who may not safely or successfully engage in unrestricted participation in the vigorous activities of the general physical education program." (Daniels & Davies, 1965, p. 326.

2. Athletic Competition: Defined by this writer as participation on an interscholastic athletic team which is comprised of mainly students attending regular school and having normal intelligence.
3. **Interscholastic Athletic Program**: Defined by this writer as all of the competitive sports which are sanctioned by the school system and consists of competition between schools. These sports are: baseball, basketball, cross country, football, golf, swimming, tennis, track, and wrestling.

4. **Coach**: Defined by this writer as any individual who takes an active part in the training of a student to prepare him to participate on any of the athletic teams previously listed.

5. **General Motor Ability**: "The immediate capacity of an individual to perform in many varied stunts or athletic events..." (Mathews, 1964, p. 123).

6. **Junior Varsity Athletics**: Defined by this writer to mean the second team in a sport, or the second best participant in an individual type of interscholastic athletic competition.

7. **Mental Retardation**: Defined by Heber as "subaverage general intellectual functioning..."
which originates during the developmental period and is associated with impairment in adaptive behavior. For a finer delineation:

1. Subaverage general intellectual functioning — individual intelligence score between 50 and 79.

2. Developmental period — chronological age up to approximately sixteen.


8. Varsity Athletics: Defined by this writer as the first team of a sport, or the best participant in an individual type of interscholastic athletic competition.

**Importance of the Study**

Recreation is an important attribute needed for the total life adjustment of an individual. However, according to Greenwood, "We've been short-changing our children by not teaching them how to play. I'm not referring to the recreational activities of childhood. I mean sports—the lifetime sports—that we can play and
enjoy as long as we live" (Greenwood, 1968, p. 22). This statement has a greater relevancy to the mentally retarded population than it does to the population of normal children. It is more relevant to the mentally retarded because the normal child will develop recreational interests through association with other children; this learning through association will not be as potent a factor with the mentally retarded. Therefore, the mentally retarded individual's recreational interests must be discovered and carefully nurtured in order for them to develop into lifelong recreational activities.

The Lynds (1937), in their sociological study of Middletown, indicated that the athletes in the high school had the highest social position attainable. Accordingly, they were the most sought after students, and they had the largest circle of friends. Johnson (1950) indicated that the mentally retarded students were rejected by the regular students because of their anti-social behavior rather than their low intelligence. Perhaps, if more mentally retarded students could be integrated into their high school athletic programs, the retarded students' social behavior could be adequately modified through a feeling of belonging and loyalty to the school to meet the "normal" standards of
This investigator will endeavor to discover why the educable mentally retarded do not participate more fully in athletic competition. Such information, if obtained, could permit the special education teachers, the physical education teachers, and the coaches to try to eliminate some of the factors reported by the educable mentally retarded and the coaches. This might allow the retarded to more fully participate in and enjoy interscholastic athletic competition.

At this point, little is known about what interscholastic sport(s) the educable mentally retarded are most interested in and which interscholastic sport(s) they feel they could best succeed. The investigator, through this study, will afford the educable mentally retarded students in the school system the opportunity to express what interscholastic sport(s) interest them. They will also be able to express in which interscholastic sport(s) they feel they could meet success. Perhaps, the results of this study will provide educators with the basic information needed to more fully integrate the educable retarded individual into the total scheme of the high school environment through the educable mentally retarded's social acceptance.
participation in interscholastic athletics.

How do the coaches feel about the educable mentally retarded in relation to athletic competition? This investigator will attempt to shed some light on this question. It may well be that the coaches have gross misconceptions about the educable mentally retarded's attitudes and interests concerning interscholastic athletic competition. If this proves to be the case, then this would indicate that there is a lack in the educational preparation of the coaches which should be rectified so that all students have the opportunity to fully enjoy and take an active part in the interscholastic athletic teams supported by the school system.

Through an investigation of the attitudes of the coaches and the educable mentally retarded concerning participation in athletic competition by the educable mentally retarded, the answer to the investigator's question: "Why are there not more educable mentally retarded students taking an active part and interest in the athletic program which has been developed by the school system?" might be answered.
Organization of the Study

The present chapter includes an introduction to the investigation, a number of statements indicating the importance of the problem, definition of the terms, assumptions, limitations and hypotheses of the study.

The second chapter contains a comprehensive review of pertinent literature. The third chapter contains the procedures used in the study, the populations and scope of the study, the instrumentation and experimental design utilized and organizational procedures.

The fourth chapter contains the statistical analysis and interpretation of the data. The last chapter presents a summary of the information obtained from this study. Conclusions are taken from the data, implications are presented and recommendations are given for future investigation in the area of the study.
CHAPTER II
THE LITERATURE

Introduction

It should be stated at the outset of the review of the literature that the writer was not able to find any material that dealt exclusively, or even in part, with the non-institutionalized educable mentally retarded and their participation in either varsity or junior varsity interscholastic athletics. Previous writers concerned about physical education and recreational facilities for the mentally retarded have come to the same conclusions. "The writer could find no research studies concerned with extra-curricular activities participation by the mentally retarded..." (Green, 1962, p. 211). Another investigator states, "In going through the literature one is amazed at the dearth of reported research dealing with physical education for the educable mentally handicapped in the public schools" (Beck, 1956, p. 117). Finally, John Thorne states, "The lack of research in the area of recreation and physical education is a real tragedy for the mentally
retarded because so many important questions remain unanswered" (Thorne, 1966, p. 25). Because of this void in written material, the review of literature had to be developed through channels that were related to athletic participation and the mentally retarded.

The channels, previously alluded to, fall into three categories. Articles were found concerned with the general motor abilities of the educable mentally retarded in comparison with normal individuals. Too, many articles were found that dealt with intelligence and its effect upon general motor abilities. Finally, the writer found several articles which discussed adapted physical education for the mentally retarded. Therefore, this review of the literature will concern itself mainly with the concepts of (1) the general motor abilities of the mentally retarded, (2) how intellectual ability affects general motor ability, and (3) what value, if any, is the adapted physical education class for the educable mentally retarded student.

"Mentally retarded children are truly 'more like normal children than they are unlike them.' This is especially true when they are participating in physical education. Practically all of them enjoy playing; most are eager for any type of physical education" (Carroll &
Abishier, 1966, p. 33). According to Baxter (1963), data on the responses of educable mentally retarded children to competitive conditions such as sports (varsity and junior varsity athletics) is noticeably lacking in the literature. Although, there is much data on the normal child and his feelings and attitudes towards athletics. There have been, however, references toward the idea of the mentally retarded taking part in competitive athletics. This has been in the area of recreation and adapted physical education.

"Recreation for the mentally retarded is an area in which a major revolution is taking place. Too often, recreation and physical education have been overlooked for the educable mentally retarded..." (Sengstock & Stein, 1967, p. 491).

Play is an absolute essential for the development of retarded children. They need frequent thrills of success in order to counteract the many frustrations they are likely to be subjected to. It is in play that they work up a will to live, a will to do things, a will to grow. Furthermore, it is mostly in play activities that they can obtain the beneficial stimulation they require for their development; it is mostly in play that they learn the skills that lie at the root of social living. ...Failure to provide play for the mentally retarded can only lead to deterioration. ...Play is the most valuable part of their experience; it is the starting
point of their personality development. (Benoit, 1955, pp. 44-45).

Cowell (1960) concurs with Benoit's statement and adds that the socially well-adjusted person is the one who tends to take an interest in and is successful at athletics, physical fitness, and physical education activities. Therefore, in the words of the late President John F. Kennedy, "It is of great importance that we take immediate steps to ensure that every American child be given the opportunity to make and keep himself physically fit.... We must invigorate our curricula and give high priority to a crusade for excellence in health and fitness" (Nunley, 1965, p. 946). In conclusion, a statement made by the National Association of Secondary School Principals reveals the feelings of this investigator and of the numerous writers examined to develop this review. "We believe in athletics as an important part of the school physical education program. We believe that the experience of playing athletic games should be part of the education of all children and youth who attend school in the United States" (George, 1960, p. 108).

It should be noted that there are several considerations that must be taken into account when
interpreting the following data against the public school population used by this investigator. These considerations can be categorized into various areas:

1. Studies done by Fait (1967), Malpass (1960), Oliver (1958) and Stein (1966) compared institutionalized and non-institutionalized mentally retarded subjects. Their findings, must be viewed cautiously since retarded subjects in the institutions usually have lower intelligence quotients than the non-institutionalized subjects.

2. Research by Auxter (1966), Baxter (1963) and Reger (1968) compared organic and non-organic retarded individuals. These two populations present different intellectual, social, and behavioral characteristics. Thus, the results obtained by these investigators must be interpreted according to their populations.

3. Two studies, those by Brace (1948) and Nunley (1965), compared the motor characteristics of educable mentally retarded and trainable mentally retarded. The difference in IQ scores between the subjects indicate that
these results should be viewed carefully since the educable groups had superior neural development which affected their rates of performance.

4. Beaber (1960), Berkson (1961), Corder (1966), Howe (1959), Jones & Benton (1968), Sloan (1951) and Stein (1962) did their research by comparing mental retardates against normal individuals on various physical skills. Since the neural development of the retardate is inferior to that of a normal individual of the same mental age, the results of their research should be used with reservation.

5. Studies done by Beck (1956), Francis & Rarick (1959), Gearheart (1963) and Stein (1963) used elementary school educable mentally retarded students in their research. Since there is a large difference between the elementary and secondary educable mentally retarded student physically, socially, emotionally, and mentally, some of their findings concerning the general motor abilities of the mentally retarded and the relationship between
intelligence and general motor ability are not applicable to the population used in this study.

6. The conclusions drawn by Green (1962) concerning extra-curricular activities by the mentally retarded and Kahn & Burdett (1967) regarding the retardates' general motor ability hold the most validity for this study because they used educable mentally retarded students from public high schools.

In conclusion, it should be stated that when interpreting the following research, the IQ range, the type of mental retardate, the environmental setting, and the comparison group must be taken into account. In addition, there is a natural attrition rate among the educable mentally retarded who start in the elementary school and eventually graduate from the senior high school. Therefore, those educable mentally retarded individuals who finish high school are usually the more capable intellectually, socially, emotionally, and physically than those retardates who leave school at any earlier date.
General Motor Abilities of the Mentally Retarded

Cratty (1967) has indicated through research that an evaluation of the motor abilities of mentally retarded children can be accomplished with reliability. By definition, general motor ability refers to "The immediate capacity of an individual to perform in many varied stunts or athletic events" (Mathews, 1964, p. 123). Generally, the term general motor ability is thought to include dynamic strength, static strength, flexibility, speed, and balance and coordination.

Francis & Rarick (1959) present data which indicates that public school educable mentally retarded boys in special classes are well behind published standards of motor performance of normal children. They indicate that the educable mentally retarded's motor development and organization lags from one to four years behind that of the normal child. However, they also denote that the mentally retarded's motor abilities are organized and developed in the same way as the normal child. This, they state, would suggest that the potential for higher levels of motor achievement is possible for the mentally retarded child.
Ingram (1960) classifies the physical traits of the mentally retarded into various age groups as follows:

**5, 6, 7 years of age:**
Walking, running, and jumping are carried on readily by the majority, ability to skip is slowly acquired. Play with rolling and bouncing ball is engaged in. Throwing with an aim and catching a ball are enjoyed later for short periods under supervision. Control and coordination of the fine muscles of the wrists, hands, and fingers are slow to develop (Ingram, 1960, p. 48).

**8, 9, 10 years of age:**
Muscular control of limbs is well developed. Walking, skipping, running and jumping are done with ease.... Muscular control of hands tested in baseball throw and catch for distance, beanbag toss for accuracy, and standing broad jump are slightly inferior to the norm for children of average ability. Muscular control of fine muscles of hands and arms is fairly well developed (Ingram, 1960, p. 50).

**11, 12 years of age:**
General motor control is good except in extreme cases of mental defect or physical disability. Eye and hand coordination tends to increase, manual skills are carried out with less inaccuracy and bundling (Ingram, 1960, p. 52).

**13, 14, 15, 16 years of age:**
Motor ability and eye-hand coordination improve with a resulting increase in kind and number of hand skills and in ability for sustained effort and interest to do work well (Ingram, 1960, p. 54).

According to Nunley (1965), the level of general motor ability demonstrated by an individual will be influenced by a combination of psychological, intellectual,
and social factors.

We know that children are particularly sensitive to a climate of achievement and success because of their needs for recognition and status. In this respect, educationally sub-normal children are no different from normal children; they have the same fundamental drives and motives; the same desire for achievement and success. Academically, however, they have failed consistently. According to Johnson (1950) they tend to be neglected in play by normal children and they are often deficient in physical skills and motor coordination, probably because of lack of opportunity to take part (Oliver, 1958, p. 155).

According to Corder (1966), who compared educable mentally retarded and normal children, the motor performance of the mentally retarded usually lags from two to four years behind the normal child even though the mentally retarded child approaches the normal child in physical development. In dealing with the mentally retarded, Troth (1967) states that one often finds that the body balance, motor coordination, and visual perception are not as fully developed as they seem to be among normal children. However, Auxter (1966) poses a hypothesis in relation to the statement made by Troth. He states "...it might be that the retarded children lack, to a greater degree than typical children, the ability to work past the initial stages of
discomfort or fatigue which prevents them from more nearly approaching their physiological limits" (Auxter, 1966, p. 10). If Auxter's statement is valid, then perhaps the retarded's general motor ability could be greatly increased through a systematic program directed at increasing their physical stamina.

With this introduction to the general motor abilities of the educable mentally retarded, a review of the studies dealing with the areas subsumed under the topic of general motor abilities will be discussed.

**Static Strength.** This item is usually measured in terms of grip strength. In a study done by Francis & Rarick (1960) comparing normal and mentally retarded students, "the data on static dynamometric strength of normal and mentally retarded children clearly showed that the mentally retarded children included in this study were markedly inferior in strength to normal children at every age level" (Francis & Rarick, 1969, p. 21). They found that in tests of strength the mentally retarded are from one to three years behind the standards for normal children.

**Dynamic Strength.** In a study done by Francis & Rarick (1960) the vertical jump and the standing broad jump
were used to measure dynamic strength. They found that at age fourteen, the mentally retarded child failed to reach the standard of the normal eight year old child of the same sex in the stand-broad jump. They found that in the vertical jump, a measure of explosive muscular power, the mentally retarded is as much as four years behind in development when compared to the normal child.

**Flexibility.** In terms of flexibility or agility, Auxter (1966) found that there were no significant differences among differentially diagnosed mentally retarded boys on the ankle flexion-extension, trunk flexion, and back extension measures of flexibility. This was also true of intellectually typical boys and mentally retarded boys on measures of trunk extension and trunk flexion.

**Speed.** Malpass (1963), after comparing normal and retarded students, indicated that the superiority of normal children in running speed was so great that at no age level does the mean performance of mentally retarded children approximate the mean performance of normal children.

**Balance and Coordination.** Malpass states that "In general, low grade defectives, when compared with normals, demonstrate greater difficulty in placing,
turning, and positioning movements, in control of continuous movements, and in muscular steadiness. These characteristics, too, vary as a function of the complexity of the task required" (Malpass, 1963, p. 604).

As a summary, Stein & Pangle (1966) offer the following guidelines in relation to the basic constructs of the psychomotor functions as they relate to the mentally retarded:

1. For a given age and sex, normal children are superior to the mentally retarded on most measures of motor proficiency.

2. In spite of underachievement with respect to motor function, the mentally retarded are much nearer the norm physically than mentally.

3. Physical proficiency can be improved in the retarded as a result of planned and systematic programs of physical education.

4. There are real differences to be expected in working with institutionalized retarded vs. those enrolled in public school special classes.

5. The mentally retarded achieve better in activities characterized by simple rather
than complex neuromuscular skills.

6. Achievement in the area of physical fitness development apparently does not result in corresponding differential gains with regard to sociometric status.

7. Significant IQ gains have been achieved by EMR boys participating in programs of planned and progressive physical education activities.

8. Motor proficiency and intelligence are more highly correlated in the retarded than in normal children (Stein & Pangle, 1966, pp. 37-38).

In conclusion it might be stated that the educable mentally retarded are below normal in general motor abilities as compared to normal children. Also, they have deficiencies when compared to normal children. Francis & Rarick (1960) summarize this part of the review of the literature with the following statement:

The motor retardation of the educable retarded child is perhaps greater than had been previously supposed; however, the evidence seems to indicate that the motor abilities of these children are organized in much the same way as in normal children and that the developmental curves, although at lower levels than for normal children. This suggests that these children may profit
by the same kind of motor experiences as normal children, although much more patience is required in setting the stage for learning (Francis & Rarick, 1960, p. 37).

Nunley concurs with Francis & Rarick with her statement, "Activities automatically learned by the average child must often be taught to the mentally retarded child" (Nunley, 1965, p. 947).

Kirk agrees with the previous summation when he states:

In some cases, however, retarded children have achieved above average in sports like baseball and boxing. Again, there is a great deal of overlapping in ability with normal children, some mentally retarded being far above with average and gifted children in these areas: but most of them are below normal children in motor proficiency (Kirk, 1962, p. 128).

Finally, Stein (1962) after testing the physical fitness of educable mentally retarded and normal individuals came to the following conclusions. The mentally retarded were below the national norms on fifty per cent of the tests administered. However, what was more important was the fact that on fifty per cent of the tests, the educable mentally retarded were equal to or superior to the national norms which were established by results gained on normal children. This would seem to indicate that there are many educable mentally retarded individuals who
possess average or above average general motor abilities which would permit them to participate actively in interscholastic athletic competition.

The Effect of Intelligence on General Motor Ability

Cantor (1960) has indicated that the performance of the mentally retarded individual was no different when he competed with normal individuals or other mentally retarded individuals. However, the mentally retarded's competitive efforts varied in length according to the task he was performing.

Norman Ellis in his Handbook of Mental Deficiency (1963) has repostulated his theory that the mentally retarded do not have a fully matured neural system. Because of their underdeveloped neural pathways, the retardate cannot hold a stimulus trace long enough for it to make an impression on the neural system.

Berkson has done experiments on the responsiveness of the mentally retarded and normal individuals using Ellis' theory as a guideline. "These experiments provided no evidence that normals and defectives differ in the speed of elicitation of reflexes, but there is some indication, that once elicited, a response may remain active for a longer period in normals than in defectives" (Berkson,
Employing a speed of perception measure and reaction time tasks of varying complexity, he /Berkson/ has concluded that there is not evidence that IQ is related to perceptual or judgmental speed when simple stimuli are used but that the slowness of defectives is involved in the initiation or performance of responses (Berkson, 1961, p. 280).

Berkson (1961) concludes that the speed of responses elicited by the mentally retarded has been consistently slower than those of normal individuals. A study done by Dingman & Silverstein (1964) has supported the conclusions drawn by Berkson in his earlier studies.

In conclusion, Jones & Benton (1968) conducted a study that compared the differences in reaction times to auditory and visual stimuli between mentally retarded and normal individuals. They confirmed the earlier findings that the reaction times of the educable mentally retarded tend to be longer than the reaction times of individuals of normal intelligence. This study and the previous studies (Canton, 1960; Kahn & Burdett, 1967; Ellis, 1963; Berkson, 1961; Dingman & Silverstein, 1964) tend to support Ellis' theory that the mentally retarded cannot retain a stimulus as long as the normal individual. Thus, it may not be intelligence that affects general motor abilities as much as it may be the time the organism can keep the elicited
response active.

Studies concerning the intelligence quotient or IQ and its relationship to general motor ability indicate that the mentally retarded child has the capacity to learn simple motor skills as easily as the normal child if he is given the opportunity. "Data would suggest that either the slow learner [the mentally retarded] has not had as much experience with this kind of skill [athletics] as the normal child or that the learning associated with this skill are too involved for him to readily master" (Francis & Rarick, 1959, pp. 804-805). It should be noted that Francis & Rarick (1959) did not rule out the possibility of the educable mentally retarded being able to learn the more involved skills. If the involved skills are taught to the retarded in small, sequential steps, then, according to Meyers & Dingman (1965), the educable mentally retarded has the ability to master most of the complex tasks presented to him.

Malpass (1960) reported on early studies done by Doll & Sloan and Tredgold. "Doll (1946) and Tredgold (1947) have claimed that intelligence and motor proficiency are related" (Malpass, 1960, p. 1012). Malpass then went on to compare the motor proficiency of mentally retarded
individuals to normal individuals. He used the Oseritsky Motor Development Scale to obtain his results. His "findings strongly confirm claims by Tredgold, Doll and Sloan that motor proficiency is related to intellectual ability, at least in so far as comparisons of mildly retarded and normal children are concerned" (Malpass, 1960, p. 1014). Malpass' data strongly suggests that the motor proficiency of retarded individuals is more highly related to their intellectual ability than that of normal individuals.

In 1951, Sloan conducted an experiment that studied the relationship between motor proficiency and intelligence in mentally retarded and normal individuals. The results of his study indicated, within the limits of his experiment, that there was a positive relationship between motor proficiency and intelligence and that it appeared that mentally retarded individuals were significantly inferior to individuals of average intelligence in relation to motor proficiency. Howe (1959), in a similar study, came to the same conclusion. Black & Davis (1966) also found a positive relationship between mental ability and motor ability. However, they stated that their conclusions were drawn with caution.
Stein (1963) did a study which examined the motor functions and physical fitness of the mentally retarded. He concluded that there was a relationship between intelligence and motor ability. Furthermore, he stated that this relationship was more highly correlated in the mentally retarded person than in the normal person. Stein (1963) indicated that the mentally retarded, because of their low intellectual functioning, were unable to perform the more complex motor tasks. Reger, who did a more complicated study which was not directly involved with the mentally retarded came to the same conclusion as Stein (1963) by stating, "A positive relationship between motor proficiency and such characteristics as intelligence and peer popularity frequently has been reported" (Reger, 1963, p. 589).

"Clinicians and educators working with retarded children often note that mental impairment is accompanied by a decreased capacity for accurate movement" (Cratty, 1967, p. 188). Further,

...With a decrease in mental age one is likely to obtain high inter-correlations between IQ and motor ability. As might be expected, higher correlations are obtained between mental and motor measures when the latter involves a complex series of movements, rather than consisting of only a simple act involving force, power,
and/or endurance (Cratty, 1967, p. 190).

High correlations and relationships between intelligence and motor proficiency have been found. However, the majority of these high correlations and relationships are gained by experiments based on the more complex motor skills. They do state, though, that these high relationships and correlations do not hold true for the simple and less complicated motor skills.

Recently, Julian Stein has indicated that:

Recent trends in research show that the lack of intellectual ability resulting from arrested mental development need not affect the levels of physical fitness and motor development of the retarded. Two studies /Howe, 1959; Stein, 1965/ have shown that the mentally retarded respond and progress as much as normal boys and girls when given specialized training or instruction in a systematic and progressive physical education program (Stein, 1966, p. 25).

It is important to note that Stein's study (1966) and the two studies to which he referred were using educable mentally retarded students between the ages of twelve and fifteen. This would seem to indicate that it is almost never too late to start a program such as Stein suggested and obtain positive results with the mentally retarded.
Two individuals have proposed reasons why others have found a high relationship between intelligence and motor performance. Brace (1948) indicated it might be possible among the mentally retarded population, that intelligence had an effect upon the individual's level of participation in physical activities. However, he indicated that emotional reaction patterns, rather than the lack of intellectual ability, may have operated to produce the poor performance scores the mentally retarded obtained.

Another proposed reason that there have been relationships found between intelligence and general motor ability was presented by Dawson & Edwards (1965). They felt that "it is likely that inadequate estimates of physiological development and the confounding of motor skills with muscular development have contributed to the estimates of relations between motor strength and intelligence" (Dawson & Edwards, 1965, p. 226). In other words, poorly constructed tests of motor skills for the educable mentally retarded have led to higher relationships between the educable mentally retardate's IQ and general motor ability than actually might be. If these proposals are true, then the intelligence of an educable mentally retarded individual may not have as much bearing on his
general motor as previously thought.

Baxter (1963) indicates that the general motor abilities of the educable mentally retarded are likely to follow a pattern similar to that of normal individuals but at a lower level. The importance of her study was that it exhibited the similarity between the motor abilities of the educable mentally retarded and normal individuals. Baxter's study confirms an earlier investigation by Oliver (1958) which came to the same conclusions. His results state, "although these children are sub-normal mentally on all other measures they tend to regress towards the mean and in some cases even exceed it. This is true of physical characteristics; these children are certainly much nearer the norm physically than they are mentally" (Oliver, 1958, p. 156).

Studies pursued by Francis & Rarick (1959) and Beaber (1960) have provided results which indicate that when educable mentally retarded individuals were matched with normal individuals on the basis of mental age, there was no difference in the ability of the two groups to learn simple sensory-motor skills. Francis & Rarick went on to state that if the educable mentally retarded were given the opportunity, they could also learn some of the more
complex motor skills and become as proficient with them as are individuals of average intelligence.

Brace, who wrote the following in 1946, reflects the attitude, concerning the participation of educable mentally retarded individuals in varsity and junior varsity interscholastic athletics, of this investigator. "There are probably different types of motor learning, and that motor learning of 'sport type' skills is dependent to a considerable extent upon physical fitness expressed in terms of strength, speed, agility, and power" (Brace, 1946, p. 253). Although Brace mentions terms that describe general motor ability, and it was shown in the previous section that the educable mentally retarded lag from one to four years behind in their general motor abilities, the next section of this review, the section on adapted physical education, will show that this lag can be changed through a planned and systematic program of adapted physical education.

Therefore, in conclusion, "it can be stated that although the relationship between motor performance and IQ tended to be positive [for the mentally retarded], the intercorrelations were low and not greatly different from what one would expect to find with normal children"
Adapted Physical Education

"To develop a mind to its greatest capacity, every individual must also gain knowledge that will help improve body function to its greatest potential" (Stefanelli, 1965, p. 86). "A rather common supposition has been that mentally retarded children possess neither the neuromuscular skills nor sufficient motivational levels to perform well in motor activities" (Solomon & Pangle, 1967, p. 177). Rouse (1960) states why this supposition has been perpetuated. He indicates that physical education teachers have followed one of two policies with regard to the mentally retarded and physical education. One was to excuse the child from taking physical education which did nothing to fill the retarded child's needs. The second policy was to place the retarded child in a corrective physical education class which was primarily remedial in nature and which taught the child little that was new and helpful to develop his capabilities.

However, according to Solomon & Pangle (1967) there is a growing realization on the part of concerned special educators and physical educators that physical education is a curricular area in which the educable mentally
retarded child can succeed. The means to a successful physical education experience is through a program of adapted physical education.

Undoubtedly the progress that has been shown by mentally retarded subjects who have participated in planned programs of physical education has accrued through the interplay of a complex of factors: Achievement and success, improved confidence, better adjustment, a feeling of importance because of the interest and attention centered on them, increased competitive spirit, increased pride, improved physical condition, more perseverance and increased desire to perform well. With retarded children these factors have even greater significance than with the normal population (Stein, 1966, p. 27).

Therefore, according to Solomon & Pangle (1967), it appears that the educable retardate is capable of demonstrating marked improvement in levels of physical and general motor abilities, and these improvements have been brought about through systematically programmed adapted physical education classes.

What is meant by the term adapted physical education? According to Stein (1962) adapted physical education involves:

A diversified program of developmental activities, suited to the interests, capacities, and limitations of each individual within the class is needed. The activities are the media through which objectives are fulfilled. The mission is not to make champions or even talented
athletes, but to use the full impact and potential of physical education to enable each individual to become better prepared physically, mentally, emotionally, and socially to take his place in society as a self-sustaining adult who is capable of living the fullest, most satisfying, and worthwhile life possible within the limitations of his handicap (Stein, 1962, p. 31).

Daniels has outlined the objectives that should be strived for in a program of adapted physical education. They are:

1. Accomplish needed correction for conditions which are amenable to improvement.

2. Aid in the adjustment and/or resocialization of the individual when the disability is permanent.

3. Protect the condition from aggravation by acquainting the student with his limitations as well as his capacities and prescribing a program within his exercise tolerance.

4. Provide students with an opportunity for the development of organic power within the limits of the disability.

5. Provide students with an opportunity to develop skills in recreational sports within the limits of the disability.

6. Provide students with an opportunity for
normal social development through recreational sports.

7. Contribute to economic security through restoration of function and increased ability to meet the physical demands inherent in daily living (Daniels, 1946, p. 513).

As a result of an adapted physical education class, Stein (1962) reported that a group of educable mentally retarded students from Wakefield High School, Wakefield, Michigan, had developed some skills and abilities to high degrees of proficiency. All of the boys in the special adapted physical education program progressed tremendously in the direction of physical, emotional, psychological, and social self-sufficiency and self-realization. This study and others done by Kahn & Burdett (1967) and Solomon & Pangle (1967) indicate the potential of the adapted physical education class as an important contributor to the total growth, development, and welfare of the mentally retarded person.

Howe (1959) has stated that implications were drawn from his study which suggested that an adapted physical education class might be a necessary part of the mentally retarded's curriculum. According to Gearheart
(1963), the adapted physical education program was worthwhile in developing certain motor skills and that since it required no more time or expense than the regular physical education program, it held considerable promise for use by the educable mentally retarded.

An adapted physical education class for the educable mentally retarded could present to them, as Brace (1946) stated, the needed physical fitness and general motor abilities to learn 'sport type' skills and thus give the retarded, as Kirk (1962) indicated, a chance to more fully participate in varsity and junior varsity inter-scholastic athletics.

Capable teachers have been able to teach the skills of team play well enough to mentally retarded students that they have been able to compete against teams of normal students. Some residential schools field baseball and basketball teams. The mentally retarded enjoy competition of this nature and desire it for the social approval which it brings them... (Fait, 1967, p. 159).

In addition to the baseball and basketball teams fielded by some residential schools, the Mansfield State Training School and Hospital successfully fields a competitive football team. If the mentally retarded in residential schools can be trained to successfully compete against normal individuals by means of an adapted physical
education class, then surely those educable mentally retarded in our public schools could benefit as much, if not more, from adapted physical education classes.

"It is our job to see that none of our students are denied the academic experiences intended for all students nor denied the athletic and physical education activities" (Jenny, 1959, p. 23). According to Sengstock & Stein (1967), the present situation, in relation to varsity and junior varsity interscholastic athletic involvement on the part of the educable mentally retarded population, is one of inactivity on the part of the educator. The present condition also involves a lack of opportunity and too little preparation for the mentally retarded in order for them to more fully participate in physical education classes, recreation, and athletic programs.

Thus, it seems that the educable mentally retarded have the potential general motor abilities and intellectual abilities needed to participate in varsity and junior varsity interscholastic athletics. However, a program of adapted physical education seems to be the needed impetus to help the educable mentally retarded fully develop their general motor abilities so that they can compete, at an adequate level, with normal individuals in team and individual sports.
This chapter contained a review of the literature which concerned itself mainly with the concepts of (1) the general motor abilities of the mentally retarded, (2) how intellectual ability affects general motor ability, and (3) what value, if any are adapted physical education classes for educable mentally retarded students. Chapter III, which follows, represents a discussion of procedures used in the study including its subjects, instruments, hypotheses to be tested, means of collecting data, and analysis of the data.
CHAPTER III

PROCEDURES

The purpose of this study was to investigate how the educable mentally retarded students of the Columbus School System identified with varsity and junior varsity interscholastic athletic competition within their own high schools. In conjunction with this, the attitudes of the high school varsity and junior varsity coaches within the school system were studied to determine how they responded to the educable mentally retarded participating in varsity and junior varsity interscholastic athletic competition.

This chapter is organized as follows: subjects, instruments, hypotheses to be tested, collection of the data, and the method of analysis of the data.

Subjects

Permission was obtained from the Assistant Superintendent, Administration of the Columbus Public Schools, to use high school educable mentally retarded
students and the high school varsity and junior varsity coaches from the school system.

Table one presents the number of educable mentally retarded students supplied with questionnaires at each of the high schools along with the average chronological and mental age for each high school group.

Table 1

Number of Students Given Questionnaires at Each High School

<table>
<thead>
<tr>
<th>High School</th>
<th>Number of Students</th>
<th>Average CA</th>
<th>Average MA</th>
<th>IQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>33</td>
<td>17-8</td>
<td>14-8</td>
<td>70</td>
</tr>
<tr>
<td>Eastmoor</td>
<td>10</td>
<td>18-7</td>
<td>14-7</td>
<td>66</td>
</tr>
<tr>
<td>Linden McKinley</td>
<td>32</td>
<td>17-10</td>
<td>14-3</td>
<td>67</td>
</tr>
<tr>
<td>Marion Franklin</td>
<td>26</td>
<td>17-8</td>
<td>14-4</td>
<td>68</td>
</tr>
<tr>
<td>Mohawk</td>
<td>16</td>
<td>18-7</td>
<td>15-1</td>
<td>68</td>
</tr>
<tr>
<td>North</td>
<td>10</td>
<td>18-1</td>
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<td>66</td>
</tr>
<tr>
<td>South</td>
<td>33</td>
<td>18-7</td>
<td>14-9</td>
<td>69</td>
</tr>
<tr>
<td>N-8</td>
<td>N-189</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

One hundred and eighty-nine educable mentally retarded male students were questioned. They were all enrolled in high school classes for the mentally retarded in the school system. All of the students had individually measured intelligence scores between fifty and 79. This IQ range was chosen because it was the one used by the school
system to identify and place individuals who were in need of special class facilities. Principals from the following high schools granted permission for the involvement of their special class students in this study: Central, Eastmoor, Linden McKinley, Marion Franklin, Mohawk, North, South, and West. Permission was not granted by East High School because the principal felt that the study was being conducted too close to the end of the school year and his teachers were already overloaded with duties to perform. The remaining four high schools in the system did not have special classes for the educable mentally retarded at the time this study was conducted.

Table two presents the number of coaches supplied with questionnaires at each high school and a breakdown of coaches per sport that responded.

Ninety-six high school coaches were available to be questioned. Too, the coaches all came from the various high schools in the system. Principals from the following high schools granted permission for their coaches to take part in this study: Bookhaven, Central, Eastmoor, Linden McKinley, Marion Franklin, Mohawk, North, Northland, South, Walnut Ridge, West, and Whetstone. Permission was not granted by East High School for the reason previously
stated.

Table 2
Number of Coaches Given Questionnaires at Each High School

<table>
<thead>
<tr>
<th>High School</th>
<th>Number of Coaches</th>
<th>Baseball</th>
<th>Basketball</th>
<th>Cross Country</th>
<th>Football</th>
<th>Golf</th>
<th>Swimming</th>
<th>Tennis</th>
<th>Track</th>
<th>Wrestling</th>
</tr>
</thead>
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<tr>
<td>Brookhaven</td>
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<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Central</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Eastmoor</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Linden McKinley</td>
<td>10</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
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<td>Marion Franklin</td>
<td>7</td>
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<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mohawk</td>
<td>6</td>
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<td>3</td>
<td>1</td>
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<td>1</td>
<td>0</td>
</tr>
<tr>
<td>North</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Northland</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>0</td>
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<td>1</td>
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<tr>
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<td>1</td>
<td>4</td>
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<td>West</td>
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<td>1</td>
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<tr>
<td>Whetstone</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
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</tr>
</tbody>
</table>

N-12   N-96

Instruments

Using the criteria set forth by Best (1959) the investigator developed the questionnaires used to conduct
this study. Separate questionnaires for the educable mentally retarded students and for the varsity and junior varsity coaches were constructed. Each of the questionnaires was objective in nature to eliminate as much subjectivity or interpretative bias on the part of the investigator as possible. Copies of the questionnaires can be found in Appendixes C and E.

John Best (1959), in his book Research in Education, discusses the nature and development of a questionnaire. He states that a good questionnaire should have the following eight characteristics incorporated into it. They are: 1) it should deal with a significant topic, 2) it should seek information which cannot be obtained elsewhere, 3) it should be as short as possible, 4) it should be neatly arranged and clearly printed, 5) each question should deal with a single idea, 6) the questions should be objective in nature, 7) the questions should proceed from general to more specific responses, and 8) it should be easy to tabulate and interpret.

The student's questionnaire was comprised of 31 objective type questions which were read to him in a group setting. The special education teacher acted as the main reader and aide. This was done to permit the non-readers
to complete the questionnaire. This also was done to insure that all of the subjects interpreted the questions as they were written. The coach's questionnaire was made up of 29 objective type questions, and two subjective questions. The answers to the subjective questions were scored as either positive or negative by the investigator according to the reply. The coaches answered the questionnaire individually.

The information gathered by means of these questionnaires was designed to reveal the attitudes of the coaches and the educable mentally retarded students in reference to the latter's ability to participate in interscholastic athletic competition.

An explanatory letter was attached to the student's questionnaire for the use of the special education teacher. This letter instructed each teacher how to administer the questionnaire to the students. Attached to the teacher's letter was an Intelligence Score Sheet so that the teacher could list the IQ of each student answering the questionnaire. There was also an explanatory letter attached to the coaches' questionnaire describing what was to be done.

A copy of each letter and a copy of each of the questionnaires can be found in the Appendixes. See
Appendixes B, C, D, and E.

**Hypotheses to be Tested**

The following hypotheses and their corollaries were tested in this study:

**Hypotheses I**
Educable mentally retarded students will express a strong interest in athletics of any nature.

**Hypothesis II**
The educable mentally retarded will express a strong desire to belong to either a varsity or junior varsity interscholastic athletic team.

**Corollary I**
The educable mentally retarded will more often choose either football or basketball as a desired sport in which to participate if given the opportunity.

**Hypothesis III**
The educable mentally retarded will indicate that the main reasons for their lack of involvement on either varsity or junior varsity interscholastic athletic teams will be a fear of failure, and the fear of ridicule by the normal members of the team.

**Hypothesis IV**
The educable mentally retarded will indicate that they have the physical and the mental abilities needed to be athletes.

**Hypothesis V**
The varsity and junior varsity coaches will indicate that the
that the educable mentally retarded student does not possess the needed mental and physical skills necessary to succeed in interscholastic athletic competition of any nature.

**Corollary 1**
The coaches will indicate that the educable mentally retarded student should not participate in either varsity or junior varsity interscholastic athletic competition.

**Corollary 2**
The coaches will indicate that the educable mentally retarded will perform below average on the majority of the interscholastic athletic teams on which they attempt to participate.

**Collection of the Data**

To obtain adequate data to test the hypotheses the data were collected as follows:

The date necessary to test hypotheses I, II and its corollary 1, hypotheses III, and IV were taken from the responses given by the mentally retarded students to several questions on the Student's Questionnaire.

The data necessary to test hypothesis V and its corollaries 1 and 2 were taken from the responses given by the varsity and junior varsity coaches to several questions on the Coach's Questionnaire.
The questionnaires were sent to the various high schools through the inter-school mail. The student's questionnaires were sent directly to the special education teacher in charge of the class. The coaches' questionnaires were sent to the Athletic Director in each high school with an attached letter requesting him to distribute the questionnaires to all coaches in his high school. All of the questionnaires were to be returned via inter-school mail. A copy of the letter sent to the Athletic Directors can be found in Appendix A.

A follow-up to obtain questionnaires not returned by coaches was done in the following manner:

1. A master list of coaches from each high school and the sport(s) they coached was obtained from the Director of Physical Education.

2. A comparison of the coaches by sport(s) in each high school against the master list identified the coaches who had not returned their questionnaires.

3. A second questionnaire was sent via the United States mail to these individuals.

4. Telephone calls were made after two weeks to those coaches who had not returned this
second questionnaire.

After a second telephone call was made to each coach who had not returned the second questionnaire, no further attempt was made by the investigator to obtain the data gathering instrument.

Method of Analysis of the Data

Since the total populations of both the high school educable mentally retarded males and the high school varsity and junior varsity coaches were supplied with questionnaires, conclusions were drawn which were applicable to the entirety of both of these populations within the school system.

After the hypotheses and corollaries were developed the investigator then constructed the questionnaires to gather the needed data. Specific questions were then designed expressly for the purpose of testing each hypothesis or corollary. The validity and reliability of the specific questions used to test each hypothesis and corollary are uncertain due to several uncontrollable variables. These variables include the honesty of the coaches and educable mental retardates, the reader's interpretation of the questions, and the varying educational backgrounds of the
respondents.

Several questions were used to test each hypothesis or corollary. The following questions from the Student's Questionnaire were used to test hypothesis I because they indicated either an interest or disinterest in athletics by the educable mentally retarded:

   6) Do you like sports?
   7) What high school sports do you like?
   20) Do you take part in any sport events that are not part of the high school you attend, such as a recreation center or the YMCA?
   28) Do you watch sports on television?
   29) If you do watch sports on television, what sports are they.
   30) Do you go to the home or away high school sports games?

To test hypothesis II questions from the Student's Questionnaire which indicated a desire to belong to either a varsity or junior varsity interscholastic athletic team were used. These questions were:

   9) Would you like to be a member of one of your high school's athletic teams?
   11) Why would you like to play in sports?
12) Would you like to play on the varsity or junior varsity team?

14) Are you now, or have you been on a varsity or junior athletic team?

15) If you are, or were on a team, tell which team.

16) Did you participate on a varsity or junior varsity team?

17) If you played on a team, for how many years were you a member?

27) If you do not play on any sport team at the high school now, would you like to?

Through corollary 1 the writer investigated which sports interested the educable mentally retarded students. The three questions used from the Student's Questionnaire were:

8) Of the high school sports you like, which do you like best, second best, and third best?

10) On which high school athletic team would you like to be a member?

13) On which of your high school teams do you think you could participate?

Several questions revealed reasons for lack of involvement by the mentally retarded on either varsity or
junior varsity interscholastic athletic teams, the
questions below from the Student's Questionnaire were
used to test hypothesis III:

18) Have you ever tried out for any high school
athletic team?
19) If you are not on any high school team, or
if you have never tried out for one of the
teams, tell why.
21) Do you think you could succeed in the sports
program at your high school?
31) Do you like the athletes in your school?
32) Do you think the athletes in your high school
like you?
33) Do you think the coaches like you?
34) Do you like the coaches?
35) Do you think there should be special gym
classes and athletic teams for students who
cannot make the varsity or junior varsity
interscholastic athletic teams?

The following questions from the Student's
Questionnaire were used to test hypothesis IV because they
indicated, through student responses, the attitudes of
these same students toward their own mental and physical
abilities:

20) Do you like physical education?

22) Do you think you are intelligent enough to make a high school sports team?

23) Are you strong enough to make a high school team?

24) Do you think you have the skills needed to be an athlete?

25) Do you think you could learn and remember the rules and moves of a sport?

Several questions from the Coach's Questionnaire were used to test hypothesis V. These questions were used because the responses to them indicated the coaches attitudes toward the mental and physical abilities of the educable mentally retarded.

9) How do the mentally retarded perform and behave in your physical education classes?

10) To what degree do the mentally retarded participate in your physical education classes?

17) Do you think the mentally retarded have the motor abilities necessary to succeed in a varsity or junior varsity athletic sport?
18) Do you think the mentally retarded have the necessary motor coordination needed to compete in sports?

19) Do you think the mentally retarded have the physical stamina needed to participate in sports?

20) Do the mentally retarded have the mental ability to learn the rules and regulations of a sport?

21) Do the mentally retarded have the mental ability to learn and retain all of the moves that are involved in the different sports?

27) Should there be a special physical education class for the mentally retarded?

To test corollary 1, questions from the Coach's Questionnaire which revealed the coaches' feelings concerning the educable mentally retarded participating in interscholastic athletics were used. These questions were:

13) Do you think the mentally retarded should participate in varsity or junior varsity sports?

16) Would you coach a mentally retarded student?
22) Should the mentally retarded be allowed to try out for varsity or junior varsity athletic teams?

23) Do you think the mentally retarded would integrate with the normal members of the team?

24) Do you think the normal students would integrate with the mentally retarded members of the team?

Corollary 2 was designed to reveal how the coaches felt the educable mentally retarded would perform on the various athletic teams. Several questions from the Coach's Questionnaire related to this corollary were:

11) Have you ever known of mentally retarded athletes?

12) Have you ever coached a mentally retarded student? How did his performance compare with that of a normal individual?

14) In what sport(s) do you think the mentally retarded could best perform?

15) If the mentally retarded did participate in athletics, indicate how you think they would do in each sport?

The questions were tallied individually to
determine the attitudes of the coaches and the students in regard to the various questions in the questionnaires. After each question was tallied, it was possible to obtain a total score for each of the questions used to test the hypotheses and corollaries. It was possible then to convert the total score for each question into a percentage and thus determine whether or not the proposed hypotheses and corollaries were supported.

The two subjective questions answered by the coaches, 1) What is your concept of a mentally retarded student? and 2) Are there any additional comments you would like to make in relation to the mentally retarded and athletic competition?, were judged to be either positive or negative in nature by the investigator on the basis of the content of the coaches' responses.

There was no statistical procedure to be followed in determining a percentage level to be used for acceptance or rejection of the hypotheses or corollaries. The investigator, after consulting with a member of the Statistics Section, Department of Psychology of the Ohio State University, decided not to set any exact percentage of the total response to each question as the percentage needed to accept or reject the hypotheses and corollaries.
Instead, direct percentages were presented and discussed in terms of their positive or negative relationship to each hypothesis or corollary. A positive relationship existed when 75 percent or more of the respondent's answers complied with the hypothesis or corollary as it was worded. A negative relationship was present when 74 percent or less of the respondent's answers were not in agreement with the hypothesis or corollary as it was stated.

The present chapter indicated the design of the study, the selection of the subjects, the hypotheses to be tested, and the methods used to collect and analyze the data.

The next chapter presents the statistical analysis necessary for proper interpretation of the data. It included the data, discussion and conclusions concerning each of the hypotheses and corollaries to be tested.
CHAPTER IV
STATISTICAL ANALYSIS AND INTERPRETATION OF DATA

Chapter IV presents the statistical analysis and interpretation of data. It includes the presentation of the hypotheses and corollaries, together with the data, discussion, and conclusions concerning each hypothesis and corollary.

Table 3
Number of Questionnaires Sent to Coaches and/or Students in the High Schools, and the Number of Questionnaires Returned by the Two Populations

<table>
<thead>
<tr>
<th>High School</th>
<th>Coaches Sent</th>
<th>Questionnaires Sent</th>
<th>Coaches Returned</th>
<th>Questionnaires Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brookhaven</td>
<td>8</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central</td>
<td>8</td>
<td>5</td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>Eastmoor</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Linden McKinley</td>
<td>10</td>
<td>6</td>
<td>32</td>
<td>28</td>
</tr>
<tr>
<td>Marion Franklin</td>
<td>7</td>
<td>5</td>
<td>26</td>
<td>21</td>
</tr>
<tr>
<td>Mohawk</td>
<td>6</td>
<td>3</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>North</td>
<td>6</td>
<td>6</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Northland</td>
<td>8</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>South</td>
<td>8</td>
<td>6</td>
<td>33</td>
<td>23</td>
</tr>
<tr>
<td>Walnut Ridge</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>West</td>
<td>8</td>
<td>6</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Whetstone</td>
<td>10</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>96</strong></td>
<td><strong>72-75%</strong></td>
<td><strong>189</strong></td>
<td><strong>153-81%</strong></td>
</tr>
</tbody>
</table>
Questionnaires were sent to 96 coaches and 189 educable mentally retarded students. Seventy-two coaches returned their questionnaire. This represented a coaches' response of 75 per cent. One hundred and fifty-three students' questionnaires were returned which represented a students' response of 81 per cent. The number of coaches' and/or student questionnaires sent to each high school in the school system, and the number of coaches and/or students who returned questionnaires from the various high schools was presented in preceding Table three.

The background data of the two populations used in this study is presented in Tables four and five. Table four contains the background information of the students, while Table five has the background data of the coaches.

Table 4

Background Data of the Educable Mentally Retarded Students Used in this Study

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18 years 2 months</td>
</tr>
<tr>
<td>Weight</td>
<td>152 pounds</td>
</tr>
<tr>
<td>Height</td>
<td>$67\frac{1}{2}$ inches</td>
</tr>
<tr>
<td>IQ</td>
<td>68</td>
</tr>
<tr>
<td>Grade level</td>
<td></td>
</tr>
<tr>
<td>ten</td>
<td>59</td>
</tr>
<tr>
<td>eleven</td>
<td>57</td>
</tr>
<tr>
<td>twelve</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
</tr>
</tbody>
</table>
As can be seen in Table four, there was a total of 153 educable mentally retarded male students used in this study. An analysis of the students according to grade level revealed that there were 59 sophomores, 57 juniors, and 37 seniors. The average age for this population was 18 years two months, with a range from 15 years four months to 19 years nine months. The mean weight for this group was 152 pounds. However, the weights ranged from one hundred pounds to 230 pounds. The height of the students ranged from 54 inches to 80 inches with a mean height of 67½ inches. According to school policy, in order to be admitted into the special class, one must have an intelligence quotient (IQ) between fifty and 79. The IQ range of this group was 53 to 79, with a mean IQ of 68.

A total of 72 varsity and junior varsity coaches returned questionnaires. The range of years that these individuals had been in the teaching profession was from one year to 28 years. The mean number of years in teaching for this population was nine. The range of years that these individuals had been in coaching was the same, that is, one year to 28 years with a mean number of years as eight. The discrepancy in mean years teaching and mean years coaching is accounted for by the fact that some
teachers started coaching a few years after they started
teaching, and a few teachers stopped coaching after they
had been in coaching for a period of years.

As can be seen in Table five, all areas of education
contributed to the coaching staff of the school system.

Table 5
Background Data of the Coaches Used in this Study

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total coaches surveyed</td>
<td>72</td>
</tr>
<tr>
<td>Mean years teaching</td>
<td>9</td>
</tr>
<tr>
<td>Mean years coaching</td>
<td>8</td>
</tr>
<tr>
<td>Major teaching area</td>
<td></td>
</tr>
<tr>
<td>Language Arts</td>
<td>3</td>
</tr>
<tr>
<td>Social Studies</td>
<td>16</td>
</tr>
<tr>
<td>Science and Math</td>
<td>16</td>
</tr>
<tr>
<td>Physical Education</td>
<td>11</td>
</tr>
<tr>
<td>Others</td>
<td>13</td>
</tr>
<tr>
<td>Physical education and Language Arts</td>
<td></td>
</tr>
<tr>
<td>Social Studies</td>
<td>6</td>
</tr>
<tr>
<td>Science and Math</td>
<td>6</td>
</tr>
<tr>
<td>Coaches in each sport</td>
<td></td>
</tr>
<tr>
<td>Baseball</td>
<td>21</td>
</tr>
<tr>
<td>Basketball</td>
<td>30</td>
</tr>
<tr>
<td>Cross Country</td>
<td>12</td>
</tr>
<tr>
<td>Football</td>
<td>40</td>
</tr>
<tr>
<td>Golf</td>
<td>6</td>
</tr>
<tr>
<td>Swimming</td>
<td>1</td>
</tr>
<tr>
<td>Tennis</td>
<td>6</td>
</tr>
<tr>
<td>Track</td>
<td>15</td>
</tr>
<tr>
<td>Wrestling</td>
<td>13</td>
</tr>
<tr>
<td>Have had contact with the mentally retarded</td>
<td>60</td>
</tr>
<tr>
<td>Have not had contact with the mentally retarded</td>
<td>12</td>
</tr>
</tbody>
</table>
A breakdown of the coaches and their teaching area(s) revealed the following subject-teacher division: Language Arts—three, Social Studies—16, Science and Math—16, Physical Education—11, and Others which included: Guidance Counselors—two, and teachers of Business Education—two, Driver Education—three, Industrial Arts—three, Special Education—two, and Speech—one. Also, there were 13 coaches who taught Physical Education and an academic subject.

The number of coaches in each sport is also presented in Table five. The majority of the coaches used in this study coached in two sports which accounts for the large numbers in this section of the Table. The number of coaches in each sport are as follows: Baseball—21, Basketball—30, Cross Country—12, Football—40, Golf—six, Swimming—one, Tennis—six, Track—15, and Wrestling—13.

Only 12 or 16.7 per cent of the total coaches questioned had not had any contact with a mentally retarded individual. This means that 60 or 83.3 per cent of the coaches had had some type of contact with a mentally retarded individual. Some coaches had encountered the mentally retarded in the school where they teach, or in the school where they had taught. Others had had contact with mentally retarded individuals through activities not
associated with the school such as, church work, volunteer work, or in families of their friends.

**Hypothesis I:** Educable mentally retarded students will express a strong interest in athletics of any nature.

**Data**

To test hypothesis I, data were drawn from the responses given by the educable mentally retarded students to questions 6, 7, 26, 28, 29, and 30 on the Student's Questionnaire. These questions were used because they revealed either an interest or disinterest in athletics of any nature as reported by the educable mentally retarded high school students. The pertinent data regarding the test of this hypothesis are presented in Tables six, seven, and eight.

**Discussion**

A study of Table six immediately indicates that this educable mentally retarded population exhibited a very strong liking for sports. Of the 153 students who responded to the questionnaire, 145 or 93.5 per cent indicated that they liked sports of any nature. This meant that only eight students, or 6.5 per cent of the educable mentally retarded students questioned did not like
sports of any nature.

Table 6

Percentages and Numbers of Mentally Retarded Students Who Like or Dislike Sports, Watch or Do Not Watch Sports on Television, and Who Attend or Do Not Attend Athletic Events Sponsored by the High School (Percentages are based on N of 153)

<table>
<thead>
<tr>
<th></th>
<th>Like Sports</th>
<th>Watch Sports on Television</th>
<th>Attend Athletic Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>145</td>
<td>93.5%</td>
<td>137 92.5%</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>6.5%</td>
<td>11 7.5%</td>
</tr>
<tr>
<td>Home Games</td>
<td>--</td>
<td>--</td>
<td>-- 69.7%</td>
</tr>
<tr>
<td>Away Games</td>
<td>--</td>
<td>--</td>
<td>30 30.3%</td>
</tr>
</tbody>
</table>

A further study of Table six shows that the educable mentally retarded extended their interest in athletics by watching sports on television. The educable mentally retarded, in regard to the question of whether or not they watched sports on television, responded overwhelmingly in the affirmative. One hundred and forty-eight of the total 153 students responded to this question. Of the 148 who responded, 137 or 92.5 per cent of the students said they watched sports on television. Further, these students indicated that they watch every type of sport televised. The three sports most often viewed were football, basketball
and baseball respectively. It was possible that the reason football, basketball and baseball were watched most often was due to the fact that these three sports were the sports most often televised by the major television networks.

Only 11 or 7.5 per cent of the students did not view sports on the television. The reason these students did not view sports on television could possibly stem from one of two situations or a combination of both. One, the students were not interested in sports, two, these students did not have televisions in their homes and third, not only were there no viewing facilities in the homes, but the students also lacked interest.

In response to the question of athletic event attendance, 99 or 70.2 per cent of the students stated they did attend athletic events sponsored by their respective high schools. However, 42 or 29.8 per cent of the students said that they did not attend athletic events of any nature at their high schools. In analyzing the 99 or 70.2 per cent of the students who did attend athletic events, it was found that 92 or 69.7 per cent of the students attended home athletic events and that 30 or 30.3 per cent of the students attended away athletic events as well as the home games. Therefore, a review of the results obtained in
Table six helps to support the contention that this educable mentally retarded population did exhibit a strong interest in sports of any nature.

Table 7

Popularity of High School Sports as Indicated by the Mentally Retarded (Percentages are based on N of 153)

<table>
<thead>
<tr>
<th>Sport</th>
<th>Number of Students Who Like Sport</th>
<th>Percentage</th>
<th>Rank Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>79</td>
<td>51.6%</td>
<td>3</td>
</tr>
<tr>
<td>Basketball</td>
<td>109</td>
<td>70.1%</td>
<td>2</td>
</tr>
<tr>
<td>Cross Country</td>
<td>20</td>
<td>13.0%</td>
<td>9</td>
</tr>
<tr>
<td>Football</td>
<td>110</td>
<td>71.2%</td>
<td>1</td>
</tr>
<tr>
<td>Golf</td>
<td>22</td>
<td>14.3%</td>
<td>8</td>
</tr>
<tr>
<td>Swimming</td>
<td>67</td>
<td>43.7%</td>
<td>4</td>
</tr>
<tr>
<td>Tennis</td>
<td>31</td>
<td>20.1%</td>
<td>7</td>
</tr>
<tr>
<td>Track</td>
<td>40</td>
<td>26.1%</td>
<td>6</td>
</tr>
<tr>
<td>Wrestling</td>
<td>52</td>
<td>33.9%</td>
<td>5</td>
</tr>
</tbody>
</table>

A study of Table seven indicates the popularity of the sports that interest the educable mentally retarded students. The educable mentally retarded were asked to check (✓) the sport(s) they like and that interested them. The percentages within Table seven did not add up to one hundred per cent. Since each student was asked to check all of the sports in which he was interested, more responses than students answering the questionnaire were presented.
Table seven shows that the prestigious sports, football and basketball, lead the list in reference to which sport(s) the educable mentally retarded were most interested. Baseball, swimming, wrestling, track, tennis, golf, and cross country followed in descending order of popularity. It would appear then that the educable mentally retarded were most interested in the action sports: football, basketball, and baseball.

Table 8
Athletics Not Associated with the High School in Which the Mentally Retarded Participate

<table>
<thead>
<tr>
<th>Sport</th>
<th>N</th>
<th>Per cent</th>
<th>Rank Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>5</td>
<td>9.4%</td>
<td>3</td>
</tr>
<tr>
<td>Basketball</td>
<td>27</td>
<td>50.9%</td>
<td>1</td>
</tr>
<tr>
<td>Bowling</td>
<td>1</td>
<td>1.8%</td>
<td>6</td>
</tr>
<tr>
<td>Boxing</td>
<td>4</td>
<td>7.5%</td>
<td>4</td>
</tr>
<tr>
<td>Football</td>
<td>10</td>
<td>18.8%</td>
<td>2</td>
</tr>
<tr>
<td>Softball</td>
<td>2</td>
<td>3.7%</td>
<td>5</td>
</tr>
<tr>
<td>Swimming</td>
<td>1</td>
<td>1.8%</td>
<td>6</td>
</tr>
<tr>
<td>Tennis</td>
<td>1</td>
<td>1.8%</td>
<td>6</td>
</tr>
<tr>
<td>Volleyball</td>
<td>1</td>
<td>1.8%</td>
<td>6</td>
</tr>
<tr>
<td>Wrestling</td>
<td>1</td>
<td>1.8%</td>
<td>6</td>
</tr>
</tbody>
</table>

To further discover if the educable mentally retarded were interested in sports of any nature, the students
were asked to indicate whether or not they participated in athletic events not associated with their high schools, and if they did, in what sport(s) they participated. The students' responses are found in Table eight. Fifty-six or 39.4 per cent of the mentally retarded students in the various high schools did participate in athletic events not associated with their high schools. In other words, two-fifths of the retarded population took part in organized sports some place other than the high school environment. These students took part in an organized sports in one of the recreation centers, one of the YMCA's, or one of the boys' clubs located in or near the city of Columbus. They participated in the majority of the sports which the school system sanctioned as well as others including bowling, boxing, softball, and volleyball. The three sports in which the mentally retarded participated most often were basketball, football, and baseball, in that order. However, 86 or 60.6 per cent of the educable mentally retarded population in the school system did not participate in any type of athletic activity not associated with their high schools.
Conclusions

The analyses of the percentages of responses to the questions used to study this hypothesis indicated that the mentally retarded appeared to be very interested in athletic events. When asked, "Do you like sports?", 93.5 per cent of the students who answered the questionnaire responded with a "yes" answer. Positive percentages were also found for the other questions used to test this hypothesis with the one exception concerning the percentage of students who took part in athletic activities not sponsored by the school system. Slightly more than one-third of the responding students indicated that they were involved in athletics not associated with their high schools.

When total percentages of all the questions asked to test this hypothesis were taken into account, a positive relationship was found indicating that the educable mentally retarded were interested in sports. Therefore, the hypothesis that the educable mentally retarded would express a strong interest in athletics of any nature was found to be tenable.

Hypothesis II: The educable mentally retarded will express a strong desire to belong to either a varsity or junior varsity interscholastic athletic team.
Data

To test hypothesis II, data were taken from the responses given by the educable mentally retarded students to questions 9, 11, 12, 14, 15, 16, 17, 18, and 27 on the Student's Questionnaire. These questions were used because they indicated a desire or lack of desire on the part of the educable mentally retarded students to belong to either a varsity or junior varsity interscholastic athletic team within their high schools. The pertinent data regarding the test of this hypothesis are presented in Tables nine, and ten.

Discussion

Of the 153 students responding to this questionnaire, 94 or 63.5 per cent of the students indicated that they would like to participate on a high school interscholastic athletic team. However, 54 or 37.5 per cent of the students indicated that they had no desire to take part in interscholastic athletic events within their high schools. The reasons these students did not desire to participate in sports will be discussed at a later time. Of the 94 educable mentally retarded students who indicated that they desired to participate in interscholastic athletics, 93 stated that
they would like to be on varsity teams, and 26 indicated that they preferred to be on junior varsity teams. The discrepancy in totals was caused by 22 students who responded twice, indicating that they would like to participate on either varsity or junior varsity interscholastic athletic teams. Therefore, a large number of the educable mentally retarded students did desire to belong to either varsity or junior varsity interscholastic athletic teams.

Table 9

Reasons Given by the Mentally Retarded for Participating in Sports (Percentages are Based on an N of 153)

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Student Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>To be More Popular at School</td>
<td>22</td>
</tr>
<tr>
<td>To Help the School Win</td>
<td>59</td>
</tr>
<tr>
<td>To Have More Friends</td>
<td>30</td>
</tr>
<tr>
<td>To Make My Parents Proud of Me</td>
<td>24</td>
</tr>
<tr>
<td>To Make Me Proud of Myself</td>
<td>36</td>
</tr>
<tr>
<td>To Have Fun</td>
<td>51</td>
</tr>
</tbody>
</table>

The reasons selected by the educable mentally retarded students from the questionnaire concerning why they desired to participate in interscholastic athletics are presented in Table nine. A study of Table nine shows that
the reason most often chosen by the educable mentally retarded was that of helping the school win. The other reasons follow in descending order: "To have fun, to make me proud of myself, to have more friends, to make my parents proud of me, and to be more popular at school."

Table 10
Numbers and Percentages of Mentally Retarded Students Who Have Participated on the Various High School Athletic Team

<table>
<thead>
<tr>
<th>Team</th>
<th>Varsity</th>
<th>Junior</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>19.2%</td>
</tr>
<tr>
<td>Cross Country</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>19.2%</td>
</tr>
<tr>
<td>Football</td>
<td>7</td>
<td>1</td>
<td>8</td>
<td>30.4%</td>
</tr>
<tr>
<td>Track</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>19.2%</td>
</tr>
<tr>
<td>Wrestling</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>11.4%</td>
</tr>
<tr>
<td>Totals</td>
<td>20</td>
<td>6</td>
<td>26</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table ten presents a graphic review of the educable mentally retarded students within the school system who have participated on interscholastic athletic teams. As can be seen, 26 students from a total of 153 who responded to the questionnaire have taken part in interscholastic athletics. Football had the most participants with eight; basketball, cross country, and track followed with five participants each. Wrestling had three students who actively participated. Of the 26 participants, twenty made varsity teams,
and six made junior varsity teams. Further analysis showed that of these 26 educable mentally retarded athletes, 15 had been on either a varsity or junior varsity interscholastic team for two years, and three had been members of either a varsity or junior varsity interscholastic team for their three years in high school. The remaining eight students were first year participants.

It should be pointed out that the 26 educable mentally retarded interscholastic participants represent 16.9 per cent of the total educable mentally retarded population of the school system used in this study. In order to compare this percentage (16.9) to the per cent of "normal" students who participated in interscholastic athletics within the school system with the exception of East High School, the investigator obtained the figures for the number of varsity and junior varsity athletes and the number of male high school students in the school system. It was found that there were 2835 students who participated in interscholastic athletics of a total of 8830 male students. This meant that 32.1 per cent of the "normal" population participated on either a varsity or junior varsity interscholastic team. Comparing this 32.1 per cent to the 16.9 per cent of educable mentally retarded who
engaged in interscholastic athletics, it can be seen that the educable mentally retarded population was well represented in the school system's interscholastic athletic program. However, it must be remembered that the percentages were determined from populations of vastly different sizes.

Conclusions

The analyses of the percentages of responses to the questions used to study this hypothesis indicated that the educable mentally retarded did desire to belong to either a varsity or junior varsity interscholastic team. Of the respondents, for every one student who did not desire to belong to either a varsity or junior varsity athletic team, two educable mentally retarded students indicated that they did desire to belong to a varsity or junior varsity athletic team. The majority of the students who desired to belong to an athletic team expressed the desire to belong to a varsity squad. There were some students, however, who did not care to which squad they belonged, as long as they belonged. Twenty-six of the 153 educable mentally retarded students who answered the questionnaire had taken part on either a varsity or junior varsity athletic team within their high schools.
A positive relationship was found, when taking into account the total percentages of the questions asked to test this hypothesis, which indicated that the educable mentally retarded did desire to belong to either a varsity or junior varsity athletic team. Therefore, hypothesis II which stated that the educable mentally retarded would express a strong desire to belong to either a varsity or junior varsity athletic team was found to be tenable.

**Corollary 1:** The educable mentally retarded will more often choose either football or basketball as a desired sport in which to participate if given the opportunity.

**Data**

To test corollary 1, data were taken from the responses given by the educable mentally retarded students to questions 8, 10, and 13 on the Student's Questionnaire. These questions were used because they indicated in which interscholastic sport(s) the educable mentally retarded most desired to participate. The pertinent data regarding the test of this corollary are presented in Table 11.

**Discussion**

It was hypothesized that the educable mentally retarded would more often choose either football or
Table II

Number and Percentages of Students Who Chose the Various Sports in Which They Would Like to Participate (Percentages are Based on an N-153)

<table>
<thead>
<tr>
<th>Sport</th>
<th>Number of Students</th>
<th>Percentages</th>
<th>Serial Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Football</td>
<td>136</td>
<td>88.8%</td>
<td>1</td>
</tr>
<tr>
<td>Basketball</td>
<td>91</td>
<td>59.4%</td>
<td>2</td>
</tr>
<tr>
<td>Baseball</td>
<td>81</td>
<td>52.9%</td>
<td>3</td>
</tr>
<tr>
<td>Swimming</td>
<td>49</td>
<td>32.0%</td>
<td>4</td>
</tr>
<tr>
<td>Track</td>
<td>36</td>
<td>23.5%</td>
<td>5</td>
</tr>
<tr>
<td>Wrestling</td>
<td>34</td>
<td>22.2%</td>
<td>6</td>
</tr>
<tr>
<td>Golf</td>
<td>22</td>
<td>14.3%</td>
<td>7</td>
</tr>
<tr>
<td>Tennis</td>
<td>20</td>
<td>13.0%</td>
<td>8</td>
</tr>
<tr>
<td>Cross Country</td>
<td>14</td>
<td>9.1%</td>
<td>9</td>
</tr>
</tbody>
</table>

basketball as the interscholastic sport that most interested them. It was felt by the investigator that football and basketball would be the sports most often chosen by the retarded students because of the environmental factor of the Ohio State University and its heavy emphasis on and successes in football and basketball. A study of Table II immediately indicates that the educable mentally retarded did indeed choose football and basketball as the desired interscholastic sports in which they would like to participate if given the opportunity. Of the 153 educable mentally retarded students who returned a questionnaire,
136 or 88.8 per cent of the students chose football as the athletic team on which they wished to participate. Basketball ranked second, being the choice of 91 or 59.4 per cent of the students. Baseball was the third most popular sport with 81 or 52.9 per cent of the students desiring to be team members. The remaining sports are listed in descending order of preference as designated by the educable mentally retarded students: swimming-32 per cent, track-23.5 per cent, wrestling-22.2 per cent, golf-14.3 per cent, tennis-13 per cent, and cross country, the least desired sport with only 9.1 per cent of the population choosing it.

After indicating on the questionnaire on which interscholastic team(s) the educable mentally retarded desired to participate, 69.1 per cent of this population felt that they could succeed in becoming members on either the varsity or junior varsity interscholastic squad of the team(s) they chose. This indicated that seven of every ten educable mentally retarded students answering this questionnaire felt they were capable of being either varsity or junior varsity athletes.

Conclusions

Nine of every ten respondents desired to be football players. Six out of the same ten students desired to be
basketball players as a second choice. Football was chosen as the most popular sport with basketball as second. Baseball was a close third choice. The total percentage indicated a positive relationship. Therefore, corollary 1 was found to be supported.

**Hypothesis III:** The educable mentally retarded will indicate, that the main reasons for their lack of involvement on either varsity or junior varsity interscholastic athletic teams will be a fear of failure and the fear of ridicule by the normal team members.

**Data**

To test hypothesis III, data were taken from the responses given by the educable mentally retarded students to questions 18, 19, 21, 31, 32, 33, 34, and 35 on the Student's Questionnaire. These questions were used because they reflected the reasons given by the educable mentally retarded for not participating in interscholastic athletics. The pertinent data regarding the test of this hypothesis are presented in Table 12.

**Discussion**

Only forty students, 27.5 per cent of the retarded population, had ever tried out for either a varsity or junior varsity interscholastic athletic team. This indicated
that of the total population, 72.5 per cent of the students have not even attempted to become members of an interscholastic athletic team.

The investigator presented the students with the nine reasons in Table 12 for not being interested in athletics. Each student was to check (/) the reason(s) that best applied to his own situation.

The positions of the reasons for not attempting to make an athletic squad can be found in Table 12.

Table 12
Reasons the Mentally Retarded Have Not Tried Out for an Interscholastic Athletic Team

<table>
<thead>
<tr>
<th>Reasons For Not Trying Out</th>
<th>Students</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do not like sports</td>
<td>5</td>
<td>7.3%</td>
</tr>
<tr>
<td>I am not interested in sports</td>
<td>20</td>
<td>13.3%</td>
</tr>
<tr>
<td>I am afraid</td>
<td>9</td>
<td>6.0%</td>
</tr>
<tr>
<td>I am scared the other students would laugh at me</td>
<td>16</td>
<td>10.6%</td>
</tr>
<tr>
<td>I am afraid I would not make the team</td>
<td>30</td>
<td>20.0%</td>
</tr>
<tr>
<td>I am not allowed by my parents</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>I have a medical reason</td>
<td>14</td>
<td>9.3%</td>
</tr>
<tr>
<td>I have a job after school</td>
<td>47</td>
<td>31.3%</td>
</tr>
<tr>
<td>I do not like the coach</td>
<td>9</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

The investigator hypothesized that the most frequently chosen reasons would be "I am afraid that I would
not make the team," and "I am scared the other students would laugh at me." However, the students indicated that the reason which most prohibited them from participating in athletics was that "I have a job after school." Almost one-third of the students used in this study hold an after-school job. This possibly explains why so many of the educable mentally retarded students from this population have not tried out for an interscholastic athletic squad.

The second reason given for not participating was the one postulated by the investigator, namely, a fear of failing to make the team. When the students were asked if there should be special athletic teams for those individuals who could not make the varsity or junior varsity squad, 64 per cent of the retardates indicated their desire for this type of team. Perhaps this fear of failure was one of the reasons why 64 per cent of the educable mentally retarded felt a need for these special teams. The onus of failure could be greatly reduced because there would be little chance of not making one of these special teams.

A lack of interest in sports ranked as the third reason given by the students for non-participation in interscholastic athletics. "A fear of ridicule," appeared as the fourth student choice. The investigator hypothesized
that a fear of ridicule would be a prime reason for the educable mentally retarded's non-involvement in the sports program. However, according to the questionnaire, this reason was ranked fourth by the students. Approximately 81 per cent of the mentally retarded subjects thought a mutual feeling of friendship existed among the athletes, coaches, and themselves. This could account for the reason why the statement in the questionnaire "I am scared the other students would laugh at me" was not a prime reason for the educable mentally retarded's non-participation in interscholastic athletics. However, 36 per cent of the students indicated that some form of a feeling of fear prevented them from participating in athletics. Perhaps these students, unwittingly, presented data that could be interpreted as a general fear complex. This could indicate that the educable mentally retarded students were not as sure of the friendship and respect of the coaches and normal students as they indicated. (See statements: "I am afraid," "I am scared the other students would laugh at me," and "I am afraid I would not make the team" in Table 12.)
Conclusions

It was hypothesized that the most frequent reasons given by the educable mentally retarded would be a fear of failure and a fear of ridicule by the normal members of the team.

This hypothesis was only partially supported. The students chose a fear of failure as one of the main reasons for non-participation. The most often selected reason was that the students had after-school employment, which in itself inhibits athletic participation since extra-curricular athletics was an after-school-hours activity.

A fear of ridicule ranked fourth as a reason given by the educable mentally retarded for their lack of athletic involvement. Therefore, hypothesis III was found to be partially supported.

Hypothesis IV: The educable mentally retarded will indicate that they have the physical and mental abilities needed to become athletes.

Data

To test hypothesis IV, data were taken from the responses given by the educable mentally retarded students to questions 20, 22, 23, 24 and 25 on the Student's Questionnaire. These questions were used because they
indicated the attitudes the educable mentally retarded held in relation to their own mental and physical abilities concerning athletic prowess. The pertinent data regarding the test of this hypothesis are presented in Table 13.

Table 13

Attitudes of the Mentally Retarded in Relation to Their Athletic Prowess

<table>
<thead>
<tr>
<th>Statements</th>
<th>Students' Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Statements</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>Do you think you are smart enough to make a high school sport team?</td>
<td>114</td>
</tr>
<tr>
<td>Are you strong enough to make a high school team?</td>
<td>123</td>
</tr>
<tr>
<td>Do you think you have the skills needed to be an athlete?</td>
<td>105</td>
</tr>
<tr>
<td>Do you think you could learn and remember the rules and moves of a sport?</td>
<td>124</td>
</tr>
<tr>
<td>Do you like physical education?</td>
<td>114</td>
</tr>
</tbody>
</table>

Discussion

The educable mentally retarded students were given several questions which requested that they express whether or not they felt they had the requisite skills needed to be athletes. Table 13 portrays the results obtained by the
investigator. The percentages of the positive responses
given by the educable mentally retarded indicate that they
did feel they possessed the physical and mental abilities
needed to succeed as athletes within their high schools.

When the students were asked if they considered
themselves intelligent enough to become members of
interscholastic athletic teams, almost 75 per cent of the
students answered in the affirmative. This would indicate
that the majority of the educable mentally retarded students
in the school system considered themselves to have the
sufficient mental faculties needed to successfully partici-
pate in interscholastic athletic competition.

One of the questions that the students were asked
to answer concerned itself with whether or not the students
felt they could learn and then retain the moves and rules
of a sport. In reply to this question, 124 or 82.1 per cent
of the students indicated that if someone would teach them
the moves and rules that governed a particular sport, they
would be capable of comprehending and retaining the
information disseminated. Therefore, as indicated by the
above statement, the educable mentally retarded felt that
they did possess the mental abilities needed to participate
in athletics.
Relating to the question of whether the educable mentally retarded considered themselves strong enough to be athletes, 80.3 per cent of the respondents indicated that they were strong enough to take part in competitive sports. In regard to having the required physical skills needed to become athletes, slightly more than 70 per cent of the students indicated that they did have the needed physical skills required for interscholastic competition. These percentages might appear to be unusually high. However, the educable mentally retarded probably tended to over-estimate their actual potential abilities. Since relatively few of these students had actually participated in interscholastic athletics, perhaps they were unaware of the actual skills needed to succeed in interscholastic athletic competition.

Conclusions

The over-all percentage which was positive in nature indicated that approximately 75 per cent of the educable mentally retarded respondents felt that they were both strong enough and intelligent enough to become athletes on one of their high schools' interscholastic squads.
Hypothesis IV was found to be tenable.

**Hypothesis V:** The varsity and junior varsity coaches will indicate that the educable mentally retarded student does not possess the needed mental and physical skills necessary to succeed in interscholastic athletic competition of any nature.

**Data**

To test hypothesis V, data were taken from the responses given by the varsity and junior varsity coaches to questions 9, 10, 17, 18, 19, 20, 21, and 27 on the Coach's Questionnaire. These questions were used because they revealed the attitudes held by varsity and junior varsity coaches concerning the mental and physical skills of the educable mentally retarded in relation to competitive athletics. Pertinent data regarding the test of this hypothesis are presented in Tables 14 and 15.

**Discussion**

The investigator proposed that the coaches would indicate that the educable mentally retarded did not possess the mental and physical skills required to become athletes. A study of Table 14 indicates, however, that the coaches, in all instances but one, felt that the educable mentally
retarded students did possess the needed mental and physical skills necessary to succeed in athletic competition.

Table 14
How Varsity and Junior Varsity Coaches Feel About the Mental and Physical Abilities of the Mentally Retarded in Relation to Athletic Involvement

<table>
<thead>
<tr>
<th>Statements</th>
<th>Coaches' Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the mentally retarded have the motor abilities needed to compete in sports?</td>
<td>49 70.0% 21 30.0%</td>
</tr>
<tr>
<td>Do the mentally retarded have the motor coordination needed to compete in sports?</td>
<td>57 81.4% 13 18.6%</td>
</tr>
<tr>
<td>Could the mentally retarded learn athletic moves?</td>
<td>24 35.3% 44 64.7%</td>
</tr>
<tr>
<td>Do the mentally retarded have the physical stamina needed to succeed in sports?</td>
<td>63 91.3% 6 8.7%</td>
</tr>
<tr>
<td>Could the mentally retarded learn athletic rules?</td>
<td>49 75.3% 16 24.7%</td>
</tr>
</tbody>
</table>

When the varsity and junior varsity coaches were asked if they felt the educable mentally retarded had the motor abilities required to compete in sports, 49 of the 72 coaches who responded, or 70 per cent, indicated that they deemed the educable mentally retarded as possessing the requisite motor abilities needed to become athletes. Further, when these coaches were asked if they thought the
educable mentally retarded were motorially coordinated enough to compete in athletics, 57 or 81.4 per cent of the coaches' replies were affirmative in nature. In this same area concerning the physical skills of the educable mentally retarded, 91.3 per cent of the responding coaches indicated that they thought the educable mentally retarded had enough physical stamina to succeed in interscholastic athletics. These results indicated that approximately 81 per cent of the varsity and junior varsity coaches in the school system were of the opinion that the educable mentally retarded had enough physical stamina to succeed in interscholastic athletics. These results indicated that approximately 81 per cent of the varsity and junior varsity coaches in the school system were of the opinion that the educable mentally retarded did possess the physical skills needed for interscholastic athletic competition.

In relation to the mental abilities of the educable mentally retarded population, the results were not as positive. The coaches were asked if they felt the educable mentally retarded could learn and remember the rules and regulations of a sport. Of the respondents, 75.3 per cent stated that they thought the educable mentally retarded were capable of retaining such knowledge. However, when
the same coaches were asked if they felt the retardates could learn and remember the strategies of a sport, only 35.3 per cent stated they thought the educable mentally retarded capable of such training. This meant that approximately 65 per cent of the coaches deemed the educable mentally retarded incapable of learning and remembering the strategies of a sport. These results indicated that the coaches were not as certain of the requisite mental abilities of the educable mentally retarded as they were of the educable mentally retarded's physical abilities.

Table 15 indicates how those coaches who were solely physical educators perceived the interaction of the educable mentally retarded within their physical education classes. The major findings of Table 15 were that the physical educators felt: 1) the educable mentally retarded took part in the physical education class both actively and passively, 2) the educable mentally retarded exhibited behavior similar to that of the regular students, and 3) the educable mentally retarded were socially accepted by the normal students within the physical education classes.
Table 15
How Physical Educators Indicate the Mentally Retarded Perform and Behave in Physical Education Classes (Percentage based on an N-24)

<table>
<thead>
<tr>
<th>Behavior and Performance</th>
<th>Physical Educators' Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Teachers</td>
</tr>
<tr>
<td>Take part in class</td>
<td>15</td>
</tr>
<tr>
<td>Do not take part in class</td>
<td>6</td>
</tr>
<tr>
<td>Are socially accepted</td>
<td>8</td>
</tr>
<tr>
<td>Are socially rejected</td>
<td>7</td>
</tr>
<tr>
<td>Are emotionally stable</td>
<td>7</td>
</tr>
<tr>
<td>Are emotionally unstable</td>
<td>7</td>
</tr>
<tr>
<td>Behave as regular students do</td>
<td>11</td>
</tr>
<tr>
<td>Do not behave as regular students</td>
<td>7</td>
</tr>
<tr>
<td>Have the needed motor skills</td>
<td>8</td>
</tr>
<tr>
<td>Do not have the needed motor skills</td>
<td>9</td>
</tr>
<tr>
<td>Have the needed mental ability</td>
<td>6</td>
</tr>
<tr>
<td>Do not have the needed mental ability</td>
<td>6</td>
</tr>
<tr>
<td>Participate willingly</td>
<td>9</td>
</tr>
<tr>
<td>Participate indifferently</td>
<td>13</td>
</tr>
<tr>
<td>Participate unwillingly</td>
<td>2</td>
</tr>
</tbody>
</table>

An interesting point revealed through the questionnaire was that although the coaches felt that the retarded did possess the physical and mental dexterity needed for athletic competition, almost 60 per cent of the coaches indicated that the educable mentally retarded should not have their physical education classes with normal individuals.
Conclusions

The analysis of the percentages of responses to the questions used to test this hypothesis indicated that 81 per cent of the coaches did feel the educable mentally retarded students had the physical skills required to succeed in competitive athletics. In the area of the retardates' mental abilities, a small majority, 55 per cent indicated that the educable mentally retarded did have adequate mental abilities to succeed as athletes. In other words, according to the coaches, the retardates had the physical skills needed to participate in interscholastic athletics, but they, the coaches, were not as sure about the educable mentally retarded's mental ability.

The total percentage indicated a negative relationship. Therefore, in light of the results obtained, hypothesis V was not supported.

Corollary 1: The coaches will indicate that the educable mentally retarded should not participate in either varsity or junior varsity interscholastic athletic competition.

Data

To test corollary 1, data were taken from the responses given by the varsity and junior varsity coaches
to questions 13, 16, 22, 23, and 24 on the Coach's Questionnaire. These questions were used because they revealed the coaches' feelings concerning the educable mentally retarded participating in interscholastic athletics. The pertinent data regarding the test of this corollary are presented in Table 16.

Discussion

The investigator hypothesized that the coaches would indicate that the educable mentally retarded should not participate in interscholastic athletic competition. A study of Table 16 immediately indicates to the reader that the coaches did feel that the educable mentally retarded should participate in interscholastic varsity and junior varsity athletics. Of the 72 coaches who returned their questionnaire, 53 or 80.3 per cent indicated that the educable mentally retarded definitely should participate in interscholastic athletics. An even higher percentage, 91.6 per cent, indicated that they would be willing to coach a retarded athlete. These results would appear to indicate that this school system's coaches felt that the educable mentally retarded did have a definite place on athletic teams. Further validation was evidenced when
Table 16
How Coaches Feel About the Mentally Retarded Participating in Varsity and Junior Varsity Athletics

<table>
<thead>
<tr>
<th>Statements</th>
<th>Coaches' Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Should the mentally retarded participate in sports?</td>
<td>Yes  %       No  %</td>
</tr>
<tr>
<td></td>
<td>53  80.3%  13  19.7%</td>
</tr>
<tr>
<td>Would you coach a mentally retarded athlete?</td>
<td>66  91.6%  6  8.4%</td>
</tr>
<tr>
<td>Should the mentally retarded try out for athletic teams?</td>
<td></td>
</tr>
<tr>
<td>Varsity</td>
<td>63  91.3%  6  8.7%</td>
</tr>
<tr>
<td>Junior Varsity</td>
<td>39-45.3%  47-54.7%</td>
</tr>
<tr>
<td>Would the mentally retarded integrate with the normal team members?</td>
<td>51  72.9%  19  28.1%</td>
</tr>
<tr>
<td>Would the normal team members integrate with the mentally retarded?</td>
<td>47  67.1%  23  32.9%</td>
</tr>
</tbody>
</table>

91.3 per cent of the coaches stated that they felt the educable mentally retarded should try out for either a varsity or junior varsity team. Neither varsity nor junior varsity competition received more emphasis by the coaches when they were asked on which of the two teams the educable mentally retarded would do best. Therefore, the coaches seem to feel that the retarded could participate on either a varsity or junior varsity interscholastic athletic team.

The coaches were also asked if they thought the educable mentally retarded would be able to integrate,
socially, emotionally, and personally with normal members of the athletic team and if the normal members of the athletic team would be able to integrate socially, emotionally, and personally with their mentally retarded team-mates. To this, the coaches indicated that they felt that the educable mentally retarded would be better able to integrate and associate with their normal team-mates than would the normal members of the team be able to integrate and associate with their educable mentally retarded counterparts.

Conclusions

The analysis of the percentages of responses to the questions used to test this corollary indicated that the coaches did feel the mentally retarded should participate on both varsity and junior varsity athletic teams. A large majority of the coaches indicated that the educable mentally retarded definitely should be permitted to participate in interscholastic athletics. This indicated a positive relationship. Therefore, it was found that corollary 1 was not supported.

Corollary 2: The coaches will indicate that the educable mentally retarded will perform below average on the majority
of the interscholastic athletic teams on which they attempt to participate.

Data

To test corollary 2, data were taken from the responses given by the varsity and junior varsity coaches to questions 11, 12, 14, and 15 on the Coach's Questionnaire. These questions were used because they revealed how the coaches felt the educable mentally retarded would perform on the various interscholastic athletic teams. The pertinent data regarding the test of this corollary are presented in Tables 17 and 18.

Table 17

<table>
<thead>
<tr>
<th>Sport</th>
<th>Superior</th>
<th>Very Good</th>
<th>Average</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>19</td>
<td>28</td>
</tr>
<tr>
<td>Basketball</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td>Cross Country</td>
<td>5</td>
<td>19</td>
<td>22</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Football</td>
<td>0</td>
<td>6</td>
<td>11</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>Golf</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td>Swimming</td>
<td>3</td>
<td>12</td>
<td>20</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Tennis</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>Track</td>
<td>5</td>
<td>24</td>
<td>18</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Wrestling</td>
<td>0</td>
<td>10</td>
<td>15</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>16</strong></td>
<td><strong>81</strong></td>
<td><strong>125</strong></td>
<td><strong>139</strong></td>
<td><strong>157</strong></td>
</tr>
<tr>
<td><strong>Percentages</strong></td>
<td><strong>3%</strong></td>
<td><strong>15.6%</strong></td>
<td><strong>24.1%</strong></td>
<td><strong>26.8%</strong></td>
<td><strong>30.3%</strong></td>
</tr>
</tbody>
</table>


Discussion

It was hypothesized that the coaches would indicate that the educable mentally retarded would perform below average on the majority of the competitive sport teams on which they would attempt to participate.

The educable mentally retarded's ability to perform in each sport was determined by using the performance level that received the majority of the responses of the coaches.

A study of Table 17 indicates that the coaches felt that the educable mentally retarded would perform average or below average on all of the teams sponsored by the school system except for cross country and track. These were the only sports in which the coaches felt the retarded could perform at an average level or better. The coaches indicated that the educable mentally retarded would perform poorly in the following sports: baseball, basketball, football, golf, and tennis. The coaches felt the retardates' performance would be fair in wrestling. They would perform on an average level in cross country and swimming. The only sport in which the coaches felt the educable mentally retarded students might excel was track. The coaches further indicated that there were no sports in which the educable mentally retarded's performance would
be superior. In summary, the coaches stated that the mentally retarded would perform poorly in five sports, fair in one sport, average in two sports, very well in one sport, and superior in none.

When the coaches were asked to list in serial order the sports in which they felt the educable mentally retarded could best perform, the results obtained showed the following order from best to least able in performance: cross country, track, swimming, golf, tennis, wrestling, football, baseball, and finally, basketball. It appeared as if the coaches felt that the educable mentally retarded would most likely succeed in sports of an individual nature.

This serial ranking, by the coaches of sports in which the educable mentally retarded should participate was in direct contradiction to the serial ranking as indicated by the retardates. The students listed football, basketball, and baseball as their primary choices for interscholastic participation. The coaches ranked these same sports as the three sports in which the retardates would be least successful.

Twenty of the total 72 coaches who responded to the questionnaire had coached educable mentally retarded
students in high school. When asked how the mentally retarded students performed compared with normal students, three coaches stated superior, six coaches stated very well, eight coaches stated equally, eight coaches stated fairly, and five coaches stated poorly. Some coaches checked more than one ability level which explains the reason for thirty rather than twenty responses.

Table 18
Coaches Ratings of the Educable Mentally Retarded's Ability to Participate in Sports (Scale: 1-2-3 well, 4-5-6 average, 7-8-9 poor)

<table>
<thead>
<tr>
<th>Sport</th>
<th>Baseball</th>
<th>Basketball</th>
<th>Cross Country</th>
<th>Football</th>
<th>Golf</th>
<th>Swimming</th>
<th>Tennis</th>
<th>Track</th>
<th>Wrestling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseball</td>
<td>7</td>
<td>9</td>
<td>1</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Basketball</td>
<td>7</td>
<td>9</td>
<td>1</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Cross Country</td>
<td>3</td>
<td>7</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Football</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Golf</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td>7</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Swimming</td>
<td>8</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Tennis</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Track</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Wrestling</td>
<td>9</td>
<td>8</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
In order to determine how the varsity and junior varsity coaches felt the educable mentally retarded would perform in the specific sport they coached, the investigator analyzed the responses of the coaches to question 14 which asked, "In what sport(s) do you think the mentally retarded could best perform? List in serial order". The results are presented in Table 18. All of the numbers are mean scores. The circled (0) numbers are mean scores that indicate how the coaches felt the educable mentally retarded would perform in the sport they coached. Along with how the coaches estimated the educable mentally retarded would perform in their sports, Table 18 indicates how the coaches felt the mentally retarded would perform in sports other than their own particular sport. As can be seen in Table 18, all of the coaches except for those who coached the individual sports of cross country, track, and wrestling indicated that the educable mentally retarded would not do well in their sports. The coaches of cross country, track, and wrestling felt that the educable mentally retarded would do well on their teams.

**Conclusions**

The coaches indicated that the educable mentally retarded would perform below average or poorly on six of the
nine interscholastic sports sponsored by the school system. The six sports referred to are: baseball, basketball, football, golf, tennis, and wrestling. The coaches felt that the retarded students would be able to perform on an average or above level in the remaining three sports: cross country, track, and swimming. It appeared that the majority of the coaches felt the educable mentally retarded would not do well on the teams they coached. According to the total percentage, a positive relationship was obtained.

This corollary was found to be tenable.

In addition to answering the objective type questions developed by the investigator, the coaches were presented with two subjective questions in which they could express their own feelings. The replies of the coaches to the two questions were judged by the investigator as either positive or negative in nature according to how the coaches perceived the educable mentally retarded. The investigator judged a reply as positive if it showed an understanding on the part of the coach toward the educable mentally retarded's emotional, physical and intellectual characteristics. A reply was judged negative if it did not exhibit this understanding or if it did exhibit undue prejudice toward the educable mentally retarded by the coach. The questions
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used were: A) "What is your concept of a mentally retarded student?" and B) "Are there any additional comments you would like to make in relation to the mentally retarded and athletic competition?"

Quoted representative responses from the coaches to each of the preceding questions follow:

A) "What is your concept of a mentally retarded student?"

Positive statements:

"Rather slow, not exceptionally coordinated, but can be taught."

"Physically very able."

"Slow in understanding and retaining but as human as you and I."

"Academically, mentally retarded students are far behind their age group--in most other respects I find them equal."

"Low I.Q."

"Less thinking power."

"Those with I.Q. below 70."

"One that has difficulty in learning."

"Slow learner."

"Their attention span is shorter than normal student's."

"Unable to deal with abstractions."

Negative statements:

"Nice people but different."
"Usually weaker than the 'average' student."

"Usually much less coordinated."

"They seem to have a deep seated fear of rejection."

"They withdraw from most social situations."

"Don't conform."

"Mentally slow-coordination slow-shows little emotion-physically strong."

"Observable difference from the norm."

"Too easily led."

"A child with brain damage of sorts."

"A person who is not able to learn basic skills needed to take care of one's self."

Discussion

The coaches' replies were judged to be either positive or negative in relation to this first question by the manner in which they described their conception of educable mentally retarded individuals. These "positive" responses indicate that a certain number of coaches to exhibit a rudimentary understanding of the educable mentally retarded students. Their understanding of this type child was mainly focused on the educable mentally retarded's learning abilities. The responses showed that the coaches realized that the retardate did not have the
same level of learning ability as normal individuals. They indicated through their responses that the educable mentally retarded had a shorter attention span than the normal individual, and that this must be taken into consideration when teaching the retarded student. Recognition that instruction must be kept at a concrete rather than abstract level emerged from the coaches positive responses.

The responses of the coaches that were judged "negative" by the investigator indicated that these coaches were not familiar with the concept of mental retardation and what it involves. These negative responses can best be summarized by the following statement made by one coach, on his questionnaire, concerning the retarded, "Nice people but different." No continuity of thought could be found in these coaches' statements that indicated they knew what to expect when confronted by an educable mentally retarded individual. Their conceptions were vague and highly unorganized. Their statements indicate that they have had little or no contact with mentally retarded individuals.

B) "Are there any additional comments you would like to make in relation to the mentally retarded and athletic participation?"
Positive statements:

"Not all mentally retarded students are adapt for physical education classes or varsity sports— not anymore so in some cases than our so-called 'regular students.' However, if a retarded student shows an ability athletically, he should be able to pursue his desire to play or participate as he is able."

"They need as much of a program as everyone else."

"He need not be a star to accomplish some good."

"Slow learners sometimes have a better athletic attitude than fast learners."

"Should have an opportunity to attempt participation in sports."

"The mentally retarded student is often physically the equal or better in natural athletic ability. He is handicapped in that he doesn't think and react as quickly and doesn't think and react as quickly and doesn't adjust to new game situations in most cases."

"I've had boys from special classes on my teams. Some have done well, some poorly, some have adjusted and gotten along well with teammates, others haven't."

"A retarded individual can learn a few rules and moves which he could use successfully."

"The boys here at North who are in the 'Special Education' classes, have done very well in athletics. They are a pleasure and a challenge to work with."

"They have a definite place in the schools athletic program."

"I strongly feel that a student who may be regarded as mentally retarded should be able to participate in sports, this may be the one way this student could achieve excellence and recognition in school."

"Athletics might be the best therapy for such students."
"Some mentally retarded students do very well in interscholastic athletics in the city."

**Negative statements:**

"Encourage intra-mural programs giving the better ones a chance to compete."

"We have never really dealt with the lower levels, they seem not to be able to learn plays."

"Usually they are too old to spend that much time with unless they have great physical power and speed."

"I feel the extreme fast pace of athletics today would preclude sports of any kind on the varsity level."

**Discussion**

As was immediately noticeable, there was a great disparity between the number of positive and negative statements made by the coaches in regard to the educable mentally retarded and athletic participation. This can be explained by the fact that approximately 81 per cent of the coaches felt that the educable mentally retarded should be permitted to participate in either varsity or junior varsity interscholastic athletic competition.

A statement made by one of the coaches that a mentally retarded student "...need not be a star to accomplish some good" appeared to reflect the attitude of all of the coaches who responded to this question (B) with positive remarks. These coaches, through their responses,
showed insight into the social and emotional aspects of athletic involvement and how interscholastic athletics would be a significant activity for the educable mentally retarded. As one coach stated, "Athletics might be the best therapy for such students."

These coaches indicated that athletic prowess varies among the educable mentally retarded as much as it does among the normal students. Some of the educable mentally retarded would perform poorly, while others would be athletic "stars." The coaches who responded with positive statements were of the feeling that the educable mentally retarded students have a definite place in the schools' athletic program.

The few negative comments made by the coaches indicated that these men had two basic viewpoints on the mentally retarded and interscholastic athletic participation. One, they felt that only the best athletes from the educable mentally retarded population should be given the chance to participate in varsity or junior varsity athletics. Too, these coaches indicated that they, as coaches, have not really considered encouraging the educable mentally retarded to participate in interscholastic athletics for various reasons: overagedness prohibited the retardate
from participating for at least three years, the retarded
student did not have the ability to learn and remember
plays and rules, the pace of modern day athletics was too
fast for the mentally retarded to maintain, and the
coaches did not have the time to coach individually the
mentally retarded student.

Conclusions

After the subjective responses were studied and
then compared to the objective responses on the question­
aire, several conclusions were drawn which applied to
those coaches who presented positive or negative responses
to the questions of "What is your concept of a mentally
retarded student?", and "Are there any additional comments
you would like to make in relation to the mentally retarded
and athletic participation?"

The following conclusions concerning the attitudes
of the coaches who presented positive statements seem to
be warranted:

1. These coaches felt that the educable mentally
   retarded should be permitted to participate
   in both varsity and junior varsity inter­
   scholastic athletics.
2. These coaches indicated that they felt the educable mentally retarded had the needed mental and physical abilities to succeed as athletes.

3. The coaches felt that the educable mentally retarded would perform at an average level in athletics.

4. The individuals who gave positive statements about the educable mentally retarded and athletic involvement were mostly physical education teachers, or those individuals who taught two subjects, one of them being physical education.

5. The individuals who gave positive statements had been exposed to adapted physical education classes.

6. Most of these coaches had five or less years of teaching experience.

The following conclusions concerning the attitudes of the coaches who presented negative statements were drawn:

1. These coaches indicated that the educable mentally retarded should not be permitted
to participate in interscholastic athletics, either at the varsity or junior varsity levels.

2. These men stated that the educable mentally retarded would perform poorly on the majority of interscholastic athletic teams they attempted.

3. These coaches indicated that the educable mentally retarded would not get along well with the normal members of the team if they made the team.

4. These coaches had little or no educational background in the area of mental retardation, nor had they had any courses in adapted physical education.

5. The coaches who responded with the negative comments were those coaches who taught primarily in the academic areas.

6. A large number of the coaches who gave negative responses were those who had been in education for a period of more than five years.
An obvious disparity became apparent after viewing the objective and subjective responses of the coaches. The coaches indicated that the educable mentally retarded could and should participate in interscholastic athletic competition. However, 82 per cent of the coaches indicated that they did not think the educable mentally retarded could succeed in their own particular sport. In other words, 82 per cent of the coaches were reluctant to have educable mentally retarded students on their teams.

An interesting finding, after comparing the coaches' objective and subjective responses, was that the majority of these coaches, when asked to present their concepts of an educable mentally retarded individual in relation to athletic involvement, used mental abilities rather than physical abilities as a criteria for interscholastic athletic participation. Hypothesis V indicated, however, that the majority of the coaches were not as sure of the retardates' mental abilities as they were of their physical abilities. This inconsistency could account for so many coaches not desiring educable mentally retarded students on their teams.

The present chapter has been a report of the statistical analysis and interpretation of data pertaining
to this study. Data, discussion and conclusions have been presented concerning the hypotheses and corollaries.

Chapter V, is a report of the summary, conclusions, implications and suggestions for further study.
Summary

The present study was developed for the purpose of investigating the attitudes of coaches and male educable mentally retarded high school students concerning the participation of the latter on varsity and junior varsity interscholastic athletic teams. Specifically, the investigation was designed to determine: 1) How the educable mentally retarded identified with interscholastic athletic competition, 2) The self-perceptions of the educable mentally retarded in relation to their ability to participate in interscholastic athletic competition, and 3) The coaches' reactions to having the educable mentally retarded compete in varsity and junior varsity interscholastic athletics.

The populations for this study were drawn from the Columbus Public Schools. One hundred and fifty-three educable mentally retarded male high school students with
IQ's between fifty and 79 were used in this study. Seventy-two high school varsity and junior varsity coaches were available for this study.

The problem of the study was stated as five hypotheses and three corollaries. The hypotheses and corollaries can be summarized as follows: The educable mentally retarded will indicate that: 1) they are interested in athletics, 2) they desire to belong to either a varsity or junior varsity interscholastic team, preferably football or basketball teams, 3) they do not participate in interscholastic athletics because of fears of failure and ridicule, and 4) they have the physical and mental abilities needed to become athletes. The coaches will indicate: 1) the educable mentally retarded do not have the mental and physical abilities needed to be athletes, 2) the educable mentally retarded should not participate in interscholastic athletic competition, and 3) the educable mentally retarded will perform below average on the majority of interscholastic athletic teams on which they attempt to participate.

The procedure used to test the hypotheses and corollaries was by means of two separate questionnaires, one for the educable mentally retarded students and one for the coaches. The questionnaires were comprised of objective
type questions. The questionnaires were developed by the investigator. Several questions from each of the questionnaires were used to test each hypothesis and corollary. The questions were tallied individually and then converted into percentages. Analyses of the percentages of responses to the questions were presented in terms of their positive or negative relationship to each hypothesis or corollary. A positive relationship was indicative of 75 per cent or more of the respondents agreeing with the hypothesis or corollary as it was stated. A negative relationship indicated that less than 75 per cent of the respondents agreed with the hypothesis or corollary as it was stated.

Research was presented in the areas of 1) the general motor abilities of the mentally retarded, 2) the effect of intelligence on general motor ability, and 3) the value of adapted physical education for the mentally retarded. There was a noticeable lack of literature concerning the educable mentally retarded and his participation in either varsity or junior varsity interscholastic athletic competition.

This study was needed to investigate the attitudes of coaches and educable mentally retarded students concerning interscholastic athletic participation by the educable
mentally retarded in order to answer the question, "Why are there not more educable mentally retarded students taking an active part and interest in the athletic program which has been developed by the school system?" Significant variables might be identified which would enable the educable mentally retarded to become active members on one of the many varsity or junior varsity interscholastic athletic teams within their high schools.

**Conclusions**

This study has been concerned with the investigation of the attitudes of high school varsity and junior varsity coaches and educable mentally retarded high school students on the matter of involvement in interscholastic athletic competition by the educable mentally retarded. To investigate the attitudes of the students and coaches, several hypotheses and corollaries were tested. Conclusions then were presented on both populations.

The following conclusions appear to be warranted with respect to the test of the hypotheses and the corollary concerning the attitudes of the educable mentally retarded high school students (N-153):

1. The educable mentally retarded students
almost unanimously indicated that they had a
very strong interest in athletics of any
nature.

2. The educable mentally retarded students did
desire to belong to either a varsity or junior
varsity interscholastic athletic squad. Those
students desiring to be team members outnumbered those not desiring to become so by a ratio
of two to one. It was also found that the
majority of the mentally retarded preferred to
be members of a varsity rather than junior
varsity interscholastic teams.

3. When the educable mentally retarded were asked
to indicate on which athletic team they would
prefer to be members, the football and basketball teams were the most frequent choices.
Nine of every ten respondents desired to be
football players. Six of the same ten students desired to be basketball players as second
choice.

4. The educable mentally retarded students did
not indicate that a fear of failure and a fear
of ridicule were the primary factors which
inhibited them from participating in interscholastic athletics. It was found that one of the most prevalent factors in preventing the educable mentally retarded from participating in after-school interscholastic athletics was that approximately one-third of the students held after-school jobs. The secondary reason given for not participating in interscholastic athletics was a fear of failure. Disinterest ranked as the third choice. A fear of ridicule was listed as the fourth reason given by the mentally retarded for not taking an active part in interscholastic athletics.

5. When the educable mentally retarded students were asked if they felt they were strong enough and intelligent enough to become athletes, 75 per cent of the respondents indicated that they had adequate strength and intelligence to succeed in interscholastic athletics.

6. Approximately one-third of the educable mentally retarded students, although they did not participate in interscholastic athletics,
were involved in some type of athletic competition not sponsored by the school system. These athletic programs were run by organizations such as boys' clubs, churches, and youth organizations.

7. Twenty-six of the educable mentally retarded students questioned indicated that they had participated on either a varsity or junior varsity interscholastic athletic team within their high schools. This represents 16.9 per cent of the educable mentally retarded population used in this study. This percentage compares with 32.1 per cent of the normal school population that participated in interscholastic athletics.

The following conclusions appear warranted with respect to the tests of the hypotheses and corollaries concerning the attitudes of the varsity and junior varsity high school coaches (N-72):

1. A large majority, 81 per cent of the coaches, indicated that they felt the educable mentally retarded possessed the needed physical skills to be athletes. However, only a small majority,
55 per cent of the coaches, felt that the educable mentally retarded students had the necessary mental abilities needed to succeed as athletes.

2. Contrary to the proposed corollary, the varsity and junior varsity coaches did feel that the educable mentally retarded should be permitted to participate in interscholastic athletics.

3. The coaches indicated that the educable mentally retarded would perform below average or poorly in six of the nine interscholastic sports sponsored by the school system. These sports were: baseball, basketball, football, golf, tennis, and wrestling. The only sports in which the coaches felt the mentally retarded could meet success were cross country, track, and swimming. This is contradictory to the first conclusion. It would appear that the majority of the coaches felt that the educable mentally retarded students had the needed abilities to participate in athletics. However, this conclusion indicates that coaches of several sports were reluctant to
having retardates participate on their teams.

4. The cross country, track, and wrestling coaches were the only coaches who indicated the educable mentally retarded would perform well in their respective sports. The coaches of the remaining sports which were: baseball, basketball, football, golf, swimming, and tennis indicated that the mentally retarded would not perform well in their respective sports.

5. The coaches who responded with positive statements to the subjective questions concerning 1) their concept of the mentally retarded as individuals, and 2) athletic involvement and the mentally retarded were mostly physical education teachers, or those individuals who taught two subjects, one of those being physical education.

6. Those coaches who showed the most insight in understanding the concept of mental retardation were those individuals who had taken a course in adapted physical education.

7. The coaches who taught in the academic areas
had a more negative concept of the educable mentally retarded student than did the non-academic teachers.

8. The younger coaches, those with under five years of experience, were more willing to permit the educable mentally retarded entrance into varsity and/or junior varsity athletics.

**Implications**

The findings of this study point to several implications that can be drawn concerning the attitudes of coaches and male educable mental retardates toward participation in interscholastic athletic competition. The implications are as follows:

1. The educable mentally retarded students expressed an interest in sports, which according to research done by Carroll & Abisheir (1966) paralleled interests exhibited by the mentally retarded's normal contemporaries. However, relatively few educable mentally retarded students actively participate in organized sports programs. This would seem to indicate that there is a lack of either an
intrinsic or an extrinsic motivation to spur the retardate into taking part in these activities. Special education and physical education teachers should take full advantage of the mentally retarded's interest in sports by trying to integrate these students as fully as possible into the school's athletic program. In order to implement this integration, the special education and physical education teachers should take an active part in trying to instill the needed motivation within the students.

2. Students in classes for the educable mentally retarded are usually not socially accepted within the high school environment. Perhaps special education teachers should head the conclusions drawn by the Lynds (1937) in their study of Middletown and encourage the educable mentally retarded to pursue their interests in athletics, if such interest is in evidence, since the athlete is an individual held in high sociological esteem by his fellow classmates. This interest in sports on the
part of the mentally retarded might provide one manner of integrating the retardate into the total school society, thus helping these students gain social acceptance.

3. The structure of the school schedule for the educable mentally retarded in high school almost completely negates interscholastic athletic competition by the retarded. The work-study program causes the student to be away from the high school for part of the day during his senior year. This prohibits him from attending athletic practice sessions. Coaches do not like to recruit individuals who cannot attend the practice sessions or who will not be able to participate in the sport during their senior year in high school due to schedule conflicts. Perhaps the work-study experience for those retardates interested in participating in interscholastic athletics could be scheduled for the morning hours of the school day so that the student could be in the high school during the time that practices and interscholastic events occur.
4. Research done by Beniot (1955) indicated that successful experiences with sports could and would counteract much of the educable mentally retarded's frustrations with academic failures. Therefore, the mentally retarded should be encouraged by special educators and physical educators to develop interests in the sports which are within the range of their physical and mental capabilities.

5. Through this investigation the educable mentally retarded have indicated which sport(s) interest them. It is now the responsibility of special education and physical education teachers to guide the educable mentally retarded toward the sport(s) in which they are interested and have the most chance of meeting success.

6. Fait (1967) indicated that the mentally retarded could be taught the skills of team play well enough to compete in sports such as football, basketball, and baseball. The coaches used in this study disagreed with Fait's findings and indicated that the educable mentally retarded would be better suited for
the individual type sports such as track and cross country. This would imply that the coaches feel the educable mentally retarded could succeed in athletics, but not in the sports mentioned by Fait (1967). The coaches seemed to indicate that the educable mentally retarded athletes would do best in the individual sports of cross country, track and swimming. Therefore, the introduction of these individual sports of the school system's athletic program to the mentally retarded might prove beneficial. These students should be made aware of the fact that they would have a better chance of making one of these teams instead of the football, basketball, or baseball teams.

7. The coaches used in this study indicated that the educable mentally retarded definitely had a place in the interscholastic athletic program. Yet it is interesting that the coaches of six of the nine sports sanctioned by the school system indicated that the educable mentally retarded would not be able to make
the teams they coached. This could imply that the coaches, although they did not say so, were prejudiced toward the educable mentally retarded students in their respective high schools.

8. It was discovered through this investigation that many of the individuals in coaching positions did not understand what was meant by the term mental retardation. Many misconceptions were voiced by the coaches when they presented their own concepts of the mentally retarded student. Since these coaches did not understand the term mental retardation, they perhaps did not understand or realize the abilities of the mentally retarded. This could have been why interscholastic athletic involvement was not further extended to the mentally retarded students within their schools. This would suggest that if educators are to make the mentally retarded or any other exceptional child a total member of his school, all teachers, not only coaches, should be educated through a college or university course or by
an in-service program run by the school system which describes and identifies what the concept of the mentally retarded student involves.

9. Many of the coaches questioned in this study revealed a lack of understanding concerning the mental and motor characteristics of the educable mentally retarded. In order to rectify this problem, perhaps a course in adapted physical education should be made a requirement for any individual who majors or minors in physical education.

Suggestions for Further Study

The conclusions and implications of this study suggest that further research should be extended to:

1. an in-depth study of those educable mentally retarded students who have participated in either varsity or junior varsity interscholastic athletics to determine exactly what factors motivated them to become involved in interscholastic athletics.

2. a study of the existing physical education
programs at both the junior and senior high school levels to determine if these programs are meeting the needs of the educable mentally retarded populations.

3. an evaluation of the techniques used by coaches to select individuals for their teams.

4. more conclusive research into the methods deemed best suited for increasing the general motor abilities of the mentally retarded.

5. a study of the social factors that cause mentally retarded students to choose certain prestige sports. This would shed light on the sociological and psychological motivations of this population.

6. an in-depth study of coaches' conceptions of mental retardation. This could reveal misconceptions these individuals hold about retarded students which cause them to automatically eliminate the educable mentally retarded from athletic competition.

7. a study conducted among normal high school athletes concerning their attitudes on competing with educable mentally retarded athletes.
APPENDIXES
APPENDIX A
To All Athletic Directors:

I am conducting a study for my Ph.D. dissertation which involves high school slow learners, whom I will designate as the mentally retarded, and varsity and junior varsity athletic competition. Enclosed with this letter, you will find _____ copies of a coach's questionnaire. Please distribute these questionnaires to all of your coaches. After the coaches complete the questionnaires, kindly have them return it to you or send it directly to me. When you obtain the questionnaires, if they have not been returned directly to me by the coaches, please send them to me via inter-school mail or regular mail by June 4, 1969. Return them to:

Jeffrey Schilit
Eastmoor Junior High School or 770 Sheridan Park Court
3450 Medway Avenue Columbus, Ohio 43209

Thank you for taking some of your valuable time to assist me.

Sincerely,

Jeffrey Schilit

Note: Mr. Dumaree's permission has been granted for this study.
Fellow Coach:

I am conducting a study for my Ph.D. dissertation which involves high school slow learners, whom I will designate as the mentally retarded, and varsity and junior varsity athletic competition. Enclosed with this letter, you will find a coach's questionnaire. Please answer all of the questions as honestly as you can. After you have answered the questionnaire, kindly return it to your Athletic Director so that he can return all of your high school's coaches questionnaires to me at one time. Or, if you prefer, return it directly to me via inter-school mail or regular mail by June 4, 1969. Return it to:

Jeffrey Schilit
Eastmoor Junior High School or 770 Sheridan Park Court
3450 Medway Avenue Columbus, Ohio 43209

I would appreciate it if you could do this questionnaire and return it to either your Athletic Director or me as soon as possible.

Thank you for taking some of your valuable time to assist me.

Sincerely,

Jeffrey Schilit

Note: Mr. Dumaree's permission has been granted for this study.
APPENDIX C
COACH'S QUESTIONNAIRE

1) Name (optional) ________________________________

2) High School ________________________________

3) Number of years in teaching _____________

4) Teaching subject area __________________________

5) Number of years as a coach _____________

6) Mark the appropriate boxes
   - Varsity coach
   - Junior varsity coach
   - Head coach
   - Assistant coach

7) Check the sport(s) that you coach
   - baseball
   - basketball
   - cross country
   - football
   - golf
   - swimming
   - tennis
   - track
   - wrestling
   - other

8) Have you ever come into contact with a mentally retarded child? YES   NO  If YES, check how:
   - in a family of one of your friends
   - in your school
   - in your academic class
   - in your physical education class
   - in extracurricular activities
   - in religious organizations
   - in volunteer work
   - other

9) If you are a physical education teacher, check how the mentally retarded perform and behave in your physical education class.
   - takes part in class activities
   - do not take part in the class activities
   - are socially accepted
   - are socially rejected
   - are emotionally stable
   - are emotionally unstable
   - behave like the regular students
   - do not behave like the regular students
   - have the requisite motor ability
   - do not have the requisite motor ability
   - have the necessary mental ability
   - do not have the necessary mental ability
   - other

10) If you are a physical education teacher, how do the mentally retarded participate in your physical education class?
    - willingly
    - indifferently
    - unwillingly
11) Have you ever known of mentally retarded athletes?  
YES  NO  If YES, in which sport(s) did they participate:
   baseball  basketball  cross country  football  golf  swimming  tennis  track  wrestling  other

12) Have you ever coached a mentally retarded student?  
YES  NO  If YES, check how he performed in reference to the normal members of the team.
   superior  very well  equal  fair  poor

13) Do you think the mentally retarded should participate in varsity or junior varsity sports?  YES  NO

14) In what sport(s) do you think the mentally retarded could best perform? List in serial order.
   baseball  basketball  cross country  football  golf  swimming  tennis  track  wrestling  none  other

15) If the mentally retarded did participate in athletics, indicate how you think they would do in each sport by checking the appropriate level.

16) Would you coach a mentally retarded student?  YES  NO

17) Do you think the mentally retarded have the necessary motor ability to succeed in a varsity or junior varsity sport?  YES  NO

18) Do you think the mentally retarded have the necessary motor coordination to compete in sports?  YES  NO

19) Do you think the mentally retarded have the physical stamina needed to participate in sports?  YES  NO

20) Do the mentally retarded have the mental ability to learn the rules and regulations of a sport?  YES  NO

21) Do the mentally retarded have the mental ability to learn and retain all of the moves that are involved in the different sports?  YES  NO
22) Should the mentally retarded be allowed to try out for varsity or junior varsity athletic teams? YES  NO

23) Do you think the mentally retarded would integrate, personally, socially, and emotionally, with the normal members of the team? YES  NO

24) Do you think the normals would integrate, personally, socially, and emotionally, with the mentally retarded members of the team? YES  NO

25) Have you had any professional preparation on the mentally retarded? YES  NO

26) Have you had any professional preparation on adapted physical education? YES  NO

27) Should there be a special physical education class for the mentally retarded? YES  NO

28) Do you think the mentally retarded students at your high school like you? YES  NO

29) Do you like the mentally retarded students at your high school? YES  NO

30) What is your concept of a mentally retarded student? (i.e., mental, physical, emotional, etc.)

31) Are there any additional comments you would like to make in relation to the mentally retarded and athletic participation?
APPENDIX D
Fellow EMR Teacher:

I am conducting a study for my Ph.D. dissertation which involves high school EMR's (slow learners) and varsity and junior varsity athletic competition. Enclosed with this letter you will find _____ copies of a student's questionnaire. Please distribute these questionnaires to all of your male students only. After doing so, kindly do the questionnaire as a group, with you reading each question out loud for the students. The questions are self-explanatory, so there should not arise any questions which will cause you any trouble.

After the students have finished with the questionnaires would you please list the students' IQ's on the attached sheet of paper and enclose it with the questionnaires.

I would appreciate it if you could do these questionnaires and return them to me as soon as possible via the inter-school mail or regular mail by June 4, 1969. Return them to:

Jeffrey Schilit
Eastmoor Junior High School or 770 Sheridan Park Court
3450 Medway Avenue Columbus, Ohio 43209

Thank you for taking some of your valuable time to assist me.

Sincerely,

Jeffrey Schilit

Note: Mr. Dumaree's permission has been granted for this study.
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**IQ SHEET**
APPENDIX E
STUDENT'S QUESTIONNAIRE

1) High School ________________________________

2) Grade (circle) 10 11 12

3) Age ___years ___months

4) Height ___ feet ___ inches

5) Weight ___ pounds

6) Do you like sports? YES NO

7) What high school sports do you like?
   - baseball
   - basketball
   - cross country
   - football
   - golf
   - swimming
   - tennis
   - track
   - wrestling
   - none
   - other ________________________________

8) Of the high school sports you like, which do you like best?
   Name the one you like best first, the next best—second, and the third best—last.
   1. ________________________________
   2. ________________________________
   3. ________________________________

9) Would you like to be a member of one of your high school athletic teams? YES NO

10) On which high school athletic team would you like to be a member? Put a 1 in the box next to the sport team you would like to be on most, a 2 in the box of your second choice, and a 3 in the box of your third choice.
   - baseball
   - basketball
   - cross country
   - football
   - golf
   - swimming
   - tennis
   - track
   - wrestling

11) Why would you like to play in the sports you marked in question 10?
   - to be more popular at school
   - to help the school win
   - to have more friends
   - to make my parents proud of me
   - to make me proud of myself
   - to have fun
   - other ________________________________
12) Would you like to play on the varsity or junior varsity team?
   - varsity
   - junior varsity

13) Do you think you could make any on your high school athletic teams? YES NO If you marked YES, which team or teams could you make:
   - baseball
   - basketball
   - cross country
   - football
   - golf
   - swimming
   - tennis
   - track
   - wrestling
   - other

14) Are you now, or have you been on a varsity or junior varsity team? YES NO

15) If you are, or were on a team, tell what team

16) Circle which team it is VARSITY JUNIOR VARSITY if you answered question 15.

17) If you answered question 15, how many years did you play on this team? 1 2 3 4

18) Have you ever tried out for any high school athletic team? YES NO

19) If you are not on any high school team, or if you have never tried out for one of the teams, check the box or boxes that tell why you have not tried out for a team.
   - I do not like sports
   - I am not interested
   - I am afraid
   - I am scared the other students would laugh at me
   - I am afraid I would not make the team
   - I am not allowed by my parents
   - I have a medical reason
   - I have a job after school
   - I do not like the coach
   - other

20) Do you like physical education? YES NO

21) Do you think you could succeed in the sport program at your high school? YES NO

22) Do you think you are smart enough to make a high school sport team? YES NO

23) Are you strong enough to make a high school team? YES NO
24.) Do you think you have the skills needed to be an athlete? YES NO

25.) Do you think you could learn and remember the rules and moves of a sport? YES NO

26.) Do you take part in any sport events that are not part of the high school you go to, such as a recreation center or the YMCA? YES NO

If you marked YES, where do you play? ______________________

If you marked YES, what sport do you play? ______________________

27.) If you do not play on any sport team at the high school, would you like to? YES NO

28.) Do you watch sports on the television? YES NO

29.) If you do watch sports on television, what sports do you watch:

- baseball
- basketball
- cross country
- football
- golf
- swimming
- tennis
- track
- wrestling
- others ______________________

30.) Do you go to the home or away high school sport games?

YES NO HOME AWAY

31.) Do you like the athletes in your school? YES NO

32.) Do you think the athletes in your high school like you?

YES NO

33.) Do you think the coaches like you? YES NO

34.) Do you like the coaches? YES NO

35.) Do you think there should be special gym classes and athletic teams for students who cannot make the varsity or junior varsity teams? YES NO
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