THE EFFECTS OF A CREATIVE MOVEMENT PROGRAM ON THE DIVERGENT THINKING ABILITIES OF MILDLY RETARDED ADOLESCENTS

by

Edward Sheldon Roseman

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Abstract

This study explored the effects of creative movement on the divergent thinking of mildly retarded adolescents. The specific aim was to compare a program in creative movement with one in the plastic arts to study their effects on the divergent thinking of mildly retarded students. Subjects consisted of twenty ninth grade students of John Grant High School, a special school for mildly retarded adolescents, who had enrolled in either Art (N=8) or Creative Movement (N=12).

The main sources of data used were: Forms A & B of the figural part of the Torrance Test of Creative Thinking (TTCT), the Thinking Creatively in Action and Movement test (TCAM), interviews with the students who participated in the creative movement course, a journal kept by this researcher (who taught the creative movement course), and case studies on two students who participated in the creative movement course.

The results of the TTCT and TCAM suggest that no differences were found between the pretest and posttest scores for the Creative Movement group. The Art group showed significant improvement on the Fluency dimension

between pre- and posttesting. Difference scores indicated significant fluctuation in scores for both groups between pre- and posttesting on the Flexibility dimension which questions the reliability of this score as used with mildly retarded adolescents in this study. Results of the student interviews and case studies suggest that creative movement can have an important influence on mildly retarded adolescents. This material and an analysis of the journal entries suggest several limitations to the program. These are discussed at length and suggestions for the future implementation of creative movement programs with mildly retarded adolescents are made.

Consideration is given to the role of divergent thinking in the education of mildly retarded adolescents and various ways in which it can be enhanced. Some suggestions for further research are offered.

Résumé

La présente étude traite des effets du mouvement créateur sur le raisonnement divergent d'adolescents légèrement arriérés. Elle vise tout particulièrement à comparer un programme visant à stimuler la créativité dans le mouvement avec un programme d'arts plastiques afin d'étudier les effets de ceux-ci sur le raisonnement divergent d'étudiants légèrement arriérés. Le groupe de sujets comptait vingt étudiants du John Grant High School, école spéciale pour les adolescents légèrement arriérés; huit étudiants participaient au programme d'arts plastiques et douze au programme de mouvement créateur.

Les principales sources de données utilisées étaient les suivantes: les formulaires A et B de la partie figurative du test de Torrance sur la pensée créatrice (TTCT), le test sur la pensée créatrice dans l'action et le mouvement (TCAM), des entrevues avec les étudiants qui participaient au cours sur le mouvement créateur, un journal tenu par le présent chercheur (qui enseignait le cours sur le mouvement créateur) ainsi que l'étude des cas de deux étudiants qui participaient au cours sur le mouvement créateur.

D'après les résultats des TTCT et TCAM, nous n'avons décelé aucune différence entre les résultats obtenus par le groupe du mouvement créateur avant et après le test. Le groupe des arts plastiques présentait une amélioration significative au point de vue aisance avant et après le test.

La différence dans les résultats indique une fluctuation significative quant aux points obtenus par les deux groupes avant et après le test sur la question de la flexibilité, ce qui permet de douter de la fiabilité de ce résultat appliqué aux adolescents légèrement arriérés qui participaient à la présente étude. Les observations découlant des entrevues avec les étudiants et des études de cas indiquent que le mouvement créateur peut avoir une influence importante sur les adolescents légèrement arriérés. Cette documentation ainsi qu'une analyse des observations notées dans le journal du chercheur indiquent que le programme présente de nombreuses limites. Celles-ci font l'objet d'un examen approfondi et des recommandations quant à la mise sur pied de programmes touchant le mouvement créateur chez les adolescents légèrement arriérés sont présentées.

Une attention particulière est accordée au rôle du raisonnement divergent dans l'éducation des adolescents légèrement arriérés ainsi qu'à diverses façons de le favoriser. Certaines suggestions sont également apportées afin d'orienter des recherches ultérieures.

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Chapter I: Introduction

The Issue

Over three decades ago, Guilford (1950) described two distinct types of cognitive functioning: convergent and divergent thinking. Since that time much research has been focused on the nature of these distinct forms of thought (eg. Guilford, 1977; Thurstone, 1951), on their relation to cortical functioning (Bogen, 1969, 1975; Bruner, 1962), and on techniques for their enhancement with specific focus on improving divergent thinking (Ladner, 1971; Torrance, 1972). Despite such interest, educators have been slow to respond by adapting school curricula to accommodate for the two types of thinking. With few exceptions, traditional elementary and high school programs focus exclusively on convergent or single-answer responses.

Much recent research on creativity stresses the need for a more balanced approach to education which incorporates divergent and convergent tasks (Buzan, 1976; Edwards, 1979). The literature suggests many positive outcomes of student participation in creative activities including increases in overall school achievement (Bruce, 1966), remediation of learning problems (Jaben, 1983), and improvement in overall psychological well being (Bruce, 1966; Canady, 1982). Some

authors have even suggested that severe problems in emotional and cognitive functioning may result if creative urges are repressed (Razik, 1970; Torrance, 1962).

In his initial exploration of creativity and intelligence, Guilford (1950) found a relationship between creativity and IQ among subjects of average or subaverage intelligence, though no apparent relationship at the higher end of the intelligence scale. While the relationship between creativity and intelligence has not been clearly defined, empirical evidence suggests that creativity is in some ways dependent upon intellectual functioning. In rare instances, individuals with extremely low intelligence have been found to possess highly developed creative abilities (Hill, 1978); however, the norm suggests that individuals of sub-average intelligence are also lacking in creativity. Studies on the cognitive processes of retarded individuals have referred to a tendency towards perseveration and a lack of spontaneity as hallmarks of their thinking (eg. Spitz, Carrol, & Johnson, 1975; Zigler, 1973). While researchers cannot agree as to why this is the case, there appears to be agreement as to the relative absence of divergent thinking among retarded subjects.

Individuals charged with the education of retarded individuals focus their efforts on enhancing their students' adaptive behavior in order to prepare them to cope with their environment (Brolin, 1976; Kolstoe, 1970). For mildly

retarded individuals, who make up the largest percentage of this group, adaptive behavior involves being able to find employment, to budget wages, and to adapt to changes in new technology and the complexities of modern life. While the literature has demonstrated that these individuals are capable of such adjustment (Gold, 1972; Michal-Smith, 1951; Wolfensberger, 1967), it also underscores the fact that far too many are failing to make successful post-school adjustment. It has been suggested that this failure is due largely to an inability to cope with the unanticipated or the novel situations frequently encountered in daily living. Undoubtedly their lack of divergent thinking skills hampers them in their attempts to find solutions to unexpected problems.

There have been a number of successful attempts at increasing mentally retarded subjects' divergent thinking ability. Several methods have been successfully employed in an attempt to develop these skills. These methods include such activites as brainstorming (Ladner, 1971) and modelling (Arem, 1974). Dance and movement programs have provided evidence which suggests that they can help retarded individuals learn how to cope better with their environment (Rogers, 1977; Goldstein, Mischio, & Minskoff, 1969).

Movement classes which utilize an open-ended approach are often referred to as creative movement programs. As opposed to programs in conventional dance, creative dance

programs contain no predetermined steps or style. Teachers use suggestive exercises and cues to stimulate pupils to explore movement. Ideas and movements are products of the participants' inspiration and spontaneity. Although few researchers have looked into the relationship between creative movement and divergent thinking, much of the research seems to imply that such a relationship exists (Brennan, 1976, 1982).

Hypotheses

This thesis represents the intersection of three areas: the study of divergent thinking, the study of divergent thinking in retarded individuals, and the study of the effects of creative movement. It seeks to explore the effects of a creative dance program on the divergent thinking of retarded adolescents. Specifically, its aim is to test the following hypotheses:

1. That creative movement can improve the divergent thinking of mildly retarded adolescents.
2. That creative movement can be as effective as "the plastic arts" in improving the divergent thinking of mildly retarded adolescents.
3. That the divergent thinking of mildly retarded adolescents can be increased through participation in both creative arts programs.

It is anticipated that the investigation of these hypotheses will shed much light on the area of divergent thinking with specific reference to the role creative movement can play in the education of mildly retarded adolescents.

Rationale

Mentally retarded individuals are notedly deficient in both their convergent and divergent modes of thinking. Since special schools for retarded students emphasize primarily the development of convergent and vocational skills, it appears that there is a lack of attention being placed on the divergent thinking processes of these students. As well, mentally retarded individuals are described as being deficient in their adaptive abilities. Literature on divergent thinking has provided evidence which demonstrates that increasing one's divergent thinking can lead to many positive changes which are essential in order for an individual to cope with society and its ever increasing complex demands. It is therefore important to explore ways in which divergent thinking of mentally retarded individuals can be enhanced.

Creative movement is an area which has presented itself as a valuable psychoeducational technique with students who are not reached easily by conventional methods (Fowler, 1977; Gray & Mager, 1973). Many studies undertaken in this

area suggest that retarded individuals profit in various ways from participation in creative movement experiences (Upton, 1979). This thesis offers an opportunity to explore the effects of a nonverbal, non-convergent program geared specifically for mildly retarded adolescents.

In the next chapter, the literature on creativity, divergent thinking, creative movement, and retardation will be examined. The aim will be to synthesize this literature to arrive at a better understanding of the nature of divergent thinking abilities in retarded individuals and the potential uses of creative movement to enhance these abilities. A subsequent chapter will focus on the mechanics of designing a creative movement program for mildly retarded adolescents.

Chapter II: A Theoretical Framework

This study undertakes an exploration of the effects of a creative movement program on the divergent thinking of mildly retarded adolescents. The relationship between the Arts and divergent thinking has been long standing though somewhat non-specific. Recently, Eisner (1982) has described a number of potential consequences of art activity which lead to qualitative changes in the child's ability to think and perceive. Eisner postulates that among the first things that children learn is that they can create visual images. These conceptions are formed by a process in which ideas are abstracted or created. Montamedi (1982) describes the creative journey as purposeful and says it evolves through seven stages. In transition from one stage to the next, the pursuer's relation to the phenomenon is said to undergo change as new insights are gained. Sampascual Maicus (1982) also views creativity as a special structure of psychological functions. According to this approach, all individuals possess similar psychological functions that govern their various thought processes. Eisner (1982) adds to this the belief that since some aspects of artistic thinking are inherent whereas others are culturally determined, education in the Arts is a vechicle through

which both one's culture and one's cognitive development can be enhanced.

Creativity

Confusion and disagreement as to a precise definition of creativity seem to have impeded research on the relationship between participation in the Arts and psychological functioning. It is only within the last few decades that research in education has begun to look at creativity as an entity separate from intelligence. Typically, the area of creativity has been studied by identifying highly creative individuals and comparing them to a suitable comparison group (Katz & Giammelli, 1982). Terms such as "creative genius" and "intellectual genius" have often been used interchangeably. Much of the early work on creativity came from psychologists such as Thurstone (1951) and Guilford (1950) who were investigating the components of intelligence. They applied the same theoretical orientation to creativity that they had developed for intelligence. The techniques employed in identifying a creative individual depended either on the judgements of experts or on scores obtained on psychometric tests developed primarily for the measurement of intelligence. Attempts to construct tests of creativity eventually met with opposition as they were based upon

subjective criteria. Without a universally agreed upon notion of creativity to provide a theoretical framework for such measurement devices, most of these tests remain informal measures at best (Bolton, 1972).

Katz and Giammelli (1982) offer what they feel to be a consensually shared notion of creativity as something which is related to heightened sensitivity to one's environment and to a lessening of prejudicial thought. While there exists no universally accepted definition of creativity, it appears that most definitions include some mention of terms such as novelty and originality. According to the conventional view of creativity, an idea is considered to be creative if it is original or new to the population or society at large. Guilford (1977) has argued against this view vehemently. He states that

> the creative idea is one that the thinker never had before; it is new to that person. We could never determine if an idea is entirely new in the whole population. We stand a much better chance of showing that it is new to the individual (p.160).

Here the issue of subjectivity remains an essential part of his definition of creativity.

Many definitions of creativity also imply that the product of a creatively talented person should attain some

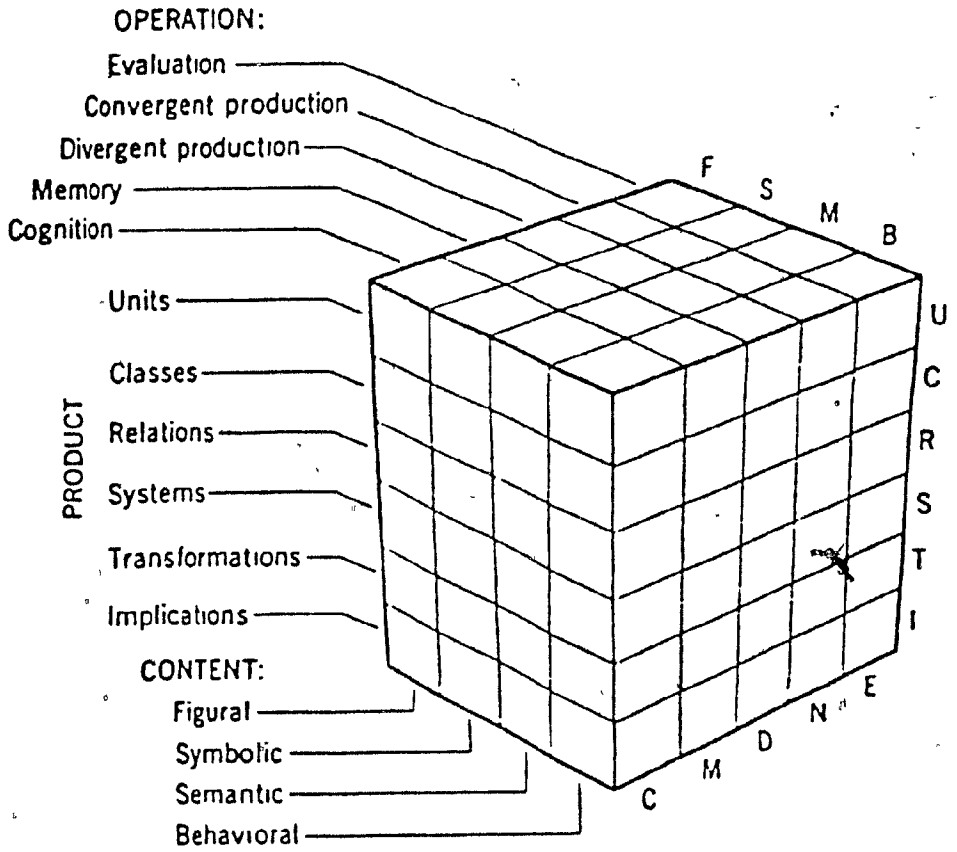
degree of scientific or aesthetic worth. Such demands make objective measurement difficult and further contribute to the imprecision in defining creativity. Vernon (1970) points out that such qualitative evaluation of an individual's creativity must be made, however. For instance, a child's drawings, a father's gardening, and Einstein's theories all may be seen as creative acts, though they should not necessarily be rated as equally valuable to a society. A valid distinction must also be made between the merely eccentric and the creative (Barron, 1969). Since science does not claim to deal with social values, Guilford suggests that within the realm of scientific investigation such subjective distinctions should not be made. Barron acknowledges the difficulty of making value judgements, but he feels that it is essential to distinguish between the creative and the eccentric despite the lack of objectivity in the judgement process. Ganesan and Subramanian (1982) feel that it is also necessary to distinguish between creativity and originality or innovativeness. They have found that there exists a moderate relationship between creativity scores and ratings of innovativeness which suggests that creativity is something more than just original or innovative thought.

Guilford (1950) put fourth a new concept that allowed for a more scientific method of studying creativity. He used a trait-factorial approach to develop what he referred

to as a taxonomic theory of intelligence. In this approach, factor analysis is used to identify an individual's distinct characteristics or "traits" and to separate distinct intellective factors (Taylor, 1975). Guilford (1956, 1959) used this technique to help create a model which he calls the "structure of intellect". He views intelligent behavior as an act which is comprised of three parts (see Figure I).

Figure I

Guilford's Structure of Intellect Model



(Guilford, 1959, p.470)

Intelligent behavior begins with a set of stimuli which he refers to as "content". These stimuli must then be acted upon. Guilford calls this action an "operation". Finally there is a "product" which is the result of this action. Guilford attempted to list every possible category of content, operation, and product. Four content areas were created: figural, symbolic, semantic, and behavioral. From these content areas, six product types could evolve: units, classes, relations, systems, transformations, and implications. It is under the category of operations that creative ability comes into play. The first of the five types of operations Guilford lists is cognition. This is the process of discovery, rediscovery, and recognition. Then there is memory or the retention of what is cognized. Two kinds of productive thinking operations are described: convergent, which leads to a predetermined, conventionally best answer, and divergent, which involves thinking in different directions as one searches for a variety of possible solutions. Finally there is evaluation whereby decisions of goodness, correctness, suitability, and adequacy are reached.

Divergent Thinking

Guilford's distinction between convergent and divergent thinking made a great impact on creativity research.

Convergent thinking is seen as the gathering and focusing of one's thoughts to reproduce learned responses in new or old situations (Torrance, 1963). It involves the generation of ideas and facts from previously known information or what Galanter (1967) refers to as "the usual and expected response on a test". Divergent types of activities, on the contrary, depend minimally on known information. Divergent thinking is defined as the ability to provide multiple unique responses to a single stimulus (Bolton, 1972). In terms of the end results, convergent thinking implies a single, already ascertained right response. Divergent thinking involves "fluency, flexibility, originality, and elaboration" of one's ideas, opinions, and attitudes in a spontaneous, discontinuous fashion (Mehdi, 1974). These aspects of divergent thinking will be elaborated upon later in this thesis.

Since Guilford first identified the process of divergent thinking, there has been much debate as to its exact relation to creativity. Many people have equated these terms although some researchers such as Butcher (1972) feel strongly that this is a misconception. He suggests that various measures of divergent thinking do not inter-correlate well enough to justify the assumption of a general factor of divergent thinking. He argues that a general factor of this kind is not readily distinguishable from the corresponding factor of convergent thinking.

Although Guilford's concept of divergent thinking does not solve all of the problems of imprecision, it does appear to be more precise than any previous definition of creativity. With the distinction between convergent and divergent thinking thus made, convergent thinking came to be identified with intelligence and measured by well-known intelligence tests, while divergent thinking gave the most obvious indication of what is generally understood by the term "creativity" (Mehdi, 1974). The term divergent thinking does not take the place of creativity nor does it exist as a well defined aspect of creativity. Logically these two terms seem to be closely related and even though their exact relationship has yet to be discovered, the concept of divergent thinking gives researchers a workable tool to further their scientific investigation of the field of creativity. While the present study focuses on divergent thinking skills, the term "creativity" is nevertheless utilized frequently since these terms are often equated and used interchangeably in the literature discussed here.

There exists a fascinating relationship between creativity as measured by divergent thinking tests and intelligence as measured by IQ tests. Guilford (1967) found a substantial correlation between creativity and IQ among subjects with low ranges of IQ, but among subjects whose IQ is 120 or above there was virtually no correlation. He concluded that IQ appears to set an upper limit on creative

potential for individuals of average or lower intelligence. What emerges from this research is that an average or higher IQ appears to be a necessary but insufficient precondition for high creativity. The implicatons of this research for our understanding of divergent thinking in retarded individuals will be discussed in a later section of this chapter.

Initially most of the work on creativity was done with children who had high IQ's. It was believed that such children had greater creative potential because creativity was generally believed to be an aspect of intelligence. More recently the relationship between intelligence and creativity has been called into question (Guilford, 1967; Torrance, 1962). Increasingly, children of average intelligence have been used as subjects in studies on creativity and recently there have been a number of studies which have begun to investigate special populations once believed to be devoid of creative talent. Although these studies are few in number, they may represent the beginning of a new trend. Some of the successful attempts at improving the creativity of handicapped subjects have used samples from special populations such as learning disabled children (Bloom, 1978; Graham & Sheinker, 1980; Henson, 1974), people with minimal cerebral dysfunction (Zelina, Sabolova, & Kamensky, 1979), slow learners (Landman & Schroder, 1981; Sharpe, 1976), disadvantaged children (Goor

& Rapoport, 1977), emotionally disturbed children (Kandil, 1980; Paget, 1979, 1980, 1982), deaf children (Silver, 1977), and mentally retarded children (Arem, 1974; Ladner, 1971; Paney & Horrocks, 1967). The issue of creativity in retarded individuals will be presented later in this chapter.

While achievement seems to be quite strongly related to IQ (Mehdi, 1974), the relationship between achievement and creativity is less clear. Most IQ tests are concerned with convergent thought and school systems traditionally seem more concerned with developing convergent or "closed" thinking skills at the expense of divergent or "open" modes of thinking (Bartlett, 1958). Nearly all achievement tests are of a convergent nature (Vernon, 1970). As Razik (1970) describes the situation:

> Both intelligence and achievement tests have thus been tied to the narrow limits of those abilities which the school establishment values for its operation as a given social system. Divergent and creative responses and abilities not fitting to the school norm have not been measured, operationally valued nor rewarded in systematic ways. The development of the student as a growing creative creature has been neglected (p.158).

This does not necessarily imply that school achievement tests discriminate against creative students as much as it

underscores a lack of divergent thinking tasks in the regular school curricula.

Reports have shown that teachers generally prefer students with high IQ's over highly creative students. Getzels and Jackson (1962) asked teachers to rate the students in their school as to how much they would enjoy having high IQ or highly creative students in their classrooms. The students with high IQ's were clearly rated as more desirable than the average student, whereas highly creative students were not. This distinction occurred despite the fact that both the high IQ and the creative students were equally superior in achievement. The reason for this distinction might be due to the fact that creative students may be less conforming to teachers' standards of proper behavior. The students themselves were given the Outstanding Traits Test and the personal qualities that they valued highly for themselves were compared with the personal qualities that they believed teachers preferred for them. Again there was a major difference between the two groups. For the high IQ group, the correlation between the qualities they preferred and those which they believed teachers preferred was +.67. For the highly creative group the correlation was -.25. The qualities that the high IQ students preferred for themselves were also highly correlated (+.81) with the personal traits believed to be predictive of adult success. For the highly creative group

the correlation was extremely low (+.10). This suggests that highly creative students perceive themselves as markedly different from what their teachers would like them to be and they appear to be less success-oriented according to conventional standards. If this is the case then one might expect these perceived differences to translate into barriers between teachers and their more creative students.

Positive emotional adjustment and good mental health have been postulated to be strongly correlated with creativity. Unfortunately some have theorized a highly positive correlation while others have theorized a highly negative correlation. Some researchers have found a close correspondence between lower scores in divergent thinking and the presence of thought disorder (Al-Issa & Robertson, 1964; Torrance, 1970), while others make the claim that a strong stereotype exists within certain psychological literature linking creativity with psychopathology (Eisenman, 1969; Johnson & Gloye, 1958). Artists such as Van Gogh or Nijinsky are often cited as examples to support this stereotype.

Barron (1970) describes the creative or original person as having a more complex ego-synthesis as well as a greater personal scope. Furthermore he states that creative people are more self-assertive and dominant. According to MacKinnon (1967), creative people tend to have a relative absence of repression and suppression as mechanisms of

impulse control. McGuire (1967) describes 'creative people as having a tendency to be emotionally well-adjusted. He maintains that they have an "outgoing optimism", "creatively intelligent independence", and a high degree of self-discipline. Perhaps the view which suggests most strongly that creative ability is an expression of mental health is put fourth by Torrance (1962). He asserts that repression of creative needs may result in an unrealistic or uncertain self-concept and possibly lead to severe learning disabilities, behavior problems, delinquency, neurotic conflicts, psychoses, and other types of personality disorganization. Because schools seem to place such a high value on convergent thinking skills, Razik (1970) believes that the usual practices in schools damage creative ability by neglecting its development, possibly leading to some of those negative outcomes cited by Torrance.

It would appear that academic achievement can be improved through the development of divergent thought processes in students. Cropley (1967) suggests that "teaching techniques which utilize students' creative thinking abilities promote more effective and efficient learning than those methods which ignore them"(p.83). Utilizing one's divergent thought processes tends to leave the self open to many possibilities whereas convergent thinking limits one's focus to only one possible correct answer to a given problem (Mehdi, 1974). There have been a

number of successful attempts at increasing subjects' divergent thinking skills. Torrance (1972) reviewed the results of one hundred forty-two studies which attempted to teach creativity with a variety of methods and found that seventy-two percent of these claimed to be successful. As these studies used a wide variety of measurement techniques, the variability in results may be due to the fact that they did not all measure the same thing. In addition, the success rates varied depending on the type of intervention used. Despite these possible limitations, these results offer strong support for the view that divergent thinking processes can be enhanced through direct intervention.

Mansfield, Busse, and Krepelka (1978) question much of this research arguing that most divergent thinking tests commonly utilized to measure creative ability are probably influenced by such factors as persistence and an understanding of the kinds of answers that receive high scores. Perhaps the reason for documented improvements after training is merely an increased familiarity with the unconventional tasks typically found on tests of divergent thinking. Divergent thinking tests, which focus on the variety and magnitude of responses, appear much more dependent on motivation than do convergent tests generally requiring a single response. As the individual taking such tests is required to give as many different answers as

possible, persistence, fatigue, and interest become very influential.

Several methods traditionally have been employed in an attempt to develop divergent thinking. These methods include such activities as brainstorming (Ladner, 1971), art (Edwards, 1979), and music instruction (Andress, 1980). While a review of the literature has failed to yield any studies focused specifically on the effects of creative movement on divergent thinking, several studies have spoken of its effects on creativity (eg. Brennan, 1976; Laban, 1971). The applications of creative movement and its effects on psychological functioning are explored below.

Creative Movement

Movement classes which utilize an open-ended approach are often referred to as creative movement programs. Programs in creative dance which utilize a similar approach generally focus on specific steps, concepts, body lines, and so on. In creative movement, there exists no preconceived or dictated style, thus the dancer is open to an unlimited range and variety of movements. Teachers use suggestive exercises and cues to stimulate pupils to move. As creative movement demands only spontaneity, it is more congruent with the basic teachings of Torrance as a means to improve divergent thought. Laban (1966) and Bruce (1966) view dance

as an innate urge as they claim that all children perform dance-like movements unconsciously as a form of exercise and emotional outlet. They propose that an important educational aim should be to fulfill students' needs to create and to express themselves. Bruce claims that an educational balance between the development of intellect and the motivation of creativity is desperately needed.

Many benefits have been noted to result from participation in dance. Few researchers have looked at the relationship between creative movement and divergent thinking, however, much of the research appears to imply that such a relationship exists. The majority of studies in this area speak of increasing the child's freedom of thought, spontaneity, and, in general terms, creativity through allowing the child a chance to explore and become more conscious of his or her body and its potential actions in relation to the environment (Brennan, 1982). Torrance (1972) has suggested creative movement as one of several methods of measuring a child's creativity. Kinda and Hand (1980) charted dance and art developmentally according to Piaget's cognitive-developmental stages. The authors offer creative experiences in both art and movement for specific age levels. They show a logical progression of skills in the Arts which follows the child's cognitive development. The Arts are viewed as a means of discovery learning which

can enhance cognitive development as well as function to reinforce this development.

Creative movement programs of this nature have frequently been utilized with special populations. Laban (1971) notes that "there exists a part of dance, and indeed of any artistic expression which, if purposefully applied, can have an eminent education and remedial value" (p.7). Since creativity involves the physical as well as the mental aspects of the self, dance can be used to reach children who are not reached easily through verbal means alone. Thus creative movement appears to offer a means to engage and involve children in learning who might not otherwise be so inclined. It is open to all types of individuals regardless of level of skill or sophistication. For those with difficulty in expressing themselves verbally, creative movement can be seen as a way of giving them more confidence in themselves and may eventually carry over into other situations (Fowler, 1977). Lubin (1980) found creative movement to have major effects on the creativity of hearing-impaired children. A group of preschool hearing-impaired children who were exposed to twenty days of guided movement exploration appeared to improve significantly in motor creativity as compared with a matched group of controls. Fowler (1977) suggests that creative dance can also be used to help children with different types of developmental problems. She states that it can be a

useful tool in educating students with physical and mental disabilities by helping them overcome or cope more effectively with their handicaps.

Thinking and Retardation

Mental retardation is defined as significantly subaverage intelligence coupled with a significant deficit in adaptive behavior (Kirk, 1962). By adaptive behavior is meant "the effectiveness or degree with which an individual meets the standards of personal independence and social responsibility expected of his age and cultural group" (Grossman, 1973, p.11), thus the criteria for mental retardation varies according to age as well as cultural and geographical factors. Much of the literature on mental retardation has suggested that the vast majority of mildly retarded individuals are physically and cognitively capable of becoming contributing members of society (Brolin, 1976; Kolstoe, 1970). In some instances full independence can be achieved as these children's academic skills are improved through special education programs (Upton, 1979). Traditionally this potential appears to have been untapped as many mildly retarded persons remain burdens on society (Brolin, 1976; Kolstoe, 1970).

Individuals referred to as mildly retarded function intellectually at a range two to three standard deviations

below the mean. More specifically, they usually have IQ's ranging between fifty-five and sixty-nine, though in practice individuals enrolled in programs for the mildly retarded have IQ's ranging from fifty to eighty or above. As noted above, Guilford (1967) has found a substantial correlation between creativity and IQ among subjects with low ranges of IQ. Aside from exceptional cases it is generally accepted that mentally retarded individuals have a lower creative potential than do persons of normal intelligence. The literature on creativity and divergent thinking reviewed above has offered tentative support for the notion that enhancing divergent thinking might lead to more effective intellectual functioning. It also appears to suggest that divergent thinking can lead to positive changes in emotional and interpersonal functioning which are central to one's adaptive behavior. A question facing educators is whether or not mildly retarded individuals are cognitively capable of improving their divergent thinking abilities or other useful skills which are necessary to cope with the increasing demands for adaptive behavior posed by today's complex society. A number of studies which have dealt with the question of learning and mildly retarded individuals will be reviewed.

A major issue in the study of cognitive capabilities has been the relationship between learning and intelligence. Cognitive competence can be defined as the ability to learn

to adapt to society and is measured by performance on tests of intelligence. Conversely, an individual is seen as cognitively incapable if he does not possess the ability to learn the skills necessary to meet the demands of society. While retardation is characterized by a deficit as measured by IQ scores, it is not clear what this implies in terms of the ability of retarded individuals to learn. Clearly subjects of average intelligence tend to be superior to retarded individuals of similar chonological age (CA) on tests which involve logic or other forms of higher order learning (Gerjuoy & Winters, 1965; Spitz & Nadler, 1974). According to our present notion of IQ, individuals matched according to mental age (MA) should perform at similar levels, thus most mildly retarded adolescents and adults should perform at a cognitive level comparable to preadolescents of average intelligence. A number of studies indicate that this is not always the case and offer varying explanations for the existence of this discrepancy (eg. Spitz, 1973; Zigler,1973). These will be explored in some detail below.

The literature on learning and intelligence contains many studies which have compared groups of different intelligence while controlling for MA. The results of these studies have led to two somewhat discrepant views of intelligence in retarded individuals: difference or defect theories and developmental theories (Zigler, 1973).

Zeaman and House (1967), in surveying the literature on the relation of learning and intelligence, found that most studies report a positive correlation in cases where a complex form of learning was employed (eg. discrimination or verbal learning). Their evidence implies that the correlation between IQ and learning increases as the IQ differences between MA controlled groups increases and as the learning tasks become increasingly more complex. Work in the area of more complex aspects of learning, most notably the area of problem solving, has attempted to assess the differences between retarded and nonretarded individuals. Generally most studies have supported the hypothesis that retarded individuals are deficient in tasks requiring logical foresight where the retarded and nonretarded groups have similar MA's. Byrnes and Spitz (1977) also found retarded subjects to be seriously deficient in logic. They noted that the retarded individuals in their study evidenced a great deal of perseveration of correct responses and committed far more violations of the rules than did nonretarded children matched for MA. Their retarded subjects performed at least three years behind MA expectations, a finding which supports a defect theory of mental retardation. This finding is supported by other studies in the area of problem solving (Spitz & Nadler, 1974; Spitz & Winters, 1977) and in the area of verbal problem solving (Goodstein, Bessant,

Thibodeau, Vitello, & Vlanhakos, 1972). While none of these studies yields such large differences between the two groups, they consistently report differences between MA and performance of retarded individuals to be at least one-and-one-half to two years.

In attempting to account for such differences in the performance of retarded adolescents and adults as compared to nonretarded individuals, Spitz, Carrol, and Johnson (1975) explored the issue of hypothesis testing. They suggest that there are two different classes of hypothesis testing: prediction hypothesis, in which the subject selects and tests various hypotheses in an attempt to solve the problem, and response-set hypothesis, in which the subject evidences a preference for one stimulus over another. They concluded that retarded individuals select from a relatively small universe of prediction hypotheses and that the response-set hypotheses are high in their hypothesis hierarchy. Since perseveration, as well as alternation, is characteristic of response-set hypothesis, this theory might account for the frequent occurrence of perseveration in studies examining the performance of retarded individuals on traditional learning tasks (eg. Byrnes & Spitz, 1977). Gerjuoy and Winters (1965) found perseveration to be evidenced most frequently in subjects with the lowest IQ's.

Spitz (1973) found no difference in iconic memory between retarded and equal MA nonretarded subjects though he

suggests that differences do occur at the retrieval stage. It would also appear that retarded individuals do not discover redundancy as readily and are thus unable to reduce their memory load (Spitz, 1973, 1976). Gruen and Korte (1973) found that retarded individuals respond more quickly than nonretarded individuals in trials where more possible choices could be made. The rapid response rate suggests that in these instances there was too much information to be processed. The mentally retarded appear to be slower in comparison rates in classifying stimuli (Stanovitch, 1978) and it has also been suggested that they scan short-term memory at a slower rate that do nonretarded individuals (Ellis, 1970). This is consistent with Spitz's (1973) conclusion that differences in information processing occur in the retrieval stage. In general, the theories reviewed above emphasize cognitive factors which show differences in performance between retarded and nonretarded individuals matched for MA. They tend to attribute these differences to defective cognitive processes and thus can be characterized as defect or difference theories of mental retardation (Zigler, 1969).

In contrast to this approach, Zigler and his colleagues propose a theory which attempts to explain differences between retarded and nonretarded individuals of equal MA in terms of motivational and emotional differences. Performance on a task is not seen as purely a measure of the

individual's cognitive ability, but as a reflection of his motives and general attitudes toward problem solving as well (Zigler, 1973). While some have referred to this as a motivational theory (eg. Scott, 1978), Zigler stresses that it includes both cognitive and motivational components and chooses to call it a developmental theory (Zigler, 1969).

He refers to the fact that retarded individuals tend to approach problem solving with an atypically high degree of outer-directedness, thus they do not attempt to use their own cognitive resources as readily as do their nonretarded peers. A number of studies illustrate that retarded individuals are far more easily influenced by experimenter's cues than are nonretarded individuals (Sanders, Zigler, & Butterfield, 1968; Zigler, 1973). They attribute their findings to the fact that non-institutionalized retarded individuals have experienced more failure than nonretarded and institutionalized retarded individuals and are therefore less confident in their own abilities and more apt to rely upon external models. Turnure and Zigler (1964) found that while retarded children tended to be the most imitative, all children became more imitative when faced with frequent failure. Moreover, nonretarded children in the failure condition evidenced about the same degree of imitative behavior as did the retarded children in the success condition.

Little has been resolved in terms of which theory best

explains the differences in performance on learning tasks between retarded and nonretarded populations. The question remains as to what relation, if any, exists between the motivational factors posited in the developmental theory and the evidence which suggests information processing deficits in the retarded. Zigler (1973) found that oversensitivity to external models resulted in a characteristic lack of spontaneity and creativity. This finding is supportive of Guilford's (1967) work which suggests that there exists a substantial correlation between creativity and IQ. It is also consistent with the previously reviewed work on hypothesis testing which showed that retarded individuals choose from a limited range of hypotheses (Spitz et al., 1975). Whether this preference for response-set hypothesis is due to a learned pattern based upon previous failure or to an inability to process the amount of information necessary to test hypotheses adequately is still unresolved.

While the defect or difference theories and the developmental theories differ in their views of cognitive processes in retarded individuals, both focus on differences in convergent thinking between retarded and nonretarded subjects. Literature reviewed elsewhere in this chapter has suggested that the divergent thinking skills of mentally retarded individuals are also restricted as a result of their low IQ's. Several studies have attempted to explore the effects of a variety of curricula on the divergent

thinking of retarded individuals. A two-year study by Goldstein et al (1969) found that a socially orientated curriculum using an inductive teaching style (open-ended tasks) achieved positive changes in the thinking of retarded subjects. Specifically they found changes in personality and cognitive characteristics consonant with the critical thinking and independent behavior necessary for successful adult functioning. Ladner (1971), utilizing a brainstorming technique which allowed pupils' ideas to flow freely, demonstrated that it was possible to enhance the creative performance of institutionalized mildly retarded students. Verbal functioning was found to be significantly improved and was felt to be a reflection of a transition from convergent to divergent thinking. Arem (1974) studied the effects of visual modeling and verbal modeling of a creative thinking strategy on the creative performance of mildly retarded children. Results from the figural (drawing test) form of the Torrance Test of Creative Thinking (TTCT) indicated that verbal modeling and particularly visual modeling effectively enhance creative performance of mildly retarded children in nonverbal areas.

Research studies utilizing movement have shown that such programs can be therapeutic. In describing a one year dance therapy program for mentally retarded adults and adolescents, Rogers (1977) concludes that movement programs provide an essential nonverbal dimension which can help

retarded people learn how to deal more effectively with their environment. Many other studies have explored movement with the mentally retarded. Benefits cited include: increased physical awareness (Calder, 1972; Moran, 1977; Upton, 1979), improvement of musculature and of postural defects (Robinson, Harrison, & Gridley, 1970), increased awareness of music and increased abilities in rhythm (Crain, 1981; Crumbliss, 1978), psychological and emotional growth (Lloyd, 1978), and improvements in behavior and academic performance (Calder, 1972).

In the 1960's, there appeared to be much dissatisfaction among educators with regard to aims, philosophies, teaching methods, and techniques surrounding the education of mildly retarded individuals. In terms of curriculum, the Arts began to have a considerably greater impact. Physical and creative activities in particular were elaborated upon and took on a greater proportion of these children's educational activities (Upton, 1979). Only recently has the field of dance expanded into unexplored areas having possible positive therapeutic implications. There have been many studies undertaken through music and physical activities which suggest that mildly retarded children do profit from physical and creative experiences (Cratty, 1974; Upton, 1979).

The next chapter deals with the design of a creative movement program geared specifically for mildly retarded

adolescents. The theoretical basis for creative movement is explored as well as the problems idiosyncratic to tailoring the traditional movement curricula to fit the special needs of these students.

Chapter III: Theoretical Basis for the Program

The aim of the present study is to explore the effects of a program in creative movement on the divergent thinking of mildly retarded adolescents. The preceding review of literature has underscored the lack of data on the effects of creative movement programs on divergent thinking, as well as the lack of information available on the use of such programs with retarded individuals. As there are few established creative movement programs which outline methods of instruction, particularly for this special population, the movement program utilized in the present study was based upon information derived from several sources. Most important among these sources are Laban's (1966, 1971) principles of dance and it's instruction and Mager's (Gray & Mager, 1973) work on improvisational drama and movement with emotionally disturbed adolescents. In addition, this reseacher's personal experience and background in both dance and education were extremely useful in making decisions regarding the content and implementation of this program. The theoretical bases for the program are discussed below as well as the various issues which were confronted by this researcher in the formulation of a creative movement program for mildly retarded adolescents.

Theoretical Framework

Rudolf Laban is acclaimed for his overwhelming contribution in the field of modern educational dance. His ideas have permeated the world of movement and the minds of its teachers. Since it appears that all children perform dance-like movements unconsciously as a form of exercise and emotional outlet, Laban (1966) views dance as an innate urge. He suggests that the creative movement teacher's primary task is to develop this urge by making children aware of some of the principles governing movement. A second important educational goal should be to preserve the individual's spontaneity of movement beyond the childhood years. A final major task involves the fostering of creative expression. Laban believes these goals can be achieved through the introduction of dances appropriate to the individual's abilities and stage of development.

In accordance with Laban's views, Bruce (1966) proposes that an important educational aim should be to help fulfill the students' need to create and to express themselves. He claims that an educational balance between the development of intellect and the motivation of creativity is desperately needed. Laban (1971) suggests that creative movement encourages an integration of mental and physical activities. Dance involves the interplay of the mind directing one's movements and the movements stimulating one's mental activity. Dance training programs, therefore, should make

use of both the mental and the physical (Laban, 1966). Laban suggests that initial dance training must base its choice of movements on those which an infant or child uses instinctively as he or she begins to move. This follows a natural progression beginning with exploration of one's environment, body, and so on through movement. Later, the urge to imitate develops as the child acquires increased consciousness of his or her actions. In order to encourage this natural progression, Laban (1966) urges teachers to stay away from conventional methods in which children are corrected so as to comply with adult standards. The loss of a child's spontaneity and the promotion of self-consciousness are always dangers involved in over-correction. He suggests that children ought to be encouraged to use their own ideas and methods in dance.

In the early stages of development, movements should be repetitive and involve the whole body. Concentration should be placed on one specific task at a time evolving from strong, direct, quick types of efforts to light, sustained movements which develop naturally later (Laban, 1966). The choice of tasks, which are based upon these different types of actions, becomes less and less restricted as the time of exposure to dance increases. By imaginatively manipulating motion factors which control the flow, pace, intensity, and expansiveness of a child's movements, a teacher can gradually awaken the child's awareness of himself or herself

in relation to the environment.

When working with older children, it has been suggested that one generally must focus on the quality of movement, more exact repetition, and the building of sequences of movements. Older children tend to have a need for more complex dances and a sense of working towards a finished product, while young children appear to respond to and learn most from play-acting based on actions. Dance training with adolescents becomes more concerned with "the mental approach to movement" (Laban,1966) where more complex and creative forms of dancing are stressed. The population of mildly retarded adolescents for whom this creative movement program was designed posed unique problems in that their intellectual development did not match their chronological development. While they shared similarities with young children in terms of their cognitive development, their social maturity, interests, and physical development were quite different. As dance does not focus exclusively on the cognitive or the emotional aspects of an individual, the program had to incorporate elements from both traditional child-oriented as well as adolescent curricula. More will be said about the specfic elements of the program later in this thesis.

The art of gesture and self-expression leads to the art of movement. While dance itself may supply stimuli which can lead to individual creativity, the act of working with

others as partners or in a group allows for ideas to be shared so that the experience of working with others becomes additionally enriching. Laban (1971) cites cases of such movement experiences impacting upon the child's personality. In reviewing a number of educators who employ movement programs, Bruce (1966) offers many examples of their usefulness with a variety of special populations. Results cited include increases in poise, confidence, happiness, and liveliness. In addition, increases in the ability to learn and improvements in behavior and overall physical health also have been found to result from participation in dance. Laban (1971) notes that participation in movement programs appears to reduce children's nervousness while enhancing their overall physical conditioning.

In creative movement there exists no preconceived or dictated style, thus the student is open to an unlimited range and variety of movement elements. As opposed to conventonal dance programs, there are no set steps or body lines which are taught. The steps and gestures in creative movement are basically exaggerations of the same movement activities experienced in life. Basic movement themes, as opposed to standard exercises, have proven to be useful tools for teachers of movement. Laban (1966) suggests that the teacher should find his or her own manner of stimulating students to move by choosing variations from a collection of basic movement-themes which are appropriate to the students'

actual stage of development.

The sixteen basic movement-themes Laban discusses are built upon a scale of increasing complexity. Each of the themes represents a movement idea which contains many possible variations. Teachers may combine themes or use variations on themes to suit the special needs of their students. Individual movement elements, the possible variations contained in the most basic movement themes, will remain valuable even for students at the higher levels. Examples from advanced themes may be useful incentives in the early stages of a student's development. Spontaneous creative movement can evolve regardless of the theme employed, however. These themes offer the structure in which the particular movement activity is to take place. More important than the actual theme is the correct timing and execution of a given lesson to suit the students' needs and interests. Essential to the successful implementation of a creative movement program is a sensitivity to these needs. These include cognitive as well as social-emotional needs and vary widely as one deals with different populations and different settings.

The sixteen basic movement themes are concerned with increasing the child's awareness of the following:

1. The body and its parts
2. Resistance to weight and time (strong-light, sudden-sustained)
3. Space (in relation to the body)
4. Flow of the weight of the body in space and time (pathways with different speeds)
5. Adaptation to partners (response)
6. Instrumental use of the limbs (functions)
7. Isolated actions (efforts)
8. Occupational rhythms (transitions between efforts, repetition)
9. Shapes of movement (patterns)
10. The eight basic effort actions and transitions (wring, press, glide, float, flick, slash, punch, dab)
11. A definite space orientation (directed sequences)
12. Shapes and efforts using different body parts
13. Elevation from the ground (suspension)
14. Group feeling
15. Group formations
16. Expressive qualities or moods of movement

These basic movement themes, which attempt to cover some of the rudiments of free dance, were used as a guide and stimulus to the movement program utilized in the present study.

In their book Liberating Education, Gray and Mager (1973) offer a detailed report of case studies taken from

improvisational drama classes taught over a period of several years. The primary aim of this research was to find ways to make effective teaching with drama practical for teachers. They provide many specific examples of actual movement experiences which were adapted for use with the mildly retarded adolescents in the present study. The authors do not describe a sequence of set lesson plans, but instead present the reader with specific exercises as stimuli for the development of one's own program. They believe that teachers should make their own plans based on the cues given by their students. Teaching is seen as an art which is individualistic and therefore the authors offer relevant insights about teaching style rather than a specific methodology. They speak of projecting vitality in the classroom, remaining open to the group while providing the strength to make one's students feel safe, and keeping purposeful order without repressing one's students as key attributes to successful teaching.

The class structure presented by Gray & Mager provided opportunities for growth and development in four main areas: "physical freeing" (awareness of one's body through movement exploration), "concentration" (the specific focusing of one's thoughts), "believability" (becoming emotionally involved in a role so as to be believable to one's audience), and "relationships" (interrelating with others). They claim that personal growth through improvisational

drama should be a natural development of capacities that are already present. A teacher should not try to teach students how to be physically free or how to concentrate in a step-by-step fashion. Instead, a teacher should provide a structure which encourages children to put forth their own movement content as they explore themselves. Gray and Mager suggest that development through physical freeing, concentration, believability, and relationships can help an adolescent free himself or herself from physical inhibition and gain spontaneity. Their method of teaching through improvisational drama is said to enable people to explore alternative ways of being. The assumption made is that the healthy person is flexible and free to choose among alternatives. Their educational concerns are in keeping with Carl Jung's (1954) belief that the school should try to free adolescents by making them more aware or "properly conscious" of themselves.

The subjects in Gray and Mager's study were taken from a special population which shared certain similarities with the population involved in the present study. Both groups consisted primarily of problem-ridden adolescent boys from inner-city, low-income families, most of whom were found to be poor achievers. Approximately sixty percent of both groups were Black. It is important to keep in mind that the drama classes taught by Mager included children who had average or above average intelligence, whereas the group

given instruction in creative movement in the present study consisted of mildly retarded adolescents. Despite this difference, the suggested exercises chosen from Gray and Mager became useful in a modified form when planning the creative dance program for the present study.

The Teacher/Researcher

An important issue in education in the arts concerns the qualities desirable in those teaching the various art forms. Laban (1971) speaks of the two extremes: the artist, who may be limited in terms of actual teaching ability and willingness to teach, and the teacher, who may be limited in terms of artistic abilities. Hence there are teachers of creative arts who are limited to teaching solely through example and others who are limited in their ability to teach by example. Laban suggests that either type of instructor should seek guidance in developing his or her weaker side.

At the outset, several qualities appeared essential for this teacher to possess in order to be effective in offering a creative movement program to mildly retarded adolescents. (The experience of offering such a program indicated many additional attributes as being important. These will be explored in depth in a later section of this thesis.) This researcher entered the study with fairly extensive experience in dance, creative dramatics, and education.

Prior to the initiation of the program, experience was obtained by working with mildly retarded adolescents on a voluntary basis at the high school in which the study was to take place.

Apart from the practical experience obtained through these educational and professional endeavours, there appears to be a need for one to approach the teaching of creative movement to mildly retarded adolescents with sensitivity and, indeed, some degree of caution. It was anticipated that the disparity between intellectual ability and the students' age and interest levels would demand that the instructor tread a fine line between being overly simplistic or patronizing and being overly complex. Experience has shown that initial resistance to dance and movement is to be expected with most beginners, particularly with male adolescents who comprised the sample in this study. In anticipation of such resistance, the teacher must be prepared to devote much time in early lessons to making the students more comfortable with the medium of movement before pursuing more complex goals.

Perhaps the greatest difficulty one faces in teaching creative movement to foster divergent thinking concerns the use of structure. The ultimate goal is the encouraging of more elaborate and flexible ways of thinking, however, the mechanics of teaching creative movement to a group of mildly retarded adolescents demand that one exercise certain

controls over classroom behavior. Since a level of control must be maintained while one is attempting to promote spontaneity of movement and freedom of thought, these goals become additionally difficult to achieve. The teacher must ensure that the structure of the lessons remain intact while allowing for variation to be dictated by the students' needs. Initially, this requires the greatest amount of control and direction. As the students begin to feel more comfortable with the program and begin to approach the tasks with greater latitude in thought, the teacher must be sensitive to how the students are responding to the program and accommodate to differences in abilities, motivation, and needs within the group.

The Program

The primary aim of the program of creative movement designed for this study was to encourage divergent thinking among mildly retarded adolescents. The curricula consisted of specific lessons based upon particular movement themes. A complete list of detailed lesson plans is included in Appendix A. Each lesson had a particular theme and consisted of a variety of activities related to that theme. These themes included:

1. Body Parts
2. Body Shapes
3. Locomotion and Imagination
4. Props & Believability
5. Believability and Relationships
6. Concentration and Effort Actions
7. Physical Freeing

It was believed that the themes presented above would allow for a progression from simple, imitative movements to more open-ended, self-directed movements. The program began with lessons that utilized specific and confined types of activites (eg. Body Parts or Body Shapes) and evolved into lessons which allowed more spontaneity through suggestion (eg. Effort Actions & Physical Freeing). The program was sufficiently flexibile to accommodate the specific needs or moods of the students. The literature on retardation reviewed elsewhere in this thesis suggests that members of this population are not as flexible in their thinking as are peers of normal intelligence. A wide variety of activities were designed specifically for this group in the hope of breaking through barriers to dance and divergent tasks which may have existed previous to the start of the movement program. All the students met with the teacher prior to the initiation of the program and were told of the nature of the classes in which they were to take part. The students

elected to enroll in the program based upon a brief description of the program given by this researcher. Once they had made the decision to participate, the nature of scheduling at their high school did not allow for them to drop out of the program. The experience of teaching the creative movement program to mildly retarded adolescents will be discussed later in this thesis in the form of detailed case studies of two students who participated in the program. The method of teaching will be explored in depth and the limitations of the program and suggestions for further research will be discussed.

Chapter IV: Research Methods

The present study explored the effects of a creative movement program on the divergent thinking of mildly retarded adolescents. While the literature is equivocal as to the nature of divergent thinking in retarded individuals, there is sufficient evidence to suggest that many such individuals can benefit from attempts to enhance their creativity. Traditionally, programs in drawing, painting, and music have been used to enhance the creative abilities and divergent thinking of children, adolescents, and adults. The literature on creative movement which has been reviewed previously suggests that programs using creative movement also appear to enhance the creativity and divergent thinking of those who participate. A principal aim of this study was to compare the effects of a creative movement program with those of an art program on the divergent thinking of mildly retarded adolescents.

Subjects

The research was conducted among the students of John Grant High School, a special school for mildly retarded adolescents. The subjects who participated in the study

were all in the ninth grade and the Creative Movement program was offered as part of their curriculum as an elective. Assignment to either the Art or the Creative Movement program was on a voluntary basis. While this made it impossible to match students evenly in each group for IQ, the fact that the students were streamed according to IQ level within the school seemed to minimize intelligence differences between groups. The data utilized in the study was drawn from a final population of eight (8) students enrolled in the Art course and twelve (12) students enrolled in the Creative Movement class. Their ages ranged from fourteen (14) to sixteen (16) with a mean age of 14.50 for the Art group and 14.75 for the Creative Movement group.

Instrumentation

The data used for analysis in this study were obtained from three sources :

1. Testing

The Torrance Test of Creative Thinking (TTCT) was employed to measure the divergent thinking of subjects involved in this research project. This test is comprised of two booklets which examine divergent thinking through a verbal test (Thinking Creatively with Words) and a figural

test (Thinking Creatively with Pictures). (Copies of Forms A and B of the figural section of the TTCT are included in Appendix B). As mildly mentally retarded adolescents are noted to be deficient in writing and verbal skills, it was felt that the figural part of the TTCT would better serve to tap the groups' creative ability than would the verbal part of this test, hence the verbal test was not used. The test is scored for what Mehdi (1974) says are the four main aspects of divergent thinking: fluency, flexibility, originality, and elaboration. Fluency is defined as, and measured by, the number of different responses given for each question. It is simply the number of responses minus the number of duplications or irrevelant responses. Flexibility is determined by the variability of the responses given. Different types of answers are grouped into categories and the number of different category types accumulated constitutes a subject's Flexibility score. Originality is judged by comparing the subject's responses with the TTCT scoring manual's list of the most statistically frequent responses. Those responses which demonstrate imagination and creative strength and do not appear on the list are considered more original and are consequently scored higher on the Originality scale. Elaboration can be measured by how well a simple response is expanded through additional ideas to reach a more complete and well-defined response.

As a second measure of divergent thinking, a modified form of Torrance's movement test, Thinking Creatively in Action and Movement (TCAM), was administered to all subjects at the end of the semester. (A copy of the TCAM is included in Appendix C). While this test is designed and standardized for use with children from three to six years of age, it was altered for use in the present study in order to tap an area of creative activity unrelated to drawing. In order to alter the TCAM for use in the present study, the guidelines offered by Torrance (1981) were adhered to although his norms were not used since they were based on a population of preschoolers. This approach does not appear to have violated Torrance's testing procedures since normative comparisons were not made. Torrance (1981) created this test as a non-verbal alternative for use with children who may not be tested easily with the TTCT. The nature of this test does not allow for group administration but demands that it be administered individually. The duration of the TCAM test varies on the average of ten to thirty minutes per child. The measures of creativity tested for in the TCAM are: Fluency, Originality, and Imagination. Fluency and Originality are scored in a similar fashion as with the TTCT. Imagination is scored on a five level continuum according to effort, recognizibility, elaboration, and interpretation as indications of a child's ability to act out a designated role or fashion (Torrance, 1966, 1981).

Concerning the accuracy of the results obtained by untrained raters, Torrance (1981) reports that mean person product-moment coefficients of +.96, +.94, +.91, +.86 were obtained with his figural test for interscorer reliability of trained versus untrained scorers. Interscorer reliability on the TCAM is similarly reported as being quite high. Studies have yielded satisfactory results in indicating that the test scores on the TTCT are somewhat consistent and stable (Bastos, 1973; Gakhor & Luthra, 1973; Holland, 1968). Holland reviewed fifteen studies and found that the majority of reliability coefficients that were reported exceeded +.70. The reliability of TCAM has also been found to be quite favourable (Torrance,1981). As for the validity of the TTCT, reports have not been as favourable. Bastos (1973) found the validity of the TTCT to be rather questionable but states that "the inadequacies observed in the TTCT may be hypothesized to reflect the general state of the art in the area of creativity" (pg.3977). Holland (1968) critiqued over fifty investigations of the concurrent and construct validity of the TTCT by stating that "despite these gross statistical deficiencies and weak designs, most of the evidence seems internally consistent and generally consistent with the literature of creative behavior"(pg.297) In support of standardized creative movement tests like the TCAM, Torrance (1981) points out that teachers' informal ratings of

creativity over the years have been noted to be unreliable. Presently, arguments that support the validity of TCAM rely mostly on evidence reported by users of the test. Torrance urges users of TCAM to report any useful validity information.

Although TTCT and TCAM have been noted to be highly reliable and somewhat valid, it appears that strong validity measures are lacking largely due to the absence of a solid definition of what constitutes creative behavior. Despite its limitations, the TTCT is still one of the most fully developed and widely used methods for measuring creative ability. For this reason, it was utilized as the primary measure in this study with the TCAM being used somewhat informally as a secondary source of data.

2. Post-Study Interviews

At the end of this research project, interviews were conducted by the researcher to provide additional information not revealed in the statistical findings. The physical education teacher who assisted with the course and all twelve of the participants in the Creative Movement program were interviewed individually. Open-ended interviews were employed. Reactions, criticisms, and suggestions were examined. Questions were posed in such a fashion as to encourage subjects to recall as much of the

program as possible. (A copy of the questions used in the open-ended interviews is included in Appendix D). Jourard (1964, 1970) defends the use of such interviews noting that within the realm of psychological research the subjects themselves can offer a valuable source of data.

3. Case Studies

A large body of literature has defended the use of case studies as an exceedingly valuable and vital source of data collection in psychological research (eg. Erikson, 1950; Henry, 1971; Jourard, 1970; Whyte, 1973). It was felt that an exploration of the effects of creative movement on the divergent thinking of mildly retarded adolescents could not be achieved adequately without a detailed study of the process of participation in such a program. To achieve this, case studies of two of the students who took part in the program will be presented and analyzed. In order to offer some insight into the wide range of individual differences among the students who were part of the program, the subjects of the case studies represent one of the students who appeared to benefit most from the program and one of the students who appeared to have benefitted least. As the subjects for the case studies could not be selected prior to the completion of the program, the researcher kept detailed accounts of all the students' development

throughout the duration of the course. These accounts were entered as part of a daily journal kept by this researcher. The journal entries chronicle the progression of the program throughout the semester as well as the progress made by the students and their apparent reactions to the various lessons. Progress was measured informally according to a number of factors. These included observed increases in ability to initiate movement through one's own thought and increases in the spontaneity and originality of the ideas presented. This material will be synthesized to provide the two case studies as well as to offer a brief account of how the program developed.

Procedure

The physical education teacher assisting the researcher met with all eligible students in order to explain the nature of the Creative Movement program which was being offered as an elective course in the Fall, 1983 semester. Students were free to choose this program or either Art or Sewing which were traditional components of the school's Grade Nine curriculum. Once the students had chosen an elective, school policy dictated that they were obliged to remain in that course for the remainder of the semester. In practice, several students who elected to partake in the Creative Movement program stopped attending while others

joined the course at various points during the semester. This was true in the other courses as well and reflects a school-wide trend. None of the students who dropped out of the Creative Movement or Art program or who joined either program after instruction had begun were included in the study sample. In addition, no student who attended fewer than half the classes was included in the sample.

All students in the Creative Movement and Art classes were given the TTCT at the beginning of the semester and again at the end of the program. In order to guard against any residual effects from the initial testing, alternate forms of the test were used in pre- and posttesting. The results of the pre- and posttesting were scored by a graduate student in Art at McGill University and by this researcher. Inter-rater reliablity was .89 (Winer, 1972). Upon completion of the semester, the students in both groups were given a modified form of the TCAM to assess their divergent thinking through a different modality. The results were scored by the same two scorers who attained an inter-rater reliability of .91.

This researcher taught the Creative Movement program and was assisted by the physical education teacher at the high school. A journal was kept throughout the duration of the course as well as a log of lesson plans and the changes made to them. As was mentioned above, the students who took part in the Creative Movement course were interviewed upon

completion of the program in order to obtain feedback on their feelings about the course as well as insight into its effects on them. In addition, the physical education teacher who assisted with the course was interviewed in order to obtain his feedback on the program.

The results of these formal and informal measures as well as detailed accounts of the course and of two of the students who took part in it are analyzed and discussed in the next chapter.

Chapter V: Results and Discussion

It has been suggested that the type of data generated in a thesis is determined largely by the method of data collection and the design of the study. Kantor and Lehr (1977) note that the design of any piece of research inevitably represents a value judgement on the part of the investigator as to the best possible approach to the study of a particular issue. The exploration of the effects of creative movement on divergent thinking undertaken in this study focuses on three separate data bases: the psychometric assessment of divergent thinking using Torrance's tests of divergent thinking, the use of structured interviewing, and the case study method. Each source of data will be presented separately in the first three sections of this chapter and will be integrated in a final section. The first section will be devoted to the statistical analysis and interpretation of the data collected from two sources; the Torrance Test of Creative Thinking (TTCT) and the Thinking Creatively in Action and Movement (TCAM) test. These tests, which are designed to measure divergent thinking abilities, were administered to both groups. The aim of the second section will be an analysis of the use of creative movement with mildly retarded subjects. This will

include an overview of the program utilized as well as an exploration of the results of interviews conducted with the students who took the course and with the assisting teacher. As was discussed in the previous chapter, the aim of these interviews was to assess the students' impressions of the course as well as to gain insight into possible outcomes of the course not measured by the psychometric tests. The third section will offer an anaysis of detailed case studies of two participants in the creative movement program. The case studies are offered to provide insight into the program and its effects on mildly retarded adolescents through a closer examination of two students who participated in the program.

1. Measures of Divergent Thinking

A. The Torrance Test of Creative Thinking

Forms A and B of the Torrance Test of Creative Thinking (TTCT) were used respectively as pre- and posttest measures with both the Creative Movement and the Art groups. The results suggest that there were certain differences between the groups. These results and their implications are discussed below.

Pretest Results

The students were free to elect to take Art or Creative Movement. It was therefore anticipated that there might be certain differences between the groups initially despite their being similar in intellectual and academic abilities. The results of the pretests suggest that this was not the case as no significant differences were found between groups on any of the four dimensions measured by the TTCT. The group means for each of these dimensions are presented in Table I.

Table I

Pretest Means for the Creative Movement and Art Groups

	Creative Movement Group	Art Group	Overall Mean
Fluency	17.92	19.75	18.65
Flexibility	14.92	17.25	15.70
Originality	29.25	30.25	29.65
Elaboration	33.83	31.63	32.95

These results suggest that the groups were very similar in creativity as measured by the TTCT, hence the students' preference for either a class in Art or one in Creative Movement did not reflect any differences in their creative thinking abilities.

Posttest Results

The results of tests administered at the end of the intervention indicate that there were significant differences between pre- and posttest results and between groups on certain aspects of creativity. A list of posttest means is presented for each group in Table II. The overall means suggest that scores dropped for both groups on the dimensions of Flexibility and Elaboration while improving for both groups on Originality and for the Art group on Fluency. An analysis of the posttest results indicate that there were significant differences between groups on the Fluency dimension ($p<.01$). This was the only dimension which showed significant differences on posttesting, although the Originality scores approached significance.

Table II

Posttest Means for the Creative Movement and Art Groups

	Creative Movement Group	Art Group	Overall Mean
Fluency	16.67 (17.92)	27.00 (19.75)	20.80 (18.65)
Flexibility	12.58 (14.67)	15.50 (17.75)	13.75 (15.70)
Originality	38.58 (29.25)	31.13 (30.25)	35.60 (29.65)
Elaboration	26.08 (33.83)	27.13 (31.63)	26.50 (32.95)

(Pretest means in parentheses)

A statistical analysis of the difference scores between pre- and posttesting for each group indicates a complex pattern of variance among scores. As was anticipated from the analysis of variance on posttest scores, significance was found among the difference scores on the Fluency dimension for the Art group. This suggests that most subjects increased their scores in this area over the course of the semester. A totally unanticipated finding occurred

with regard to difference scores on the Flexibility dimension. While the posttest mean scores for both groups dropped approximately two points from their pretest means, this difference was insufficient to yield significance in an analysis of variance of pre- and posttest means. A closer examination of the difference scores for each individual within the groups yielded highly significant variability between pretest and posttest scores. This is indicative of the fact that scores varied widely between pre- and post-testing, yet the overall means remained relatively unchanged. Subjects in both groups seemed to have widely disparate pre- and posttest scores with an overall trend toward slightly lower scores on the posttest.

This result might be due to some idiosyncracy in the testing situation; however, since all four dimensions were tested for at the same time and no such differences were found on the other three dimensions, this seems unlikely. A more plausible explanation of this result concerns the reliability of the Flexibility dimension. While Torrance has demonstrated fairly high reliability on all dimensions of the TTCT, reliability has not been examined with retarded individuals. Perhaps some of the abilities which are aspects of the Flexibility dimension are much less stable in this population. Specifically, the issue of perseveration in the thinking of retarded subjects appears to have a major influence on their responding to the Flexibility measures on

the TTCT. At times when subjects were perseverating, they would obtain very low scores on Flexibility, while at other times, when they were not perseverating, their scores would be somewhat higher. Since perseveration tends to predominate in the thinking of retarded individuals at certain times while not at others, this might explain the high variability between pre- and posttest scores. The present analysis does not offer sufficient sample size or adequate controls to make definite statements regarding this issue, however, it does raise questions about the reliabilty of the Flexibility dimension in its use with mentally retarded subjects.

In general, several problems presented themselves in the actual testing situations which appear to have influenced the reliability of these data. A number of students were uncooperative as they did not follow the instructions being given, did not abide by the time frames set, talked continually, and attempted to copy from one another despite efforts to dissuade them from these actions. At times during the posttest, they appeared to be conscientiously trying not to be creative. While this was not true of all students, the presence of these disruptions during the testing probably affected all students. In addition, the small sample size used in this study makes it particularly sensitive to such behavior in even a small number of subjects.

B. Thinking Creatively in Action and Movement

The Thinking Creatively in Action and Movement (TCAM) test was administered to each group upon completion of their courses. It was employed as an alternate measure of creative ability which did not involve drawing or other aspects which may have been studied by the Art group, hence giving them an unfair advantage over the Creative Movement group. The scores on the three dimensions of the TCAM are presented in Table III.

Table III

Posttest Means for the Creative Movement and Art Groups

	Creative Movement Group	Art Group	Overall Mean
Fluency	37.83	26.25	33.20
Originality	58.75	45.50	53.45
Elaboration	16.25	13.50	15.15

The results of an analysis of scores for both groups indicated that the Creative Movement group scored higher on all three dimensions, however, these differences were not significant. As the scoring for the TCAM had to be adapted for use with an adolescent population, this might have influenced these results in some way. While there was no significant difference between groups, there was a difference between the scores on the TCAM and those on the TTCT. As the TCAM was not used as a pretest measure, it is not possible to make statements about the effects of the creative movement program on the higher TCAM scores for this group. The differences in scores of divergent thinking using the TTCT and the TCAM do suggest that these tests appear to be measuring somewhat different aspects of creative ability. While the evidence presented here is not sufficient to describe the nature of such differences, it does suggest the need for further investigation of the various components of divergent thinking and creativity.

2. Analysis of the Creative Movement Program

A. The Program

The theoretical basis for the creative movement program designed for this study was outlined in Chapter III of this thesis. This program had to be sufficiently flexible to

allow for changes to accommodate the specific needs of the students: their shorter attention spans, their tendency towards perseveration, and the differences between their cognitive development and their chronological age and emotional development. Lesson plans and movement exercises were adapted accordingly, however, the program adhered to the original principles outlined previously. The following is an account of the program over the course of the semester. It is not a chronicle of all that occurred; rather, it is intended to offer the reader some insights into a creative movement program with mildly retarded adolescents. It also attempts to explore the development of the students as a group throughout the program.

The accounts of the program are derived from journal entries which have been edited in the interest of brevity and clarity. These entries are separated from the main text. Episodes are analyzed and criticized individually as well as in relation to the course as a whole and the impact they seemed to have on the students. At the end of this account, an exploration of the limitations of this course will be presented.

The first lesson attempted to offer familiar types of exercises.

> In a circle formation in the middle of the gym, the first lesson began with simple follow the leader callestenics to music. Names of body parts were called out as the group mirrored the teacher in touching their right knee, right elbow or left shoulder, for example, to the floor. When the question "What other body parts can we touch to the floor?" was posed, a silent, shy hush came over the group. With much prompting, ideas were reluctantly thrown out and acted upon. The task became more complex "Touch one body part to another. For example, touch your head to your left knee; your right elbow to your left foot" etc. "Come on now, can you think of something else?"

This activity continued, but the pace was staggered, for the majority of the group remained hesitant and demonstrated little enthusiasm. It appeared necessary at this point to abandon the structure of the lesson plan and proceed with something that would get the class moving.

> In keeping with the theme, questions like "Name a body part. Now let it lead you across the room." were used. The students who were now able to drop their defenses seemed to really enjoy this activity, but again much prompting and demonstration was necessary. The group was then quickly broken into pairs. Their task was to take turns doing three different movements touching one body part to another, as we had just done individually in a group, and have their partner copy these movements. Responses were minimal as the class was starting to show resistance to the types of tasks being presented.

The students who did make attempts appeared to do so in jest, as if they were afraid to look silly in front of their classmates. The responses given were inappropriate to the task. It seemed that the problem stemmed from the group's inability or unwillingness to focus on the type of task being given. They appeared to be able to follow instructions or demonstrations which provided them with specific tasks. When open-ended tasks were presented which demanded that the students produce their own movement ideas, resistance seemed to arise.

> The final activity, in keeping with the theme, was to have someone perform a movement repetitiously and to have others slowly join in with a movement which utilizes different body parts. Body sounds were also experimented with (snap, slap, hiss, creak etc.) in the hopes of incorporating sounds and movements so as to create a machine effect. Several demonstrations were attempted with the help of the physical education teacher, but these attempts were in vain, for the class' interest and attention span had diminished.

The group's biggest handicap at this point was not their apparent limited attention spans but their lack of exposure to teaching styles which stress that the students themselves produce original ideas. The group appeared fearful and frustrated when asked to initiate a movement through an idea of their own. They seemed to feel much more

at ease when given the opportunity to mimic someone or something. With this in mind, the next lesson was begun with set tasks and slowly moved to a more open ended approach.

> The students were asked to run around the gym and to freeze their movement when the music stopped. "Notice the shape your body is making. When you freeze the next time, try to freeze in the exact same shape. Go!...Everyone quick copy Norman's shape. The next time the music stops try to freeze in this new shape....Now this time I want to see something really interesting and different." Slowly we began to label different types of shapes such as round, long, wide, twisted. (The group was exhausted from running around the gym. The students' fatigue enabled me to confine them to a smaller space.)
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> On the school stage the shapes we had just defined were repeated in a game format. Quickly different shapes were called out and cues were increasingly sped up. "Now make it a different way. Make it bigger. Smaller. Make a wide shape in the air...standing...low to the ground." The enthusiasm with which the cues were delivered seemed to inspire the group very little. For the most part, the group remained unstimulated as if they felt that that was the "cool" way to act. Concrete examples were employed next to allow the students a chance to use images which might aid them in becoming more kinesthetically aware. They were given a chance to experiment with the possible shapes or forms they can interprete with their bodies. "Can anyone name a vegetable that is tall and thin? A carrot. Good, everyone quickly become a long skinny carrot." Other vegetables were used as images. Then we attempted becoming different bottle shapes, different letters of the alphabet and various types of donuts. "Alright, let's see a little munchkin donut."

This exercise appeared, in the planning stage, to be one which could have been effective in allowing for creativity and fun. In practice, however, it was neither. The class felt patronized by the activities presented. For example, Nick called out "Man this is dumb" and Danny spoke out "Yah, this is baby stuff." In light of the group's limited attention span and due to the novelty of the program and its particular method of presentation, it was initially believed that the program should include a structure more consistent with that found in an early childhood program. Experience showed that their adolescent sensibility would not allow for a literal adoption of childhood programs, however. This reflected a failure on the part of this researcher to find exercises which appealed to their adolescent concerns and interests without being overly complex. Perhaps this failure was most clearly evident in the following episode concerning classroom discipline.

> The next exercise was to have the class work as a group in creating an illusion of an ocean. They were to lie down side by side, listen to the music and then move as if they were one big ocean. This resulted in chaos as bickering and fighting between classmates mounted. Danny complained "I'm not gonna go crawling all over the floor, it's dirty !" The props backstage became more of a focal point to several members of the group than did the exercise. Nick continued running up and down the portable stairs while Danny badgered and finally hit Norman. The frenzy came to a head when I was nearly injured by a row of falling

lockers. Unfortunately my composure was lost, as well as my temper, resulting in their receiving a severe reprimand.

Upon completion of the course, it became evident that more effort should have been focused on incorporation of the familiar into the program. This was particularly true of the failure to employ the props which the students seem to gravitate towards at any free moment and which served to disrupt the flow of the lessons. While not originally conceived as part of the program, the props could have been utilized effectively as a means of encouraging creative activity as well as one means of reducing the students' inhibitions when faced with novel tasks.

When things calmed down we proceeded with an exercise called "Shadow play". Shadow play utilizes some of the principles that help free a student physically. This is of particular value in the early stages of a course. A slide projector was used to throw light against the stage curtain and one student at a time was given a chance to explore different shapes, through the use of shadows. Gradually the class started responding to the exercise and soon students began working together. At first they tended to ignore the shadows, as their aggressive behavior resurfaced. Then suddenly a group of four boys working together started to create an interesting image. The whole group joined them and the lesson ended very positively and productively.

After having observed the response of the group to this lesson, it became apparent that attention had to be paid to ensure that future tasks would be more relevant to the group's interests and ability level. It became clear that the task of finding exercises appropriate to both their chronological age and mental abilities required striking a rather delicate balance. Future lessons were geared to have much more adolescent content while remaining esentially very concrete conceptually.

Another problem that revealed itself by the end of the second lesson was the poor class attendance at John Grant High School (JGHS). This tended to hamper the continuity of the program as there was little carry-over from one lesson to the next. In order to allow for this, each lesson was designed as a separate unit which could be taken alone outside the context of the entire program. When taken together, these units constituted a unified program, in that they were thematically linked and that there was a progression in lesson complexity over the course of the program.

> The third lesson which focused on locomotion and situations, commenced with the task "How many different ways can you move to get from this side of the room to the other". The group responded with many good ideas but when a bit of drama was added, "you're in the middle of a war and...", the group started running and yelling all over the gym

> before the instructions were even completed. The class was quietened down and reminded of the fact that a drum beat was the signal to go or to stop. In the next task, running in different patterns (zig-zag, spirals etc.) the students followed instructions and refrained from fighting, although for the most part they demonstrated little enthusiasm. Dramatic exercises requiring imagination and concentration were attempted. The group quickly became nonsensical and excessively rowdy due, perhaps, to the fact that the novelty of the task posed too many demands on the students. Resultantly, the group was reprimanded as they sat out on the bench. The final activity made use of hats which served as the catylist for expressive movement ideas. This exercise went smoothly, but revealed the fact that the group needed many practice exercises in believability.

A much preferred tactic, which doesn't interfere with the flow of the lesson, is to get the group to stop all activity and to have them concentrate on something that allows them to calm down. For example, ask the class to lie down with their eyes closed and tell them to listen to their heartbeat or to focus on their breathing. This technique was utilized in the latter part of the lesson and it proved to be very effective in controlling excess energy leading to disruptive behavior.

The use of lyrical music appeared to intimidate most members of the group. The class seemed to enjoy and respond more to highly rhythmic music, although the use of a strong fast beat may have added to their hyperactivity at times. For the most part, the group's movements tended to have little relation to the music. The music was effective

mostly as a cue to stop and start activities and, at times, to help mask the students' inhibitions. At other times, the music appeared to intimidate them as they felt that they were no longer just moving but that they were dancing. Before the onset of one lesson, Danny said "Hey, do we have to do that dumb dancin' stuff again." and Nick added, "Ya man, I'm no professional ballet or nuttin', why don't we play baskeball." At the end of the lesson, Jack asked "Why didn't we do the freezing game like last time?" As a reflection of this important statement, repetitions of certain activities were planned to be included as a warm-up in the lessons to follow.

> As the students entered the gym dressed to take part in Lesson IV, entitled Props and Believability, they seemed in an aggressive and energetic state. It was thought that it would be best to get the class seated. A tug-o-war was presented in order to release some tension. The group was asked to concentrate on the muscles and body positions they used when pulling. The rope was then removed and the class was instructed to replay everything they did, recapturing feelings and actions while using an imaginary rope. After each trial tug-o-war ended, several students ran across to their opponent's team to continue the fighting they were engaged in upon entering the gym. The group liked the tug-o-war and attempted the imaginary part of this exercise but with little serious intention. A simulated dodgeball game was implemented next. The two groups were given beanbags and the rules were to be altered according to the different types of throws conceived by the group. The rules were ignored as the students became concerned with hitting their opponents as hard as possible. This activity was

stopped shortly and a less competitive exercise was presented. The group was instructed to "Try to go over the rope anyway you want. Now try getting over in a different way." A rope being suspended by two students was slowly raised in height to make the task more challenging. The task was then changed to "Now let's see how many different ways you can go under the rope." This exercise is like a modified version of the limbo. The students were enjoying themselves and had calmed down by this point continuing to work very productively in the next exercise which included the use of hoops. In pairs, the students were told to invent a game of their own using a hoop. Some very interesting ideas were developed and presented to the class. A game "Musical Hoops" was the final activity. Although an element of competition existed, the mood of the group had changed and no aggressiveness was displayed.

It appeared that the students were still having difficulty adapting to the program. They especially experienced uneasiness with tasks which demanded abstract thinking. It is felt that this was mostly due to the group's inability at this point to break away from concrete thought. Perhaps the size of the group may have contributed to this failure. (More will be said of this later). At the beginning of the lesson, several students displayed a need to release aggressive energies. A cathartic method of releasing these tensions employing a tug-o-war game was attempted. Instead, this only served to heighten their aggressiveness as fighting resurfaced and continued into the next activity, the simulated dodgeball game. The failure of this attempt lends support to the large body of evidence

which questions the effectiveness of the cathartic approach in dealing with aggressive behavior (eg. Bandura, 1971). In subsequent lessons, attempts were made to cope with such behavior by redirecting their aggressive energies through structured activities which demanded a high energy level.

> Lesson V began with a game of "Simon Says", which served as a good review of our first lesson on body parts. The group seemed highly spirited and several students had the opportunity to lead the activity. We moved smoothly into the next exercise which involved the use of chairs. In a circle formation, each child took a turn performing a movement of his choice which the group would follow. Responses for the most part, were extremely creative. Ideas included - jumping on and off their chairs, running around them, doing a spin and sitting down. The next instruction was "change chairs with someone without touching the floor, everyone at once go!" The results of this could have been disastrous, however, the group responded calmly and purposefully. Two students were then asked to take their chairs and sit in the middle of the circle. They were told to "move" as music was put on. It became apparent that this was too intimidating, so the directions were quickly changed so that the whole class was told to begin moving. While "The theme from Star Wars" loudly played, chairs were spun, swung, piled up, and driven. The group worked very innovatively together as they created an interestingly wild choreography. The whole class was then broken into couples and each pair was given a rope. One partner was told to lead the movements and the other to follow. They focused for a while on how the passive partner must move in accordance with his leader. The ropes were then taken away and the same task was requested of the group using an imaginary rope. Several of the students seemed to be able to concentrate on the "invisible rope" for short periods.

It appeared that the group was beginning to adapt to the novelty of the creative dance program. They responded positively to the teacher's enthusiasm, to the music, and to many of the exercises offered in this lesson.

> Lesson VI began with a concentration game which stresses rhythm. A steady beat was to be maintained by hand clapping while the active participant called out someone's name at random to pass the lead. The group appeared distracted and it was a battle to get even a few students attending. We were not able to attempt a variation of the basic task and so we moved on to the next exercise. The group was asked to spread out and to react to the action words being called out; "punch, squeeze, slash, smash, float, fly, hop, shake, slide, roll, crawl, slither, run, jump, explode and fall". The students were uninterested and resistant. Sustained types of action tasks were introduced next. Items like push or pull were called out and the group was told to do the task "faster, harder, in slow motion." The group had ceased responding by this time. The lesson was stopped and the group was told to sit on the bench. The students who wanted to continue working were taken to one end of the gym while the remainder of the group sat on the bench. As a small group of seven, we proceeded with the task of building a house. Step by step we discussed what our next plan of action should be and then carried out the imaginary work that had to be done to accomplish the task at hand. Through the use of mime, we went from mixing the concrete for the foundation we had dug right through to the point where all seven of us lay down beside the crackling fireplace enjoying our finished product.

It became increasingly apparent that teaching creative dance to a class of fifteen, and, at times, seventeen mentally

retarded adolescents was perhaps too demanding a task for one teacher. Working in a small group promoted the realization that many of the problems encountered (discipline, motivation, and task comprehension) could have been partially due to the large class size.

> The group had requested activities which incorporated the use of basketballs on numerous occasions. This lesson's warm-up complied with these wishes as it included these familiar props. The class spread out in a circle and called aloud the different types of throws that they were inventing. The students' lack of discipline and lack of ability to focus on a specific task quickly became a problem. The students seemed to resent having to think about their actions while creating new ideas. In previous lessons, they appeared most comfortable with tasks that allowed them to repeat or alter movements with which they were familiar. A relay activity was introduced through both explanation and demonstration. The group seemed impatient so a task was set and the relay began. Before the start of the second relay, the group was asked, "How else could we move the ball back and forth across the floor." Many answers were blurted out this time and so the task was altered so that each person in each group could try doing something original. The group which produced the greatest number of different responses would be the winner. The students soon began fighting over who was going to go first. Nick went second in his group. He dribbled up to the nearest basket and proceeded to take shots. His group immediately ran up to join him.

Rather than meeting this with a reprimand, it was felt that a better approach would be to incorporate their behavior into a new task. This teacher immediately requested that

the basketball activity incorporate music and that rhythms be adherred to.

A major problem concerned the physical space in which the program took place. The setting needed for dramatic and physical expression is quite different from that found in most classrooms. Gray & Mager (1973) suggest that an environment conducive to movement creates an illusory world which helps participants suspend conventional ways of behavior and sustains movement. The appropriate setting and climate established also must cultivate feelings of security. A new space or one which has been altered significantly for the purposes of the movement class are best suited to these purposes. Students are less likely to revert to old patterns of behavior in such novel settings, hence new patterns can be established for the purposes of the course. Since the gymnasium space utilized for the majority of the course was extremely large, bright, and familiar to the students, it did not provide an ideal environment for the movement program. The students repeatedly reverted to behavior appropriate to their physical education classes while in the gym. An attempt was made to utilize the stage, which offered a more intimate atmosphere, however, the space it afforded was not large enough for the number of students in the class. While in the gym, they seemed anxious to engage in sports and ultimately the program ended with an unscheduled basketball game.

Originally it was planned that the program continue for a few more weeks, however, scheduling problems on the part of the school prevented this. Despite the fact that each lesson was designed as a unit which could stand independent of the other lessons, the abrupt ending to the course prevented any attempts to tie together the many and varied aspects of the course. More will be said of this and other limitations of the course below.

Program Evaluation

Scheduling problems at JGHS delayed the introduction of this program four weeks. A minimum of ten weeks of instruction was hoped to be achieved at the outset, however, several classes were missed unexpectedly which resulted in an intervention program consisting of seven classes spread out over a twelve week period. As well, the low and irregular attendence of classes at JGHS made the planning of lessons additionally difficult. As a result the use of carry-over or review exercises was also a problem. This has been a frequent complaint among the teachers at JGHS. Attendance problems have been cited as hampering the vocational adjustment of mildly retarded subjects (Folman & Budoff, 1971).

Class size at JGHS is usually limited to approximately eight students. In the interest of statistical sampling, it

was felt a larger class size was desirable, hence the size of the movement class reached seventeen students when everyone attended. Unfortunately this hampered the effectiveness of the program in that the students were easily distracted in such a large group. In addition, the mechanics of teaching movement to such a large group shifted the focus of the researcher's efforts since much more time had to be devoted to discipline. This difficulty was compounded by the fact that the class was primarily made up of boys. This was unavoidable for the percentage of boys attending JGHS far outnumbers the percentage of girls. That this group of boys was taken from a special population of mentally retarded adolescents made the task of teaching creative dance excessively demanding for one teacher. An alternative which could have decreased many of the problems related to class size would have been to take two smaller groups and combine the results, however, this was not possible due to rigid scheduling at the high school.

The students initially appeared to resent the novel nature of the program, its tasks, and its method of instruction. They especially disliked being asked to initiate movement through ideas of their own. The use of music also intimidated the students at first. The group participating in the movement program consisted of a combination of three grade nine classes. This promoted a less serious group atmosphere as the students viewed their

classmates as playground buddies since this was the only opportunity they had to be in one class.

As discussed in the previous section, the space provided for the movement class also limited the program's potential. The gym was too large, bright, and familiar an area much lacking in intimacy. The students fell into their usual patterns of pulling on the window chains, swinging on bars, and so on. Some of the obstacles that were initially presented were overcome in time. The group's initial intimidation when faced with novel types of activitites lessened. Many students were eventually able to focus on the tasks posed for an entire lesson. The group was able to create interesting movements through ideas of their own. The music never really appeared to inspire the students, but it did, on occasion, help mask some of the students' inhibitions. It is believed that many more obstacles could have been overcome if not for the problem of the group's large size.

Another obstacle which prevailed throughout was the group's negative attitude towards the program. When the students were initially exposed to the idea of partaking in a creative movement class, they seemed to be very eager to try the program. Resentment built up when the group realized they were committed to giving up half their option time to activities which involved creative thinking rather than just play. The Creative Movement course differed

markedly from traditional highly structured, concrete courses taught at JGHS, hence the students may have reacted adversely to the demands on them to be creative.

Much frustration was experienced as a result of the many limitations facing this researcher. It was felt that several members of the group had very good imaginations and the potential to create through movement. At times, this potential shone through in everything they did, while at other times it was not in evidence. The general feeling at the conclusion of the program was that there were strong signs that many of these students could benifit from such a program in creative movement, particularly if several of the modifications discussed above could be implemented.

The students' reactions to the program were mixed. Some activities were enjoyed, others were not. Sometimes these feelings were shared by all, but more frequently there was some degree of diversity in the students' reactions. The next section explores these reactions based upon the content of interviews given upon the completion of the course.

B. The Interviews

The interviews took place in December 1983 and were held at JGHS. They were conducted by this researcher and interview sessions typically lasted between five (5) and

fifteen (15) minutes. While there were specific questions asked in each interview, the sessions conducted were basically informal and conversational in nature. Since the study required that the subjects provide an essential portion of the information to be utilized, the purpose and importance of the interviews were made clear to the subjects. They were also invited to make any comments pertaining to the creative movement program they took part in or suggestions for future implementations of such a program. An informal or semi-structured interview technique, as was employed here, allows one to explore the specific reactions of an individual (Esterson, 1970). Much literature suggests that this type of research necessitates a level of honesty between the experimenter and the subject (Jourard, 1970). The environment created in informal interviewing is seen as conducive to obtaining this level of honesty.

A basic outline of the questions utilized in the post-program interviews is presented in Appendix D. These open-ended interviews dealt with the students' general feelings about the course, their likes and dislikes with regard to course content, and what they felt they had learned through their participation in the course.

The general impression of the group varied considerably from one student to the next, however, several overriding

opinions seemed to prevail. These and other important responses will be explored next.

Impressions

It appeared that the group as a whole claimed to enjoy the creative movement program. Many of the students felt that the activities were interesting, and most were able to recall several exercises which they found to be particularly enjoyable. This came as much of a surprise for the resistance with which the program was met gave the impression that the students were very uninterested in the activities being offered. Of seven students who said they did not enjoy the program, the general response was that they found it boring. Activites that were apparently least enjoyed included exercises which required that the students make use of the floor (crawling, rolling, and so on). Responses included: "I didn't like all that baby stuff....We had to imagine too much....could have had more games", "I'd rather play hockey", "We should have been given harder stuff...no crawling around, "Do things the class wants to do". This reiterates the fact that when working with mentally retarded adolescents, there must be a careful balance created so that tasks are not too demanding and yet not too childish. Activites should not discourage or intimidate students and at the same time should not insult

their intelligence. Although the majority of the group enjoyed the program, the students unanimously felt that the class did not run smoothly and was therefore not as successful as it could have been. One prevelant opinion was that the class size was too large. Many students felt that the program could have been much more fun and successful if they had worked in a smaller group. Comments included "There were too many arguments", "didn't like the other kids, they fought a lot", "Everyone was fooling around, if one acts up the others join in hitting the little kids....don't let them come back....send them to the principal....make the class smaller, about ten but not less than three", "I don't behave good when the other guys are around ....it would be good if it was just me and you sir". These opinions appeared to be crucial with regards to the success of the program.

Discipline problems, perhaps as a direct result of class size, seemed to hinder the group's concentration, their responses, and the flow of activities. A one-on-one situation as proposed by one student was not feasible; however, a smaller class of eight to ten students, as opposed to seventeen students, might have resulted in a more successful program overall. Opinions varied as to the use of music with the activities offered. Some students liked the use of music, "I think more with it", some would have preferred a different type of music and others would have

not have had any music at all for it made them them self-conscious.

Impact of the Course

When asked if they had learned anything from the experience many of the students responded that they did benefit from participation in the movement program, "Ya, lots", "Sure, I guess so", but most were unable to pinpoint how they had grown, "I don't know, things!", "You know, dancin' and all that stuff". A few of the students made attempts to explain what they felt they had learned. "I learned to make shadows and play with chairs, oh yeah, and hats". "I learned how to build a house and act things out....the others can't imagine too much". These responses in regard to the impact of the movement program will be further analysed in the conclusion. The next section will review the impressions of the physical education teacher who observed and assisted in the creative movement program.

The Physical Education Teacher

A questionnaire aimed at obtaining feedback from the physical education teacher on the effectiveness of the creative movement program is outlined in Appendix E along with a detailed account of his responses. These written

responses will be summarized next.

Many of the limitations of the Creative Movement program previously discussed, were noted by the physical education teacher in his responses to a written questionnaire. Included were: the large class size and high absenteeism, the pupil's lack of interest in the program, their listening skill deficits, their varied level of ability, and the incessant behavior problems encountered. The physical education teacher also suggested that the program lacked sufficient demonstration by the teacher or students and that it incorporated abstract tasks which are too difficult for the participants in the program. Due to the nature of the program, teacher or pupil demonstrations were not desirable and were minimized as they tend to promote imitative responses as opposed to fluency, flexibility, and originality of thought. While Laban (1971) has suggested that imitation should not be employed before exploration, others have found that imitation can be used effectively to make beginners more comfortable with creative movement (eg. Gray & Mager, 1973). Once the group begins to feel secure they can then be encouraged to imitate movement based on their own ideas and feelings. Abstract tasks, however, encourage these aspects of divergent thinking and hence were a necessary part of the program. These suggestions reflect the general attitude of most educators of the mentally retarded who feel that this population is

incapable of abstract thought. Traditionally they tend to teach by rote or through demonstration and neglect methods which may enhance divergent as opposed to convergent thinking skills. Case studies of two students who participated in the movement program will be the focus of the next section.

3. Case Studies

While each student was given an equal opportunity to benefit from participation in the creative movement program, some students appear to have benefitted greatly whereas others appear to have been affected minimally. A discussion of two students, each of whom represents one of these extremes, will be offered in an attempt to discern why this may have occurred. A profile for each of the two participants was obtained from the records at JGHS and from observations of their reaction to the movement program.

Norman

Norman is a friendly, talkative, and hard-working fifteen-year-old boy. He attended a private elementary school for students with special needs. For the past three years, he has attended JGHS and was in grade nine for the 1983-84 school year. According to a written school report,

Norman is a well-behaved student. The report claims, however, that he has difficulty dealing with his peers as he often exaggerates the truth, which inevitably leads to confrontations. It was stated that he works best in highly structured situations and the report proposed that Norman's slow but steady progress could be maintained within a structured academic environment. According to reports from several of Norman's teachers at JGHS, he is an eager and hard working pupil who is trying his best. He has had no problems with punctuality, participation, and subject progress. According to the technical, vocational, and arts and crafts teachers, Norman is extremely innovative, creative and imaginative. These creative abilities are particularly pronounced in wood-working class. Norman's teachers seem to agree, overall, that he "works well and produces good results." Scores on the Stanford Achievement Test for the past three years indicate that Norman is making slow but steady progress. For example, grade equivalent scores demonstrate that at thirteen, Norman was achieving results at a 2.5 grade level, whereas currently his scores approach a 3.0 grade equivilent.

At the start of the creative movement program, Norman and his classmates displayed resistance to the novelty of the tasks and the method of presentation. Norman, unlike many of his peers, dropped his defenses and eventually became one of the most involved students in the creative

movement class. Norman is the type of boy who will spend much of his time letting his imagination run free. He has a very active mind and is highly excited when given the opportunity to express his ideas. While this suggests that he already evidenced a fairly high degree of divergent thinking, his scores on the pretest were among the lowest in either group. This program provided him with countless opportunities to express his imagination and tapped his abilites to provide original responses. During an exercise in Lesson Four using an imaginary rope, Norman's responses evidenced a high degree of concentration and believability. Unlike most of his peers, he was able to keep focused on the imaginary rope. He was able to come up with new variations on how to use the "rope" without losing awareness of the "rope's" length and tension or of his partner at the other end of the "rope". This high level of concentration was not evidenced in his behavior earlier in the course when he was unable to stay on task. At these times, Norman's vivid imagination did cause discipline problems. On several occasions, Norman picked up on a suggestion and became so completely involved with an idea that he ignored additional cues being given. For example, Lesson Three incorporated dramatic activities requiring imagination. Norman became so overwhelmed by the movement suggestions "you're in the middle of a war" or "we're slashing our way through the tall grass of an African jungle" that he disregarded the fact

that he was part of a class and ran wild. His behavior resembled that of a child in a playground. While at times Norman was allowed to pursue these actions, more frequently he had to be stopped and brought back into the group.

As noted in his school reports, Norman responds best in highly structured situations, hence he utilizes his creative abilities best in classes in woodworking and arts and crafts, and in other structured settings. The relative lack of structure he experienced in the Creative Movement program appeared to afford him too much latitude. When activities were more focused, he semed to be better able to channel his creative energies and benefit from these lessons. A good example of his response to this structure occurred in a lesson employing chairs as props. He was able to generate a large number of different ideas as to the content created by the music and, at times, the other students' activities. Here his movements evidence a purposefulness not seen in many of the other students' actions nor in many of his actions in less structured activities. Over the course of the program, Norman did appear to adapt to less structured situations, however, which may suggest that certain changes in his divergent thinking began to take place. What is clear is that he became more comfortable with the format of the course, hence he became more involved in it.

When a disturbance arose and students began disrupting the class, Norman was one of the few who spoke out in favour

of continuing with the activites planned. When fighting broke out in the class, however, he was unable to resist the temptation and joined his peers. Despite the limitations of the program, Norman was able to improve considerably in his ability to think divergently. On the pretest (Form A of the TTCT) he scored 6 on Fluency, 6 on Flexibility, 19 on Originality, and 36 on Elaboration. His posttests scores (Form B on the TTCT) were considerably higher, 24 on Fluency, 18 on Flexibility, 51 on Originality, and 66 on Elaboration. He had the second lowest overall score in his group on the pretest and scored the highest overall on the posttest. Norman's score on the TCAM also ranked him considerably higher than any other student in either the Art or Creative Movement groups on ability to think divergently in movement. While his low pretest scores may have resulted from nervousness or some other artifact of the testing situation, the observational data suggests that Norman did benefit significantly from his participation in the course.

Danny

Danny is a fourteen year-old male, the only child in a lower-class family. He had attended JGHS for two years and was in grade nine for the 1983-84 school year.

According to his teachers, Danny is seen as capable of doing better work than he does. Reports claim that he is

unsatisfactory in his abilities to follow directions, to remain on a task, to make use of his time, and to complete assignments. He is also said to be weak in his social and language skills. His French and Geography teachers noted that he is inattentive, easily distracted, and wastes too much time being silly. The physical education teacher suggests that Danny lacks motivation and consistency. Danny is noted as being punctual and has a satisfactory attendance level. At times he has received good grades as he is capable of organizing assignments and working alone. The art teacher, however, reported that Danny is easily influenced negatively by his peers. This has resulted in Danny's becoming involved in disruptive behavior on several occasions.

Scores on Stanford Achievement Tests indicate that Danny has made little improvement and that his overall grade equivalent is approximately 3.1. While this puts him slightly above Norman in terms of school achievement, Danny has made little or no gains in most areas for several years. The general feeling among his teachers is that he is capable of a much higher level of academic performance.

As Danny lacks motivation, he did not readily join in class activities but followed the lead of several of his peers who were displaying resistance to the program. In lesson two, when Nick exclaimed that he found the tasks to be "dumb", Danny gave him immediate support in suggesting

that the activities were nothing but "baby stuff." As has been mentioned above, this was a common objection on the part of the students to many of the activities. In hindsight, this view was also shared by this researcher and attempts were made to modify the course, although resistance may have already become too firmly entrenched by this time. This was certainly true in Danny's case.

In the next exercise, Danny continued explaining that he would not participate, because the floor was too dirty to crawl around on. In an expression of his discomfort with the class, he began to badger and hit Norman. An example of his potential ability shone through in the final activity of this lesson on "shadow play" when Danny joined three of his classmates to create an interesting group image.

Despite his ability to respond to the types of tasks being presented, on most occasions Danny chose to become nonsensical and rowdy along with many of his classmates. On other occasions, Danny simply passively resisted. For example, he leaned against a wall pouting for the duration of an entire exercise incorporating the use of hats. Danny conveyed a general message by way of his mood which seemed to stress his discomfort with the activities as well as his fear of looking silly in front of his peers. This feeling seemed to be the general feeling held by many of the participants in the program.

Perhaps it was overly optimistic to believe that

students like Danny would be able to disregard the influence of peer pressure and readily participate in such novel tasks. Some students were able to overcome their inhibitions in time and were able to participate in the course more fully. Most were unable to do so and, like Danny, remained resistant throughout.

Due to several factors including his discomfort in a novel situation and his fear of looking foolish in front of his peers, Danny seemed to benefit least from the program. With the exception of his score on originality, which was slightly below average his pretest scores were well above the group mean. His posttest scores, however, reflect an active resistance to the program. In this test, he refused to complete his test booklet despite several requests to do so. The partial scores he obtained were very far below any he had obtained on the pretest. He scored 25 on Fluency, 17 on Flexibility, 24 on Originality, and 35 on Elaboration on the TTCT pretest. His posttest scores indicate his absolute resistance to the program, and his desire to do poorly. He did not complete the test booklet, although he was encouraged to do so. His scores were 8 on Fluency, 6 on Flexibility, 10 on Originality, and 11 on Elaboration.

In hindsight, it appears the Creative Movement program failed Danny and students like him by not focusing on their agendas and by trying to get them to do things which held no relevance for them. The group experience never managed to

facilitate their learning, but remained a barrier to their becoming more involved. More attention to establishing a group rapport or spirit at the outset undoubtedly would have done much to make the experience of this course more beneficial and enjoyable for these students.

Summary & Discussion

When taken together, the results of the psychometric measures, the interviews, the journal entries, and the case studies offer a complex portrait of the role of creative movement in enhancing the divergent thinking of mildly retarded adolescents. The results of pre- and posttesting using the TTCT indicate that no significant gains were found among the students enrolled in the Creative Movement program and gains on only one dimension for those students enrolled in the Art program. An analysis of difference scores indicates that there were significant differences between individuals' pre- and posttest scores, however, the direction of these scores seemed to be random and cancelled each other in most cases. This suggests that the TTCT, as it was employed in this study, may not have offered a clear indication of the students' divergent thinking.

A second finding of major importance was the fact that TTCT and the TCAM yielded markedly different measures of divergent thinking. This suggests that each test may be

measuring different aspects of divergent thinking and creative ability. It casts doubt on the use of a single measure of creatvity and on the area of psychometric assessment of divergent thinking in general.

The analysis of the TTCT and the TCAM scores suggest that certain students seemed to be functioning on relatively high levels of divergent thinking upon completion of the Creative Movement program. An explanation of material obtained from student interviews and journal entries have identified several aspects of the course which appeared to be beneficial and revealed several limitations of the program. It would seem that a version of the program modified to correct the limitations cited would have had significant effects on the divergent thinking of its participants.

A close examination of two of the students who participated in the course offered clearer indications of its benefits and failings. The overall findings were that the course offered too little structure and this researcher was not as sensitive to the needs of mildly retarded adolescents as would have been desirable.

The findings suggest that mildly retarded adolescents can be encouraged to develop divergent thinking skills through participation in programs in either Art or Creative Movement, however, these programs must be tailored to their specific needs. Much more attention needs to be paid to

finding ways of encouraging greater flexibility of thought without presenting material which is too conceptually complex. In addition, more sensitive and reliable assessment devices must be developed for use in assessing the divergent thinking abilities of this special population.

The next chapter deals with more specific implications of this research as well as some suggestions for future research.

Chapter VI: Conclusion

The present study examined the effects of a creative movement program on the divergent thinking of mildly retarded adolescents. While the literature is equivocal as to the nature of divergent thinking in retarded individuals, there is sufficient evidence to suggest that many such individuals can benefit from attempts to enhance their creativity. Traditionally, programs in drawing, painting, and music have been used to promote the creative abilities and divergent thinking of children, adolescents, and adults. The literature on creative-movement suggests that programs using creative movement also appear to enhance the creativity and divergent thinking of those who participate. A primary aim of this research was to compare the effects of a Creative Movement program with those of an Art program on the divergent thinking of mildly retarded adolescents.

Ninth grade students at John Grant High School (JGHS), a special school for mildly retarded adolescents, who enrolled in electives in Art (N=8) or Creative Movement (N=12) were given the figural part of the Torrance Test of Creative Thinking (TTCT) Form A as a pretest measure of their divergent thinking. Each group then took part in a fourteen week program in either art or creative movement.

Upon completion of these courses, each group was given Form B of the TTCT and Torrance's movement test, Thinking Creatively in Action and Movement (TCAM). In addition, the students who took part in the Creative Movement program were interviewed at this time in order to assess their feelings about the course. This researcher taught the Creative Movement classes and kept a detailed journal of what went on during the course of the semester.

An analysis and interpretation of the data collected appear to indicate that mildly retarded adolescents are capable of divergent thinking and that their skills in this area can be improved. The results of the psychometric measures of divergent thinking offer little support for the hypotheses that the Art or the Creative Movement programs employed enhanced the divergent thinking of these mildly retarded adolescents. There was evidence that these programs were somewhat effective in that results appeared to approach significance on several dimensions of creativity. These results offer tentative support for the hypothesis that creative movement can be as effective as "the plastic arts" on the divergent thinking of mildly retarded adolescents. The results of an analysis of scores for both groups on the TCAM indicate that the Creative Movement group scored higher on all three dimensions of the test, however, these differences were not significant. While there were no significant differences between groups, there were

differences between the scores on the TCAM and those on the TTCT. This suggests that each of these tests may be measuring somewhat different aspects of creative ability.

The findings indicate that no significant differences existed between the groups on any of the four dimensions measured by Form A of the TTCT. The results of tests administered at the end of the semester indicate that there were significant differences between pre- and posttest results and between groups on certain aspects of creativity as measured by Form B of the TTCT. The overall means suggest that scores dropped for both groups on the dimensions of Flexibility and Elaboration, while improving for both groups on Originality, and for the Art group on Fluency. An analysis of posttest results indicate that there were significant differences between groups on the Fluency dimension ($p<.01$). This was the only dimension which showed significant differences on posttesting, although the Originality scores approached significance for the Creative Movement group. An examination of the difference scores for each individual within the groups yielded highly significant variability between pretest and posttest scores. This indicates that scores varied widely between pre- and posttesting, yet the overall means remained relatively unchanged. Subjects in both groups seemed to have widely disparate pre- and posttest scores with an overall trend toward slightly lower scores on the posttests.

Since perseveration tends to predominate the thinking of retarded individuals at certain times, while not at others, this might explain the high variability between pre- and posttest scores. This result promotes doubts concerning the reliability of the TTCT, since reliability has not been examined with retarded individuals.

Analyses of the interviews data and the journal entries suggests that certain benefits may have been derived from participation in the Creative Movement course which were not reflected in the TTCT or TCAM scores. These included improvements in students' abilities to express themselves nonverbally and to react more imaginatively to novel stimuli. It was felt that the short duration of the course, the overly large class-size, and the disruptions in scheduling hampered the effectiveness of the program. In addition, several failures or omissions on the part of this researcher to adapt the program adequately to the special needs of the mildly retarded students undoubtedly lessened the overall impact of the course. These limitations and suggestions for future use of Creative Movement with this population are discussed.

Case studies of the two participants in the Creative Movement program were offered to give insight into the diverse needs of the students as well as the diversity of their reactions to the program. Analysis of the case material suggests that significant cognitive and personal

growth is possible through participation in creative movement however, it also underscores many of the difficulties of its use with mildly retarded male adolescents.

Limitations of the Study

The limitations of the Creative Movement program utilized in this study have been discussed in the previous chapter. Clearly a program designed to overcome many of these limitations would be more effective in teaching creative movement to retarded adolescents. In this sense, many of the limitations of the present study are related to the program in some way. The most important of these were the inappropriate environment established, the number of subjects utilized, and the limited time frame in which the study took place. It has been suggested that the physical setting can promote movement and expression. Since the space provided was not conducive to creative movement, it may have made it harder for the group to feel secure, hence to become more daring in their responses. While the number of students in the movement program was seen as too large to teach effectively according to the design of the movement program, it was also too small a number of subjects for the type of analysis needed to test the hypotheses of this study. A more effective approach to this problem would have

been to have several smaller groups of subjects, however, this was not possible due to scheduling restraints at JGHS. The issue of time was also a function of school scheduling and was beyond the control of this researcher. Undoubtedly the program would have been different in many ways if it had been offered over the course of an entire year or if the classes had been held more frequently. The data obtained from the TTCT and TCAM suggest that significance might have been obtained if the study were conducted over a longer time period.

In terms of its assessment of changes in the divergent thinking of mildly retarded adolescents, this study was limited by the psychometric measures employed. The study has raised questions as to the effectiveness of certain measures of Torrance Test of Creative Thinking in assessing the creative abilities of mildly retarded individuals. While adaptations were made to the test by dropping the verbal subtests in order to accommodate the subjects who are traditionally weak in verbal abilities, the TTCT relies heavily on artistic abilities to the exclusion of other aspects of creativity. The use of a modified form of the TCAM, which measured creativity through movement activities, indicated different results concerning divergent thinking of the two groups of students. This suggests that the TTCT may not have offered the best assessment of the effects of either Art or Creative Movement programs on these students'

divergent thinking processes.

While attempts were made to offer alternate measures of the Creative Movement program's effects through use of structured interview, journal, and case study data, these results do not offer enough detail to draw conclusions on the hypotheses examined in this study. More careful attention in the research design to incorporate qualitative research techniques at the outset would have allowed for more meaningful integration of the quantitative and the qualitative data.

Conclusions and Research Implications

This study has offered tentative support for the hypothesis that divergent thinking of mildly retarded adolescents can be influenced by programs aimed at encouraging their creativity. Furthermore it has been suggested that such attempts to enhance the divergent thinking of these students should be pursued vigorously as an important part of these students' preparation for successful post-school adjustment. An examination of the Creative Movement program in practice underscores the difficulty these students have with novel tasks and in unstructured situations. This appears to be due to the fact that their high school curricula are geared to the routine and regimented (Murphy, 1980). This is contrary to

characteristics of flexibility and adaptability which researchers have found to be important to successful post-school adjustment (Brolin, 1976; Kolstoe, 1970). While not specifically identifying divergent thinking as essential to successful post-school adjustment, this body of literature describes skills which are non-convergent in nature. It would appear that research directed at the relationship between divergent thinking skills and post-school adjustment would shed much light on this issue.

A secondary finding of this study concerns the effectiveness of the TTCT to measure the divergent thinking of retarded individuals. The results suggest that the Flexibility dimension was influenced by the students' tendencies to perseverate while responding to these test items. The evidence of perseveration in the thinking of these mildly retarded subjects is consistent with what many researchers have found when studying the thought processes of these individuals (eg. Gerjuoy & Winters, 1965; Spitz, Carrol, & Johnson, 1975). While perseveration is clearly the antithesis of creative thinking, the sensitivity of the TTCT to its effects appears to penalize retarded subjects too severely. A more careful examination of the reliability of the TTCT in its use with retarded individuals seems warranted.

Despite the existence of several measures of divergent thinking and a substantial body of literature which

describes these thought processes as distinct from convergent thinking, there seems to be little agreement as to what divergent thinking really is. The results of the present study suggest that the TTCT and the TCAM yielded markedly different measures of divergent thinking presumably because they tap different areas of creativity. This supports the criticisms of the state of the art in the area of psychometric measurement of creativity voiced in the literature (eg. Bastos, 1973; Holland, 1968). Since much has been written recently on the importance of creativity to education (Eisner, 1982, Swanger, 1982), the need for more precise measures of creativity appears necessary if current programs are to be evaluated.

While failing to demonstrate that a short-term course in either creative movement or the plastic arts can significantly improve the divergent thinking of mildly retarded adolescents as measured by the TTCT, the study raises several issues concerning the thought processes of retarded individuals. Many students were able to demonstrate instances of highly creative behavior either in their responses to the test items or in their performance during the course. This suggests that the capability for fairly high level divergent thinking exists within retarded individuals. This is contrary to the traditional views of the relation between retardation and creative thought held by Guilford (1959) and others (eg. Katz & Giammelli, 1982;

Mehdi, 1975), though it is consistent with the views of those who suggest that outerdirectedness and other motivational variables affect the cognitive performance of retarded individuals (eg. Sanders et al., 1968; Zigler, 1973). The observation that the students appeared intimidated by the novelty of the tasks presented in the Creative Movement program and responded better to the more highly structured aspects of the program supports this latter perspective. Undoubtedly mildly retarded adolescents require more concrete directions and explanations due to their limited cognitive capabilities, however, this does not preclude the introduction of material to their school curricula which requires greater latitude or divergence of thought.

Clearly more research on the issue of the training of mildly retarded adolescents to improve their divergent thinking processes is needed. It has been noted that the brief time interval in which this study took place did not allow sufficient time for significant gains to be evidenced. Undoubtedly more meaningful statements on the effectiveness of the creative arts in enhancing divergent thinking of retarded individuals could be made on the basis of a longer and more intensive course of study. The introduction of year-long courses aimed at encouraging divergent thought as part of the regular school curriculum would offer the opportunity for such study. In addition, modifications to

the Creative Movement program described in this study would make it a more effective educational tool. Further research on creative movement using larger numbers of students grouped into classes of no more than ten students and an environment more conducive to the activities involved in the course would likely yield more significant results.

Much has been written on the use of brainstorming, creative problem-solving, and other typically verbally-oriented cognitive strategies for enhancing divergent thinking skills. The present study attempted to test the effectiveness of non-verbal artistic programs in enhancing divergent thought. It was hypothesized that mildly retarded adolescents might be more easily reached through less verbally-oriented programs. Further research comparing the effectiveness of such cognitive strategies with that of programs in the creative arts would shed much light on how divergent thinking skills are acquired while offering educators insight into which approaches work best.

It would seem that as society increases in its complexity, individuals must become increasingly more flexible and adaptable if they are to remain contributing members of the society. Educators of mildly retarded individuals confront the task of preparing their students to face these ever increasing challenges. Greater emphasis on the role of the creative arts in enhancing the divergent thinking skills of these individuals appears warranted as

one technique if educators are to increase the mildly retarded individuals' potential for success in living.

Appendices

Appendix A

Lesson Plans Designed and Utilized for the Creative Movement Program

LESSON I

Body Parts

Rationale:—

- To give the students the chance to explore their bodies through grossmotor movements.
- To allow them to experiment individually, then with a partner and while exploring the body in relationship to space.
- To allow the class to explore different qualities and rhythms with their bodies to music (eg: jerky, fluid).
- To explore the use of the body to create its own rhythms and mus.
- To utilize situations which will promote a focus on body parts.
- To slowly introduce tasks which are open-ended and demand originality and some fluency and flexibility of thought.

TASKS	CUES & COMMENTS
I. WARM-UP – in a circle – follow the leader. A/ FOLLOW TEACHER – move freely using body parts to contact floor (head, two hands, ear...) LET CHILDREN LEAD – passing the lead. B/ BODY PART TO BODY PART – examples are called out then have students call out ideas. – teacher leads again – cues very fast then slow motion.	CLASS responded but with a minimum of enthusiasm A/ "Everyone touch your hands to the floor! One knee..." – very few offered ideas willingly. They had to be coaxed alot. "Think of something else, a different body part – anything." B/ "Touch your elbow to your knee, hand to foot..."

TASKS	CUES & COMMENTS
II. PARTNERS - body part to body part.	- Some attempted the exercise but they didn't appear to fully understand the task.
A/ ONE PARTNER COPY THE OTHER - THEN SWITCH. - some slow, some fast movements. - now copy three movements in a row.	A/ "Make it only as difficult as your partner can follow". - Perhaps working in pairs was too demanding for the novelty of the situation - "Try not to repeat ideas. Think of new ones." - "Don't rush - take your time."
B/ COPY MOVEMENTS OF THE FACE - three movements then switch.	B/ "The face has different parts - isolate your movements (eyebrow, cheek...)"
C/ TOUCH DIFFERENT PARTS WITH PARTNER - no one leads just move to music. - Different levels, counterbalance, take weight.	C/ "Try to touch more than one part with your partner (eg: everyone try touching elbow to back and a hand to foot)" - "It's like doing 'the bump'."
	- Didn't do exercises II B/ or C/. Felt the class was not able, at this point, to assume the responsibility that this freedom demands.
III. Moving ACROSS THE FLOOR	A/ "Quick come back and offer another idea" (wrist, hip back shoulder) "Think of another new one. Your own idea - Go!" - Worked well, although there was hesitance. Several of the students willingly offered their ideas to the group. They seemed to enjoy it.
A/ Allowing a body part to lead you from one corner of the room to the other	
B/ MAKE BELIEVE - one leg is wounded and you have to get it to the other side of the room to safety. - Now both legs are lame.	B) "Try moving a different way". - The group had become tired of the exercise so Part III B was passed over.

TASKS	CUES & COMMENTS
IV. MACHINE	
A/ use BODY to make SOUNDS	A/ "Can anyone make a sound using only your body?" "Another one, a different type."
B/ EVERYONE DOES A MOVEMENT WITH ONE PART OF THE BODY	B/ "Keep it going."
C/ GROUP MOVEMENT - one person starts and one by one individuals join in to create a group movement.	C/ The demonstration by the researcher and P.E. teacher was not convincing.
D/ REPEAT USING DIFFERENT MOVEMENT WITH A SOUND.	D/ "It's like we are each a different moving part of a machine!" - Perhaps this task was too abstract for the group to grasp.
ADDITIONAL MOVEMENT SUGGESTIONS - Robot, puppet and master - You're on fire - Put it out - it's spreading from one body to another (itchy) - swallowed earth-quake pills - trembling builds from one part to another - whole body explodes!	- didn't need added suggestions.

LESSON II

Body Shapes

Rationale:

- To give the students an opportunity to explore the concept of levels, shape and body line.

- To allow the students to naturally experiment with the shapes that their bodies can create and then through demonstrations by peers they might begin to learn about their own bodies' capabilities and limitations.

- To introduce visual ideas which will allow the students to explore the concepts discussed above.

- To allow the students a chance to explore these concepts while in motion (using transitions of time: fast-slow) and letting the music guide the movements.

- To introduce tasks which will provide the students the opportunity to produce responses which are fluent, flexible, original, elaborate and imaginative.

TASKS	CUES & COMMENTS
I. MUSICAL SHAPES A/ Run around gym - and when music stops students "freeze". B/ Copy a shape - first the teachers, then the students.	A/ - "Notice the shape your body is making" - "Look at the shapes your friends are making." - "Make the next shape really interesting" B/ "Everyone copy my shape" "Copy (eg: Joe's) shape!"

TASK	CUES & COMMENTS
C/ When music stops become a round, long & thin, wide or twisted shape. (one shape at a time)	C/ - I had to continually remind the group what shape we were to become.
- It is planned that students will become tired from running, so that the stage (a more confined space) can be utilized as opposed to the gym.	- Some ran, some walked, and some fooled around, but overall the students appeared to enjoy these activities, but seemed to become bored easily.
II. SPEED GAME	
A/ Call out the different shapes that were explored. Faster & faster.	A/ - The desired shape was emphasized through inflection of my voice, and at times when necessary, a demonstration was given.
B/ Embellishments on the same shapes.	B/ "Let's see the same shape but make it bigger, smaller, a different way, in the air".
III A/ Become a VEGETABLE	III - Ideas to aid students if they are having difficulties with this brainstorming activity.
LONG & SKINNY	A/ carrot, string bean, corn on the cob
ROUND	- potatoe, cabbage, lettuce Different ways → chips, french fried, mashed Different types → Romaine, Iceberg, Boston. - pumpkin - "Give it personality" (happy, sad, mad)
B/ Become a BOTTLE	B/ "Make it a different shape, another one!" eg "Let's see a fat bottle with a long skinny neck".

TASKS	CUES & COMMENTS
C/ Become a LETTER of the alphabet.	C/ eg.- become the letter "T, C, S, X, Y, L, O, M. - "Make it a different way- on the floor, standing, in the air."
D/i) Become a DONUT ii) A new kind of donut	D/i) eg:- jelly, munchkin, twisted, with a hole. -ii) "Make up your own type of donut and give it a name". - Didn't do this part (D/ii) - The activities in section III appeared to insult & intimidate many of the students.
IV OCEAN	
A/ Have the entire group of students lie down on their backs, head to toe. - The most creative & physically capable students should be placed in the middle and at the ends of the chain.	A/ "Everyone get really close to the people beside you and hold hands with them". - Encountered many difficulties with this activity in getting students to hold hands and remain in position.
B/ Embellishments - Do the exercise in two groups. - Allow the students to stand	"When you hear the music you can begin moving, but you may not let go of your partners' hand or "stand up".

TASK	CUES & COMMENTS
V SHADOW PLAY - using an overhead projector to cast light, have the students experiment with shadows. (body shapes) - first individually - in pairs - in groups or the whole group.	"I am going to put on some music and one at a time I want you to have fun making shadows!" - They really enjoyed this activity especially when they all worked at the same time. - The music did not appear to stimulate them, so a drum was utilized. The students took turns setting the rhythm.

LESSON III

Locomotion and Imagination

Rationale:

- To give the students an opportunity to explore different ways of moving.

- To allow them to use their imagination by suggesting different situations and then allowing them to create their own characters and situations with the aid of props (hats) and finally with only their imaginations.

- To introduce tasks which will provide the students the opportunity to produce responses which are fluent, flexible, original, elaborate and imaginative.

TASKS	CUES & COMMENTS
I DIFFERENT WAYS TO MOVE	
a) from point A to B - suggestions: walk, run, skip, hop, jump, crawl, roll, backwards, sideways.	a) - A drum as well as verbal cues was used as a signal to start movement. "Think of a way of having to get from this side of the room to the other, go!" "A different way" - Many good responses were offered.
B) Using only one leg, no legs.	B) "You are in the middle of a war and you find yourself wounded. One of your legs is lame but you must get to the other side of the room to safety - Go!" - The group ran wild before this suggestion was even completed. They calmed down and were reminded that the drum-beat

TASKS	CUES & COMMENTS
	was the signal to commence moving.
II PATTERNS	-Used demonstrations at first and once secure called out different patterns
A/ Running in a circle, zig-zag, spiral, cutting corners (left & right)	A/- "Faster, slow-motion, backwards" - The students participated but with a minimal of enthusiasm.
III IMAGINE	
A) Class in a big circle. Imagine the ground is: - Sticky & you can't move - Very hot, move fast your feet are burning. - Slippery	A/- The students responded to "sticky" & slippery but not to the suggestion "very hot". - Many of them stood still in rebellion. They appeared not to like the tasks being presented.
IV ENVIRONMENTS	
A/ Suggest different situations :-	
- Quicksand	- "You're in a jungle and you fall into quicksand - pull yourself out and run (to the corner of the room) to wash off the muck under the waterfall."
- Wind	"The wind is blowing very hard but you try to resist, you become very cold, but you continue to climb the mountain"
- Cold	
- Thirsty	"You get to the top & run (to the centre of the room) where you drink & drink because you are so thirsty.

TASK	CUES & COMMENTS
- Hot	"The sun is so hot on the top of the mountain that you start swimming in the water!"
- Breathing relaxed	"Faster, faster - now you float on your back with your eyes closed listening to your breathing. and allow it to slow down. Take deep breathes and relax.
	- The group participated but with reluctance.
V IMAGINE	
A/ - Have students lie down eyes closed and put on music.	A/ "Picture a scene. Make it so real that you could see the colour of things, smell the odours, hear the sounds. Imagine that you are part of scene and visualize the actions that would go on."
	- Didn't have time to do activity V.
VI HATS	
A/ Pass out one hat to each student. Have them change hats when it appears that most of them have become exhausted of ideas.	A/ "Become the character that you think may have been wearing such a hat. Change hats."
B/ Scene	B/ "Imagine your character in a scene - doing something - become that person.

TASK	CUES & COMMENTS
C/ Imaginary hat. - At the end of the activity, have the students guess what type of characters their peers were portraying.	"Think of a type of a hat you would own. Put on your imaginary hat and become the character that would suit this hat". "Interact with others as your character so that they will be able to guess what hat you are wearing". "Remember, no talking!"

LESSON IV

Props & Believability

Rationale:

- To give the students the opportunity to review some of the activities which they were exposed to in a previous lesson (lesson II - Body Shapes).

- To allow the students to explore their imagination through practise exercises in believability (first with the aid of props, and then with imaginary props.

- To offer exercises with props that promote thinking which is fluent, flexible, original, elaborate, and imaginative.

TASKS	CUES & COMMENTS
I REVIEW SHAPES	
A/ Twisted, round, long & thin, wide	A/ - Call shapes faster & slow motion - "Make it bigger, smaller." - "Make the shape in the air."
B/ Have students run & freeze in any shape they choose.	B/ - "Hold your shape, now move around trying to stay in the same shape."
- Tell them to change shapes & to pick something different from anyone else.	"Give your shape a personality and even a name, believe that it is a real living breathing being of that shape.

TASKS	CUES & COMMENTS
II IMAGINATION WITH GAMES	
A/ Tug-o-War - with a thick rope have the class compete in a tug-o-war. - First seated and then standing.	A/ "Concentrate on your positions & the muscles you are using" - Then have them replay an imaginary tug-o-war in slow motion without a rope. - Did not take the imagination part of activity II A seriously.
B/ Rope Swing - Two students swing the rope back & forth - Alternating one player from each team take turns jumping over the rope.	B/ "Each person must think of his own way of getting over the rope. It must be different from everyone elses." - The team with the greatest number of original responses is the winner. - Very few of the students felt confident or motivated enough to participate.
C/ Mud Throw - start with a simulated dodgeball game using bean bags. - Have the students think of different ways to throw their beanbags to hit their opponents. Alter the rules accordingly. - Take away bean-bags and have them play an imaginary game.	C/ "Everyone must throw underhand" eg "What is another way?" "Under one leg, good! Now you can only throw under one leg" "Imagine that you are surrounded by mud & having a mud fight against the other team. Concentrate believe what you are doing, go!" - Students were not adhering to the rules & were becoming agressive so we moved on to another activity.

TASKS	CUES & COMMENTS
D/ Limbo	
A/ Different ways of going under a rope (a skipping rope is held by two students) without touching it. -At intervals the rope is slightly lowered	-"Think of a different way, something noone has done yet". - The majority of the group responded well to this activity, perhaps because of its less competitive nature.
B/ Different ways of getting over the stationary rope -At intervals the rope is raised slightly.	
E/ Hoops	
- Music is put on and the students are asked to do as many things as they can think of while playing with their hoops.	-IDEAS: Roll it, and dive through it, Spin it and run around it, back spin it. - Class worked very well, and several demonstrations by the students were offered.
III HOOP GAME	
-In groups of two or three the students are to create a game of their own incorporating one or many hoops, and were asked to give the game a name.	- The students were given a few minutes to play and "experiment and then each group demonstrated their original game to the class - Several of the groups had come up with original & fun games. -Perhaps having the students demonstrate their efforts in front of the class was a good motivating factor for some

TASKS	CUES & COMMENTS
	of the participants, but also appeared to be intimidating to others of the group.

LESSON V

Believability & Relationships

Rationale:

- To give the students the opportunity to review some of the material which they were exposed to in a previous lesson. (Lesson I - Body Parts)

- To allow the students to explore their imaginations through practise exercises in believability (first with the aid of props then with imaginary props) while being conscious of their relationship with their partners.

- To offer exercises with props that promote thinking that is fluent, flexible, original, elaborate & imaginative.

TASKS	CUES & COMMENTS
I SIMON SAYS - used a review of body parts - first teacher leads, then the winner of each game is the leader.	- Worked extremely well. Everyone participated with much enthusiasm. - Perhaps the fact that the game was familiar to the group gave the students a sense of security.
A/ Each child takes a turn performing a movement of his own choice which the group would follow immediately thereafter - The lead is passed around the circle so that everyone is compelled to initiate a movement through an idea of their own.	A/ - Responses for the most part were extremely creative.

TASKS	CUES & COMMENTS
B/ Change chairs	B/" Change chairs with someone without touching the floor- everyone at once, go!"
	-Results could have been disastrous, however the group responded calmly and purposefully.
C/ Two students seated on their chairs in the middle of a circle are asked to move to music	C/-Too intimidating. Moved right into activity II D
D/ Whole group moves to music using their chairs.	D/ eg: "Build something with the chairs" -The group moved very innovatively together as they created an interesting wild choreography.
III ROPES	
A/ In partners, each pair has a rope and one partner leads the movements while the other partner follows.	A/" Notice how you must move according to how your partner directs."
B/ Imaginary Rope -The same task is presented but without a rope.	B/"Imagine you are holding a three foot rope. Try to keep the tension between you so that when one of you moves, the other must follow".
	-Several of the students were able to concentrate for short periods of time.

TASKS	CUES & COMMENTS
IV. ADDITIONAL SUGGESTIONS	
A/ Imagine a glass booth	A "Run! Freeze! Imagine that each of you is in your own room & the walls are closing in on you from the sides. You try to resist, but now they are closing in from the front & back. They stop. You've trapped. Suddenly water starts gushing in & your cubical is filling up. You swim to the bottom and feel around to find a trap door and crawl out."
B/ Telephone booth - everyone tries to squeeze into a small space.	B/ "Come on, squeeze in, pile on one on top of the other". - Didn't use additional suggestions.

LESSON VI

Concentration & Effort Actions

Rationale:

- To introduce a task which will allow the students a chance to focus their energies in order to achieve a greater state of concentration.

- To give the students the opportunity to further explore their imaginations (through tasks incorporating effort actions) while being conscious of their relationships with their peers.

- To offer exercises which might promote thinking which is fluent, flexible, original, elaborate and imaginative.

TASKS	CUES & COMMENTS
I CONCENTRATION - A steady beat is maintained by hand-clapping while the active participant calls out his own name and a member of the groups name, in rhythm in order to pass the lead.	- This task was perhaps too stationary an activity to be in such a large, bright space, for the group appeared distracted and it was a battle to get even a few students to participate.
II EFFORT ACTIONS	
A/ Action words - the students react to actions being called out.	A/ eg "Punch, squeeze, slash, smash, float, fly, hop, shake slide, roll, crawl, slither, run jump, explode & fall! - The students were uninterested & resistant.

TASKS	CUES & COMMENTS
B/ Action Tasks -sustained types of action ideas.	eg: "Push, pull, pick up & throw, chop, saw, (faster and in slow motion)
	- The students had ceased responding by this time the lesson was stopped and the group was told to sit on the bench. Only the students who really wanted to continue working were included in the next activity.
II BUILDING A HOUSE - Take the group through a step-by-step process on how to build a house. - Have the students participate in the imaginary work that must be done in order to accomplish the task at hand.	- As a small group of seven, through the use of mime, we went from mixing the concrete for the foundation we had dug, right through to the point where all seven of us lay down beside the working fireplace enjoying our finished product
	-working in a small group helped eliminate many of the problems encountered with the large group
IV CATS	
A/ Have the students lie down and listen to music.	A/- "Imagine a cat. See its shape colour, facial expressions, body movements, and distinct characteristics

TASKS	CUES & COMMENTS
B/ Have the students become the cat they imagined.	B/ "Become the cat you have imagined" "Now move in slow-motion thinking about each movement"
C/ Task	C/ "Give your cat a task, something to do or play with!"
D/ Personality & Interaction	D/ "Give your cat a personality with mannerisms, characteristics of his own" "Interact with the other 'cats' in the way you think a cat would."
	- Due to discipline problems previous, we did not have time to do exercise IV.

LESSON VII

Physical Freedom

Rationale:

- To introduce a warm-up which incorporates activities which are familiar and desired by the students (Basketballs)

- To give the students the opportunity to further explore their imaginations (through tasks which allow one to explore the characteristics and movements of different animals by means of play-acting and tasks which allow one to explore the self through the use of masks).

- To offer exercises which might promote thinking that is fluent, flexible, original, elaborate and imaginative.

TASKS	CUES & COMMENTS
I BASKETBALLS	
A/- Spread out in a circle and have the students call aloud different types of throws that they are able to invent.	A/- The students appeared to resent having to think about their actions. and soon began ignoring the instructions given.
B/- Relays (two groups of students) ways of travelling with a basketball.	B/ Students who were waiting for their turn seemed very impatient
- One person demonstrates their idea and both teams relay doing the activity	- The structure of this activity was lost when a student dribbled up to a basket and took a shot. The rest of the team joined him.

TASKS	CUES & COMMENTS
- Have a final relay where each student uses his favorite way of moving with the basketball.	
	- Soon Thereafter the physical education teacher stepped in and suggested that we were going to play a game of basketball. Needless to say, the lesson was cut short as the teacher, students and myself played a game of basketball.
C/- Same type of relay activity (using two baskets) inventing different types of shots.	
II CATS	
A-D/ refer to lesson II	
III STILL-LIFES	
A/- In circle formation each student chooses their favourite animal and portrays it through a still-life pose.	A "Imagine a still-life picture of your favourite animal" "Show us what the picture looks like by you becoming the animal in its pose."

TASKS	CUES & COMMENTS
B/ Interaction (Have the group change the animal they are portraying several times)	B/ "Choose a different type of animal and make everyone believe you are that animal". "Choose an imaginary animal, something you've never seen before and give it a name. Become your animal
IV MASKS	
A/- Give each student a mask.	A/ "When you have your mask on & the music is playing become a stereotypical type of personality. When the music stops become the completely opposite personality".
B/ Interact	B" Interact with the group in these Jekyll and Hyde personalities."

Appendix B contains previously copyrighted material which may be obtained from the following source:

Thinking Creatively With Pictures

Booklets A and B

Scholastic Testing Service, Inc.
480 Meyer Rd.
Bensenville, IL 60106
U.S.A.

Appendix B

Forms A & B of the Figural section of the Torrance Test of Creative Thinking (TTCT)

Appendix C

The Thinking Creatively in Action and Movement Test (TCAM)

Appendix C contains previously copyrighted material which may be obtained from the following source:

Thinking Creatively in Action and Movement

by F. Paul Torrance

Scholastic Testing Service, Inc.
480 Meyer Road
Bensenville, IL 60106
U.S.A.

Appendix D

Questions Used in the Post-Program Interviews with the Students

Questions

1) Did you enjoy the program? Why or why not?

2) What activities did we do that you liked? Disliked?
What things were done that should not be done the next time. Why?
What things would you have enjoyed doing that we did not do? What could we have done more of and why?

3) Do you feel that the class as a whole went well?
Why or why not?
What could have made things work (even) better?

4) Did you enjoy working with music?
Why or why not?

5) Do you feel that you learnt anything? If so, what?

Appendix E

Questionnaire and Summary of Written Responses by the Physical Education Teacher on the effectiveness of the Creative Movement Program

Questionnaire

1. Do you feel the movement program ran smoothly and was well received? Why or why not?

2. Were the lessons appropriate and well planned? Was the teacher able to adapt his lesson plan when neccessary?

3. Discuss the major drawbacks and positive features of the class and the testing sessions? What could have been done differently?

4. Do you have any suggestions for future implementation of such a program?

Responses

1. No! The program did not run smoothly, nor was it well received by the majority of participants. The class was too large and the students were of varied ability. It contained many behavior problem students and was therefore full of disruptions. The majority of participants were totally uninterested and did not possess the neccessary listening skills.

2. The lessons were well planned and showed progression, however, they often ended with abstract tasks to which many participants had difficulty reponding. The teacher was able to adapt the lessons whenever necessary.

3. Major drawbacks and problems with the program included:

   The class size was too large and the students were not willing to co-operate. There was a lack of class control due to disinterest and disruptions. The program lacked continuity due to high absenteeism. There was also an insufficient number of demonstrations

by the teacher or students. Students could have been screened before the program to avoid some of the problems encountered. The program might have worked better had the classes been shorter.

Testing problems encountered included:

The students were noisy and did not follow the instructions given. They also did not abide by time frames given to specific tasks. The students tried to copy from one another and at times appeared to be consciously trying not to be creative.

4. Suggestions for future implementation of such a program included:

The experimental group should be screened in advance. It should also be much smaller in size as well as co-operative. If not for administrative rigidity perhaps the program might have been ideally given every second day to allow for maximum carry-over value.

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