CREATIVE DANCE & PRE-SCHOOL CHILDREN'S ART

CREATIVE DANCE & CHILDREN'S ART: AN EXPLORATORY STUDY OF THEIR RELATIONSHIP IN PRE-SCHOOL CHILDREN

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ABSTRACT

There is considerable non-quantified literature on the educational values of creative experiences in several sensory modalities. Exponents of aesthetic education in general and Creative Dance in particular hypothesise that these experiences transfer across the modes of expression.

This study investigated the effect of a twelve week programme in Creative Dance, based on selected aspects of Rudolf Laban's Sixteen Basic Movement Themes, on the art products of pre-school children. Forty children attending the Whiteside-Taylor Centre for Cooperative Education were randomly assigned either to the Treatment Group or the Control Group. One pre and two post tests were done, the products being assessed by six judges; (minimum combined coefficient of reliability = .88). Null hypotheses were set up.

Analyses of the results showed there was no significant difference in the art performance of the Treatment Group when compared with the Control Group; neither was there any measurable difference in art performance of either group due to growth factors. The null hypotheses were confirmed.

Recommendations were made regarding future similar studies.

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I. INTRODUCTION

In educational circles there has long been an interest in aesthetic aspects of education, in art, in movement and in expression of artistic ability. In recent years much of this interest has been renewed under the term of 'creativity'. Its effect has been noticed in the development of curricula, in the working out of teaching strategies for its development or the arrangement of conditions in schools to foster creative potential. Work has been done at all levels of the school system, in colleges and universities. Many educators believe that such creative talent can only develop if allowed the opportunity in the earliest years of schooling, preferably beginning in the kindergarten or other kinds of pre-school situations.

Whilst many statements of a general, and often unsubstantiated, nature have been made in the area of creative experience, there has been a general belief that experience in one art form, or in one kind of creative experience, is not enough. Statements have been made in favour of providing opportunities for early experience in more than one medium. Those couched in more psychological language have argued that the benefit, or effect, of creative experiences in one modality will transfer to activities in another modality. Often these statements are in the general area of the effect of art expression upon the development of personality or literary expression. Exponents of the Creative Movement and Creative Dance have claimed that their expressive mode will favour development in others, notably in art. However, no serious attempt appears to have been made to test these statements should they be expressed in the form of a direct prediction.

Whilst it is important to test these beliefs and statements with children of any age, it is particularly important to do so with young children, especially since time, effort and money are being expended upon the building of schools, designed to facilitate learning through creative activities, and the development of programmes for teacher education, programmes which involve the acceptance of such untested beliefs as an underlying rationale for dealing with children. The opening of the Whiteside-Taylor Centre for Cooperative Education provided an opportunity for a quantitative investigation to be undertaken.

This school, located in Baie d'Urfe, admits children between the ages of three to five years. Most children remain in the school for one year only. Whilst it would be desirable to use all the children and for the whole school year, the general operating mode of the school - two distinct sessions with different groups of children, and the general and gradual introduction of the children to cooperative experiences in groups - imposes limits on the kind of experiment involving some measurement techniques as opposed to mere observational techniques. Access to the children was limited to those attending in the afternoons and for the second term, post Christmas, of the school year. The children had had some experience, along lines providing free expression of activities and interests, of being together and under the supervision of adults other than their own parents.

Within this framework an experiment was proposed which would investigate the effect of twelve weeks of experience in Creative Dance, utilizing some of the sixteen movement themes developed by Laban, upon the art products of children of this age. This imposed restrictions

on the kind of art expression which would be available and whose results could possibly be quantified, but if the general beliefs of exponents of creative activities, including cross modal transfer effects, were to be substantiated it would be expected that the children following a programme of Creative Dance would show more improvement in their art production than those children who did not.

II. REVIEW OF LITERATURE

Over the years there has been much speculative writing on the beneficial effects of creative experiences on children's artistic development and personality growth. Several writers (Bruce 1965, Hawkins 1964, D'Houbler 1962, Murray 1963, Russell 1965) have reached conclusions of some beneficial effect after many years of experience in the teaching of children of all ages, but it is only recently that "systematic educational research in creativity" has been undertaken (Getzels and Madaus 1969). Indeed research into any aspect of creativity has been minimal when compared with other psychological investigations, e.g. testing and learning. There is an increasing amount of interest in creativity, partly due to the influence of economics and politics on the development and application of innovative ideas (Tyson 1966) but even so, in 1965, publications on this topic were still less than one per cent of those listed in Psychological Abstracts (Guilford 1970). Guilford suggests there are four main problems responsible for this lack of research.

1. The establishment of a practical criterion of creativity.
2. The "function fluctuation" in an individual's creative performance making test results low in reliability.
3. Present-day methodology, allowing only certain aspects of creativity to be measured by "objectively scorable types of test items."
4. The formulation of learning theories after research with lower forms of animals results in the tendency to exclude creative activity.

The research that has been conducted generally falls into one of three categories.

1. creative experiences and personality changes (Miles 1962).
2. relationship between early and later development (Baron 1969).
3. relationship between I.Q. and creativity (Getzels and Jackson 1962).

There appears to be a paucity of research dealing with creativity in young or pre-school children which covers more than one sensory mode, or mode of expression. Most "research related to art and art education has been concerned with problems of description and measurement. There are not many experimental studies in which some treatment is applied or some hypothesis put to a test." (Beittel 1960) In particular a noted authority* on child growth and development states that no research has been done on the relationship between creative dance and the art of pre-school children. Indeed there appears to be a lack of investigation into the nature of pre-school children's art work generally (Brittain 1969) and there is need for longitudinal studies in the dynamics of child creativity (Rhodes 1956).

General theories of the nature of creativity have been proposed; some are very restrictive and omit vital characteristics, others are so general they become "an inventory without an underlying rationale" (Getzels and Madaus 1969). Each kind of theory accepts certain of the following assumptions; the first assumption suggests that there is a positive correlation between creativity and intelligence (Getzels and Jackson 1962); the second assumption is "that all individuals possess

*Dr. Ruth Hartley, College of Human Biology, University of Wisconsin, in a personal communication to the writer, May 1971.

to some degree all abilities"; the third assumption, itself a theory, is Guilford's (1950) "factorial conception of personality". The concept creativity is defined in one of three ways. This may be in terms of:

1. "The manifest product - it is novel and useful."
2. "The underlying process - it is divergent yet fruitful."
3. "The subjective experience - it is inspired and immanent." (Getzels and Madaus 1969)

Torrance (1965) in explaining his research programme since 1958, which is concerned with "the identification, development and utilization of creative talent" states that "Although attention has been given to the period from kindergarten through graduate school, concentration thus far has been on the elementary school period." Research conducted by Jones (1961) with Grade Six children and Frankston (1963) with Grade Eight children lends support to this statement. However, studies have been done with students in their early years at the University (Campsey 1965, Little 1966, Miles 1962), probably because of the availability of the subjects. Research during the nursery school period has been confined to evaluating the effects of the total environment on the child rather than measuring "the extent of this beneficial effect" or isolating "those factors appearing in later life which could be directly attributable to nursery schooling" (van der Eyken 1969). Studies conducted in England and the United States on the presumed beneficial effect of nursery school experience, have tended to be unconvincing for two reasons; the small size of the samples and the difficulty of identification "in the natural development of any one child (of) the particular effects of either its nursery-school environment or its home upbringing." (van der Eyken 1969).

The British concept of creativity has tended to be that of self-expression rather than the North American concept of process-product. British education has, particularly for elementary school and pre-school children, included many opportunities for self-expression through movement, painting, music, poetry and creative writing. Professor Pauline Johnson (1965) has expressed concisely the British belief that "There is no better way to develop creative capacities in children than by means of the arts. They teach the child to be constructive and to bring forth something new and unique that has passed through his mind. As the great humanizers of life, the arts make him appreciative of life and sensitive to growing things and helpless creatures. As related to a great creation, he sees himself as part of the total plan of life." In the nursery schools wide acceptance is given to "the child's own eager spontaneous play" * and sand, water, clay, building blocks, clothes for dressing up, a Wendy house etc. are all considered essential equipment. It will be noticed that the use of some of these materials could have been attributed to Freudian influences, influences which have been particularly important in fostering the development of the Nursery School Association (Isaacs 1932, Rickman 1938, Bowley 1943).

One problem resulting from the self-expression concept of creativity is that of knowing where self-expression ends and purely permissive behaviour begins. Having such an ill-defined term as self-expression as an educational principle could lead to negative as well as positive experiences for the child and his peers. Rogers (1959) when discussing conditions which foster creativity, suggests psychological freedom as one condition. This would appear to be the North American

* Address given by Dr. Ruth Hartley to the closing meeting of the Council for Childhood Education, Montreal, October 1970.

equivalent of the British concept of creativity as self-expression. He explains it thus: "When a teacher, parent, therapist, or other facilitating person permits the individual a complete freedom of symbolic expression, creativity is fostered." The term "symbolic" is the keyword; if "behaviour" is substituted then the psychological freedom, a necessary condition for creativity, is not achieved. Besides outer conditions Rogers also recognises three inner conditions of the individual; an openness to experience or extensionality, an internal locus of evaluation - "an actualization of potentialities within himself" plus the ability "to toy with elements and concepts."

If idiographic description is to give way to a nomothetic approach, some measurement of the product or process is necessary. Possibly one of the primary questions to be asked about attempts to measure creative behaviour in young children is "For what purpose?". Torrance (1965) suggests that the following five possible outcomes justify continued research with young children:

1. The measurement of creative behaviour in children can be a means of obtaining a more complete understanding of the human mind and personality and their functioning.
2. The assessment of creative behaviour among children may be a basis for developing individualised instruction.
3. The assessment of creative behaviour may be part of the process of guiding mental growth, as an indicator of mental health and as a source of clues for remedial or psychotherapeutic programmes.
4. Information obtained may be useful in evaluating differential effects of teaching methods, experimental programmes etc.

5. Information may be obtained giving indications of growth potential and future guidance needs.

At the idiographic level research with adults has led psychologists, (Jones 1961, Rhodes 1956, Simon 1967) to assert "that there may be a common basis to creativity in both science and the arts" (Tyson 1966), the process involved being identical, but the products varying widely. Rhodes, however, differentiates between an inward and an outward orientation to creativity, the former leading to artistic creativity, the latter to discovery and invention - the scientific. Guilford's research and the resulting development of the theory of the structure of intellect (Frankston 1963, Tyson 1966) has added considerably to the theory of generality. Guilford lists eight attributes which are common to creative individuals:

1. sensitivity to problems.
2. flexibility.
3. fluency.
4. originality.
5. the ability to analyse.
6. the ability to synthesise.
7. the ability to organise.
8. the ability to redefine.

Irving Taylor (Tyson 1966) considers there are five levels of creativity, that differences occur in depth and scope of creativity rather than whether it is artistic or scientific. He lists these in a hierarchical form:

1. expressive creativity, e.g., spontaneous drawings of children. This is the most fundamental form and is probably necessary for the emergence of higher forms.

2. productive creativity; this involves restriction of the "free play" seen in stage 1 and is more technical in nature.
3. inventive creativity, involving flexibility of perception.
4. innovative creativity when significant modification of an established principle underlying a whole field of science or art occurs. Cubism is cited as an example of innovative creativity.
5. emergentive creativity is considered to be the most fundamental and abstract level, when an entirely new principle is the product.

There is support (Little 1966, Rhodes 1956) for the theory that creativity has four interrelated components; the person, the process, the product and the environment. However, of these four, one is a static, non-changing component - the product.

Approaches to the definition of creativity can, therefore, be "person-oriented" in which case the focus is "on the psychological processes that issue in creation" or "object-oriented ..... more concerned with what is created" (Edwards 1968) that is the product (Gowan and Demos 1967). In both cases an important component is the medium used. Even when the main focus is on the process, the product should be discussed as it "is a reflection of an individual's thought process" (Frankston 1963) and part of a continuum. Three different definitions follow to show the varying foci mentioned:

1. "Creativity is action by an individual through a medium. There are many avenues in human experience for creative potentialities and the character of the particular media

they offer." (Barkan, Manuel. A Foundation for Art Education. N.Y. The Ronald Press Co. 1955, cited in Linderman and Herberholz 1970).

2. "The emergence in action of a novel rational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people or circumstances of his life on the other." (Rogers 1959).

3. "Creativity refers to the abilities that are most characteristic of creative people. Creative abilities determine whether the individual has the power to exhibit creative behaviour to a noteworthy degree." (Guilford 1950).

On a more nomethetic level Guilford's (1950) notion of a "creative personality" being at the centre of creative behaviour is supported by Getzels and Madaus (1969) who conclude there appear to be "patterns of characteristics which distinguish creative individuals with some consistency." The pattern includes humour, willingness to take risks, "greater interest in thought and beauty and of rejection of the pursuit of material goods and mere gregariousness or conventional sociability as barriers to self-expression, intimacy, and individuality." High creatives "seem more expressive of impulses from within that are frequently inhibited, and descriptive of experiences from without that are often denied." (Getzels and Jackson 1962). One of the differences found between students with a high I.Q. and those who were highly creative was that the former tended to be "stimulus-bound", using a more convergent mode of operation whereas the latter were "stimulus-free" - divergent in their production using the initial idea purely as "a point of departure for self-expression." (Getzels and Jackson 1962). There is

some criticism of this very ambitious study, one being "the notion that there are two separate groups or types each characterized by a distinctive kind of intellectual ability." (Burt 1962). In order to deal rationally with material and stimuli provided, intelligence is essential. Getzels and Jackson imply that one can exist independent of the other. This finding is due to the particular design of the study which eliminated students who initially scored high on both creative and intelligence tests (de Mille and Merrifield 1962).

A well-known Canadian artist, Gino Lorcini, in a discussion on the creative response (Harley 1967) considers there are six stages along the continuum of creative process. Other writers (Linderman and Herberholz 1970, Tyson 1966) suggest four. Common to all these ideas is the initial motivation or awareness of the existence of a problem, the need for definition of the problem, the actual working through with the possibility of finding a solution or giving up and the emergence of a solution.

Studies (Little 1966, Mackler and Shontz 1965, Rhodes 1956, Gowan and Demos 1967, Torrance 1970) stress the importance of the environment on an individual's creative performance, the basic assumption being that everyone possesses to some degree a measure of creative ability, (Guilford 1950, Gowan 1967). Rogers (1959), besides referring to the psychological freedom already mentioned, considers "psychological safety" as an important condition fostering creativity. This involves the acceptance of the individual as of unconditional worth, providing a climate in which external evaluation is absent and also understanding empathically. This is supported by the findings of others - that there are indeed "facilitations and restrictors in the environment that affect

creativity differently." (Mackler and Shontz 1965). Torrance (1970) goes further, saying that social and cultural pressures interfere with children's creative development "causing them to sacrifice their creativity."

Two methods of increasing individuals' creative problem-solving performance have been devised for adults who may not have had the "necessary stimulation" of their sensory mechanisms during their early years of life, an essential for releasing creative power (Linderman and Herberholz 1970). These methods, brainstorming and synectics, have both proved to be successful (Barron 1969) and are used fairly intensively in industry.

The method that has been investigated to some depth with adults is that of brainstorming. More controlled studies do not support the fact that individuals produce more and better ideas when in groups, although maybe initial group participation is useful. Torrance (1967) in his work with children also found that "instructions to produce a large number of ideas without regard to quality resulted in fewer responses than did instructions to produce interesting, clever and unusual ideas." (Getzels and Madaus 1969). This is a somewhat surprising result. Possibly, the psychological equivalent among children of brainstorming in adults, would be early experience with a multiplicity, not merely of stimuli, but of sensory modalities. Integration of multiple experiences in several sensory modalities is supposed to relate to the development of aesthetic experience, a development which transcends, and may not relate to, synaesthesia (Galton 1868). This, plus the knowledge that "during pre-school years the child is more impressionable, that each experience is more important than ever again in his life" (Norris 1958) are factors

in support of an aesthetic education for all children. Contrary to previous belief the human organism does not seek a homeostatic state but is "a stimulus-seeking organism". This can be seen in the satisfaction an infant achieves through discovery and exploration (Getzels and Madaus 1969).

The importance of wide experience using all the senses is stressed by Mackler and Shontz (1965) who write "Individuals in their uniqueness utilize their senses preferentially; the various sensory modes of experience, communication and symbolization are employed uniquely by each person." Torrance (1965) has reached the conclusion that "it is quite clear that some individuals respond more creatively to things that they hear, while others achieve greater heights when responding to visual stimuli. Some individuals are free, spontaneous and bold in their thinking when permitted to transmit their ideas in nonverbal form but are paralyzed and impoverished if they have to express their ideas in words."

Because "education .....deals with the integration of fundamental and primary experiences in the development of self" (Barron 1969) it follows that an "awakening of the senses .....a heightening of hearing, touch, bodily sensations and sight" (Bruce 1965) is an important aspect of an aesthetic education.

Dewey (1934), who probably has made "the most significant contribution to present-day views that experiencing - namely thinking, feeling - is the basis for art expression" (Frankston 1963) deplored as early as 1934 the fact that art had somehow become detached from our day to day experiences and that it was necessary for education to provide sensory experiences for the children. Read (1956) writes that "art is deeply involved in the actual process of perception, thought and bodily

action. It is not so much a governing principle to be applied to life, as a governing mechanism which can only be ignored at our peril."

Art education today stresses more the communication, expression and sensitivity aspects than the skills of drawing (Frankston 1963).

"In schools where art education is fostered, it is not artistic perfection "that is the primary aim" but the beneficial effect of the creative activity ..... upon the personality of the pupil." (Laban 1948). Creative potential "will not be fostered if decisions, interpretations, action patterns are continually formulated by the teacher and imposed upon the child so the learning environment becomes circumscribed and restricted." (Murray 1963). The importance of the "earliest scribblings of childhood" (Linderman and Herberholz 1970) should be recognized by parents and teachers. These "scribbles and lines do, in fact, have real meaning to the child who is making these drawings" (Brittain 1969). At this stage the process is more important than the product, which "turns out to be more a record of the thinking process than the concrete representation of a particular thought or image." (Brittain 1969).

The nature of art is "to fix the eternal in the temporal, and this the artist attempts by making his own statement about some aspect of the reality of life, as he apprehends it, in a form appropriate to the idiom of the day." (Hamby 1967).

Children's art is different from that of adults (Johnson 1965) and the concerns, too, are different from those stated above. It "is not that of drawing what he sees around him; rather, he is probably a very experienced master of self-taught art, concerned primarily with the production of esthetic combinations which are often the envy of adult

artists. In fact, Picasso says that adults should not teach children to draw, but should learn from them." (Kellogg 1967). Torrance (1965) reinforces Picasso's feelings. "It is a commonplace observation that the art techniques of young children are more similar to those of outstanding creative artists than are those of older children and adults." They appear to have an intuitive sense of line, shape and colour and are able to manipulate these elements (Johnson 1965). Kellogg's "self-taught art", the kind referred to above, is defined as the work done by pre-school children before any adult "interferes".

The expressive tendencies in the play of children are considered to be the instigators of art (Keel 1965) as it is theorised there is a close connection between a child's early picture making, his modes of communication and play (Johnson 1965). It appears there may be a developmental pattern in the child's modes of expression, with movement being the primary means, followed by pictures, the spoken word and finally the written word.

Certain "chronological stages of development" (Johnson 1965) in creative and aesthetic growth have been identified by art educators. There does not appear to be agreement on how many stages there are or on the terminology used to describe them. This is partly due to investigators having different terms of reference, some of these, possibly, not yet being too clearly definable. Lowenfeld and Herberholz (1970) tend towards the more global stages, omitting any before the age of two years, at which time the child is in the "scribbling" stage. Between four and eight years he is passing through the "symbol" stage which leads to "beginning realism". Kellogg, on the other hand, identifies four stages before the child reaches five years of age. These are as follows:

1. Basic scribbles.
2. Placement stage (two - three years).
3. Shape stage (three - four years).
   a) diagrams.
   b) combines.
   c) aggregates.
4. Pictorial stage (four - five years).
   a) early.
   b) later.

It is fairly obvious that, as Brittain (1969) says, there is a great need for further research here, not on whether art experiences should be part of a child's early life, but on the identification of what actually occurs. Johnson (1965) feels strongly about this, stating that "Education has not yet begun to recognize the significance of the creativeness of the child's mind, the implications of creative development, or what it can contribute to the child's mental growth."

The fundamental art of man - and also his primary means of communication - is movement,(Russell 1965). It is therefore important that an aesthetic education include dance experience. In Educational Dance, to distinguish it from professional theatrical dance and which, in Canada, is often called Creative Dance, "the teacher leads her pupils into an adventure in the world of art, a world which must be explored in order to be discovered, experienced in order to be understood." (Hamby 1967).

Dance experience itself has been put on an educational basis by Rudolf Laban and the "main thing about dance is that it affords unparalleled opportunities for the study of body action combined with the development of heightened awareness of the significance of human

movement. General interest stems from the fact that dance systematizes and enhances an activity which is part of everyone's experience of life. The inference is that not only does the neuro-muscular system become more responsive through this experience, but the total person becomes a more sensitive responding instrument to life situations in general." (Rosewarne-Jenkins 1968). It has been during the present century that great advances have been made "in the realisation of the deeper implications of movement", primarily through the work of Rudolf Laban (1879-1958). He was both scientist and artist and his resulting theories embrace aesthetic and rational considerations. His development of kinetography, a system of permanently recording three-dimensional movement in graphic form, has provided a basis for the application of a scientific approach to movement and dance research. (Lange 1970, Redfern 1965). Laban (1948) considered dance was a powerful educational medium and that there were specific educational tasks with which dance was concerned. He listed five, as follows:

1. "to foster and concentrate .....the innate urge of children to perform dance-like movements."
2. to "preserve the spontaneity of movement".
3. to foster artistic expression "in the medium of the primary art of movement."
4. the "awakening of a broad outlook on human activities."
5. "to integrate intellectual knowledge with human ability, an aim which is of paramount importance in any form of education."

In the present day Western world there is a danger of losing our "sensibility to space, shape and form and of the identity of the human body with the space around it." (Bruce 1969). Dance, with its emphasis

on increasing the "child's powers of observation and his sensitive awareness of movement, sound, shape, texture and rhythm" (Russell 1965) can be a means of preventing that loss.

The possibility of dance having greater integrative potential than functional forms of movement is a belief held by many who have used Laban's theories, both in educational and therapeutic situations. Dance "forces the mover to be consciously aware of his body actions and to produce movements in response to information received through all of the primary senses." (Austin 1971). This is particularly true of young children who react very positively to different stimuli. In the Laban manner they are gradually encouraged to use their own ideas, rather than "comply with adult standards of movement which are unnatural to children" (Laban 1948).

A child's psychological make-up consists of three interwoven and interrelated aspects; the psychomotor, the cognitive and the affective. The implication here is that isolation of one domain is impossible, but one aspect can be highlighted in an educational experience. For example, a lesson based on the learning of structure and action would stress the psychomotor domain. A cognitive experience would stress knowledge of principle, for example, phrasing, the development of sequences, spatial and dynamic changes of movement. The affective domain would be uppermost when feelings, moods, observation and appreciation, sensitivity and perception were the content of the experience (Boorman 1971).

Laban's Sixteen Basic Movement Themes (Preston-Dunlop 1963) are based on a spiral pattern of an individual's physical, intellectual, emotional and social growth. The themes are the result of many years of observation and analysis of human movement and they form the basis of

movement education in schools and Physical Education Colleges in England.

Ideally the movement vocabulary inherent in the themes would be learnt over a period of approximately twelve years, particular aspects being more suitable for some age levels than others (Appendix I). For example five year olds are not ready to dance in large groups where intra-group relationships are important. Seventeen year old students, however, gain great satisfaction from the challenge of working harmoniously together. Effort themes which highlight the affective domain, and often result in more dramatic dance, are appropriate for ten and eleven year old children.

The themes fall into two sections, I - VIII being elementary, IX - XVI more advanced. The elementary school child is not ready for the more advanced themes but the elementary themes would form the basis of introductory work with older beginners, with the method of presentation and expectation of results being different.

The content of work appropriate to the pre-school age-group is selected from four themes. These are:

Theme I Body Awareness.

Theme II Effort.

Theme III Spatial Awareness.

Theme V Relationships. (Russell 1965)

These include whole body actions, examples of which are running, stepping, spinning, rising, sinking and also the beginnings of awareness of particular body parts, the hands and feet for example. Elementary concepts of the speed element of movement are explored and also the use of muscular tension; strong actions such as gripping, stamping, vigorous leaping are contrasted with releasing, lightly touching the floor and

"soft" landings. An introduction to the spatial element is achieved by exploring the areas above, in front, behind, to the side of the body; body parts can be close together or far away, steps can be large or small and contrasts can be achieved by composing very short phrases of movement which the children repeat. Socially, at this stage, the child is egocentric and therefore the main relationship exists between the child and the teacher, the group at times making unison actions and yet not relating to each other but to the teacher, who will also be moving.

Lisa Ullmann, in the Annual Laban Lecture given to members of the Art of Movement Guild in 1960 said "In the contemporary art of movement we are not concerned with a particular style which has to be learned. It is, moreover, the study of fundamental principles and the challenge to the individual to respond and to create with them in his own personal way. This fact gives the modern approach to the art of movement a true educational standing. It is no more only for the few who have the gift to move and to dance, and who are being selected to perform."

Dance also frequently draws on other art forms, music, poetry, sculpture and so can provide an introductory basis for general aesthetic education. "In this process, impressions are received in a variety of media - such as sounds (in words or music), colour, texture, spatial forms - and appreciation can be enriched while associating these with movement." (Rosewarne-Jenkins 1968). In all art forms "Man manifests his life experiences creating forms and symbols" (Lange 1970) and any artist, dancer, painter, writer, composer, "seeks either intuitively or intentionally to achieve a sense of wholeness, working through natural progressions to completion. Such a process may be evident in the written essay, the prepared and taught lesson, or the production of a work of art." (Hamby 1967). Besides the similarity of process involved in the

arts there are also similarities of form, for example all have a beginning, middle, end structure. The dance, piece of music, design, poetry may be based on a theme and variations. Repetition, progression and transition are common factors, also concepts of harmony, unity and climax (Frankston 1963). The philosopher, Susanne Langer writes "A dance, like any other work of art, is a perceptible form that expresses the nature of human feeling - the rhythems and connections, crises and breaks, the complexity and richness of what is sometimes called man's inner life, the stream of direct experience, life as it feels to the living." (Langer 1967). "Although each art has its own province, limited by the laws of its own particular medium it is of value to make comparisons and to adduce common or closely related factors, for example to compare matters of rhythm, harmony, contrast, repetition etc. as used in dance composition with their use in other art compositions. Acquaintance with these features means potential ability to analyse other media in similar terms." (Rosewarne-Jenkins 1968).

The relationship between children's art and movement is apparent in the following statement "the wavy line is not so much a representation of the surface of the water as it is the motion or movement of a boat going through the water" (Brittain 1969). The child, through his kinaesthetic sense, has a concept of "wavy" or "up and downedness" and thus is able to translate it into another medium. "Movement then is manifest both as a means of expression in itself and as a vehicle of expression in other arts." (Russell 1965). Torrance (1963) also suggests that movement is important in the development of a child's ability to manipulate ideas and relationships. Manipulation should take place at the concrete level first, i.e., psychomotor or Bruner's enactive stage, and that internalization gradually develops and the child begins to manipulate in the abstract form of ideas

and relationships. This is one form of the concept of transfer of training, and other researchers support Torrance's more generalized theory of transfer. Recent theorists (Duncan 1965, Schulz 1965) indicate that transfer "refers to the impact of prior experience upon current learning" (Ausubel 1965), prior experience being "conceptualised as a cumulatively acquired, hierarchically organised, and established body of knowledge which is organically relatable to the new learning task rather than as a recently experienced constellation of stimulus-response connections influencing the learning of another discrete set of such experiences. Furthermore, the relevant aspects of past experience in this type of learning paradigm are such organisational properties of the learner's subject matter as clarity, stability, generalisability, inclusiveness, cohesiveness and discriminability (i.e. cognitive structure variables) NOT degree of similarity between stimuli and responses in the two learning tasks; and recent prior experience is not regarded as influencing current learning by interacting DIRECTLY with the stimulus-response components of the new learning task but only insofar as it modifies significant relevant attributes of cognitive structure." (Ausubel 1965). In an experiment designed to study the transfer of a non-specific habit or skill it was shown that "transfer increased directly with increases in degree of variation" the conclusion being that "varied training produced better transfer than constant training." (Duncan 1965). Still, transfer can be both positive and negative in nature and prior experience can interfere with certain problem-solving tasks (Schulz 1965). However, there is a need for more research based on the theory of transfer of concepts and principles, particularly as applied to the area of creativity. "Studies

which have been based on transfer of learning in general have, however, been very helpful in suggesting the conditions under which creativity can be transferred from one area to another. There is some evidence which supports the view that, although there are limits to transfer of learning, it may nevertheless be fostered through certain kinds of experiences." (Frankston 1963).

Two premises lead one to be concerned about the importance of early educational opportunities for young children. The first premise is that in order for an individual's creative power to develop to its full, early stimulation of the sensory mechanisms is essential (Linderman and Herberholz 1970). The second states that "while all individuals are endowed with a certain amount of potential creativeness, how much of that creativeness becomes functional depends largely on environment, education and the society in which they live." (Frankston 1963).

It appears that early experiences result in conditioning a child's preference for a medium of expression (Rhodes 1956) and it therefore follows that if he receives a limited range of modes of stimuli, likewise his modes of expression will also be limited. Also affected is the child's future divergent thinking (Tyson 1966).

It has already been noted that early experiences of as wide a nature as possible are essential if each individual's learning potential is to be realised. This would lead one to consider that there should be schooling available for the now called pre-school child.

Even though the importance of nursery school education has been well-established and documented (van der Eyken 1967), some authorities

will only provide them to free mothers for work. In England, particularly during and just after the war, the primary reason for setting up communal nurseries was for just this purpose, i.e., to free the mothers for work. These establishments, more generally known as day nurseries, were sponsored by the Ministry of Labour and were staffed by specially trained nurses. In this way the physical needs of each child were catered for, but other needs were ignored. The provision of some nursery schools by local education authorities came earlier, though facilities were increased in the post war years. Nursery schools are now a recognized part of the educational scene. They are still insufficient in number and not available for all those parents who wish to take advantage of pre-school education. The children eligible are, according to Regulation 3(1) of the Schools Regulations, 1959, those "who have attained the age of three years but have not attained the age of five years".

In the United States the importance of the first four or five years in the life of a child, the period of most rapid growth, both physical and mental, and the susceptibility of these children to the environment, contributed to the setting up of Head Start Programs in certain communities. In Quebec, where school traditionally begins at six years, the Parent Report (1964) stressed the importance of preschool education. However, there is still insufficient legislation regarding the provision of this for it to be available to all those who wish it for their children. There is legislation (School Boards Grants Act, Compilation of Statutes on Education. Prov. of Que. 1967) making available monies for kindergarten classes where the local demand has been sufficient. There is a proviso attached to the granting of this money, that the teacher in charge must hold a specialist's certificate. At present this certificate is obtainable by

attending three years of Summer School at McGill University. Certification obtained during the Winter sessions specifies early childhood which is, by definition, from six years to nine years, and therefore qualifies one to teach in public school. McGill University, recognising the need for specialised training for nursery school teachers, established in 1968 a two-year programme leading to a Class II Diploma (Nursery School) issued by the Department of Education. Graduates teach in private schools, hospitals, day-care centres and cooperative nursery schools and not within the school system.

This lack of provision for pre-school children has been recognized by concerned groups and in 1956, The Quebec Council of Parent Participation Pre-Schools was established. This "is an incorporated volunteer parent organization working in the field of early childhood education and family life education in the Province of Quebec." (Handbook of Q.C.P.P.P. issued by Whiteside-Taylor Centre). One of the Council's achievements has been the establishment in 1969 of the Whiteside-Taylor Centre for Cooperative Education in Baie d'Urfe, Province of Quebec. The Centre provides both nursery school education for eighty children (forty attending the two classes in the mornings and the remainder in the afternoon), and a day-care centre for fifteen children who are there full-time.

The programme in the nursery school is based on the premise that children wish to learn and that "man fundamentally prefers to learn in creative ways through creative and problem-solving activities." (Torrance 1970). Materials of all kinds abound in the classrooms where topics are pursued as long as the children maintain interest in them. "The program is one which is loose in organization in the sense that the children are free to participate or not, as they choose." (Norris 1958). There is

guidance and direction available from one of the three adults present, the teacher, her assistant and the mother-assistant. This guidance is important if the child is to continue to develop and not become discouraged. "Creative ways of learning, in fact, call for the most sensitive kind of guidance and direction possible." (Torrance 1970).

Brittain (1969) wrote of the nursery school becoming one of the most important aspects of the educational system. He stressed the importance of art in the curriculum as it is one of the areas of learning that children engage in naturally. However, in order to justify its inclusion he acknowledged that some scientific justification may be necessary in today's materialistic world. This raises the question of by what means this "scientific justification" may be reached.

In a scientific investigation criteria must be established against which performance can be judged. The usual criteria found in present-day testing situations are those of achievement, peer rating, intelligence, personality or specific test scores, e.g., creativity. (Getzels and Madaus 1969). Some of these, for instance achievement test scores and peer ratings, are more suitable for older age groups than for pre-school children. Many tests lean heavily on verbal responses but there is an increasing awareness "of the need for a greater range of tasks, the involvement of a greater diversity of stimuli and of a larger number of the senses, and expanding the limits of the kinds of observations made of performance." (Torrance 1965). Any test situation is likely to change the variable being measured and this should be considered when the data is being interpreted (Torrance 1965).

Special considerations are involved when it is desired to evaluate children's art for there is a tendency to expect the children to conform

to adult standards in their art. Kellogg (1967) pleads for art tests to be "as accurate and harmless as possible" and that they should be evaluated by people with an "un-adult-erated esthetic vision of the child."

The problem of established criteria for children's art is a major one. When an analytic approach is used it tends to overlook changes that are the result of growth and development (Beittel 1960). Kellogg (1967) criticises two well-known and much used tests because of the criteria used. The Goodenough Draw-a-Man Test ignores the aesthetic components of children's drawings and the Bender Motor Gestalt Test "fails to take into consideration the natural development of child art."

Jones (1961), Campsey (1965), Kincaid (1961), all state specific criteria to be used by the judges in assessing children's art work on a scale, but, as has already been discussed, this is not deemed necessary by all researchers. If the English essay can be considered as an art form it is relevant to consider Pilkington's (1967) conclusion that although certain forms of objective evaluation, i.e., specific criteria stated, may be more reliable, they have not been proved more valid. In fact many of the scales produced overlook the less tangible and more general aesthetic qualities which are important factors in a piece of art. (Morrison and Vernon 1941).

Researchers (Brittain 1969, Campsey 1965, Jones 1961, Lewis and Mussen 1969) have used different scales when asking groups of judges to assess children's art. Campsey and Lewis and Mussen use a 5 point numerical rating scale and Brittain a 6 point scale. Jones had the greatest range, using an 11 point scale. It is doubtful whether it would

be possible to use this with young children as differentiated abilities would not be discernible to this degree.

Some of these criterion problems are being overcome by the use of combined judgments, "rapid impression" techniques and the test-retesting of judges' decisions. These three will be discussed as separate items.

There is ample evidence (Jones 1961, Kincaid 1961, Pilkington 1967, Vernon 1957, Wiseman 1949) that the pooled judgment of several people is a more valid mark than that given when only one marker is involved. Wiseman (1949) postulates "a true mark which would be that given by the pooled judgment of an infinite number of markers." The question of there only being partial agreement in the judgment of one item is discussed by Kincaid (1961) who theorizes "that subtle differences of opinion among judges would produce a composite score more discriminative with regard to the variance of the respondent's performance."

Wiseman (1947) concludes that there are at least two reasons for employing the "rapid impression" method of marking:

1. "There appears to be little difference in reliability between general impression and analytic marking, but it is important to note that the former is much quicker."
2. "It is believed that general impression marking is more likely to yield valid results than will analytic methods."

Sir Cyril Burt in 1921 wrote that "the intuitive or impressionistic method corrects many faults to which a crude, mechanical quantitative dissection might inevitably lead ..... It allows us to judge the candidate's work by its general form or Gestalt, i.e., as a whole, rather than as a mosaic of disconnected items; and thus permits us to grant full value to elusive and organic qualities that could scarcely be catalogued, or decomposed into separate items." (Cast 1940).

The efficiency of markers should be judged primarily by their self-consistency (Vernon 1957), obtained by a "mark, re-mark correlation using the same marking method on both occasions." (Wiseman 1947). This self-consistency coefficient is more reliable than an inter-marker consistency coefficient and is the one that should be used when selecting a team of markers.

The literature reviewed thus far has discussed specific aspects of the concept of creativity. It has been shown that there is some agreement that creative experiences are of importance in the growth and development of psychological traits. It is also theorised that there is a common basis to scientific and artistic forms of creativity. Theories as to the nature of creativity are diverse and this can lead to conflicting results and conclusions. There are demands for qualitative evidence into immediate and long term effects of stimulation in more than one modality. One essential aspect of this research would be the establishment of criteria for measurement of the variable under investigation.

It is worthwhile therefore to examine some quantitatively inclined work that has been reported. Most investigations have been with University students, probably due to their availability and some with elementary and junior high school children.

Miles (1963) investigated the relationship between experience in 'correlated' art courses, involving art, music and modern dance, and behavioural changes related to aesthetic experience. One hundred and fourteen Freshmen were involved in a twelve week correlated arts programme. Their scores on four tests undertaken before the programme were compared with results after twelve weeks. Changes occurred in all tests, but only on A Test of Aesthetic Attitude, (Beittel), were they significantly

different. A retest five months later showed this change had been retained.

Frankston (1963) in investigating the effects of visual art experiences on the poetry writing of Grade Eight children, worked with two experimental groups and two control groups. The former had visual art lessons whilst the latter had music lessons, a tactic designed to eliminate the Hawthorne effect. It would seem a poor choice of control because of the interrelatedness of the various arts. The programme lasted one semester. Pre and post testing of the children's poetry and art performance was done with specific criteria laid down for the judges involved. A series of training sessions for the judges, directed towards consensus on criteria, increased the reliability of their pooled judgment from .56 to .91.

The results showed there was no gain or loss in performance of either group; perhaps a surprising element here is that there was no improvement in the art of the experimental group.

If movement is considered to be one of the elements in aesthetic education, the non-quantified hypothesis that training in movement should have some correlates in other areas, particularly in art expression, can be investigated. Two pieces of research bear perhaps more particularly on this. The first is that of Austin et al (1971) who sought to examine the integrative function of Creative Dance upon children with learning disabilities. The second, more inadequately reported, is Grossman's study of the effect of a particular teaching strategy on kindergarten children's art work.

Austin, in what is considered to be the first study of the effect of Creative Dance on a psychological variable, worked with children around

ten years of age, of normal intelligence but who had learning disabilities. The purpose of the study "was to determine the transfer effects of a creative dance program on perceptual-motor and psycholinguistic behaviour of children with learning disabilities assumed to be the result of central nervous system dysfunction." Eighteen children were randomly assigned to one of three groups, Experimental Dance Group, Experimental Gymnastics Group, Control Group. The inclusion of gymnastics, functional movement, was to determine if dance had more integrative potential. The content of the sessions was based on Laban's Movement Themes. The Control Group followed a programme of "perceptual-motor tasks designed after Kephart". Specific perceptual-motor and psycholinguistic criteria were established and tests adminstered before and after the experimental programme, which extended over three sessions per week for six weeks. The results showed no significant change for any group but the trend in the results indicates that, for a larger group this kind of programme over an extended period of time, might well result in significant transfer effects.

Grossman, in his study conducted with kindergarten children, developed earlier work of Mott (1945) and Geck (1947) in which children's drawings, largely of the human figure, was the criterion. Mott, working with children, is reported to have "had the children exercise parts of their bodies" and verbalise the action and the body part used. Geck, with college students, emphasised "tactual and kinaesthetic experiences by having the students manually explore a modeled human head before sketching it." (Grossman 1970).

Grossman's published account of his twelve week study indicates that he used a combination of both methods in his teaching strategy but details are not provided. It is reported that the teaching strategy employed

had a positive effect on the artistic responses of the children. Grossman concludes "that a developmental art program, stressing cognitive and sensory exploration" leads to the inclusion of "more visual information" in kindergarten children's drawings.

There is thus no clear evidence of the effect of a programme of Creative Dance with young children, using art as the criterion, and it is to this problem that the present research is being directed.

III. DESIGN

As far as can be ascertained this is the first investigation into the relationship between pre-school children's dance experience and their art work. The investigation was carried out at the Whiteside-Taylor Centre for Cooperative Education with the full facilities, support and encouragement of the Centre's administrative and teaching staff.

The experiment was conducted with those children attending the afternoon sessions. Forty children, with an average age of four years, eleven months (range four years, five months to five years, six months) as of February 1, 1970, were involved.

A list of the names of the children was obtained from the school and the list was numbered. The children were assigned to either the Treatment Group (TG) or Control Group (CG) by random drawing of the numbers.

	TG	CG	Total
Room 1	11	9	20
Room 2	9	11	20
Total	20	20	

Each child was assigned a code number which was used in identifying the samples of art work which were to be obtained during the study. Randomisation of the two groups was checked on the basis of a piece of art work obtained from each child before the treatment began. These were ranked by competent judges and a t-test performed to establish the fact that there was no significant difference in the art products of the two groups.

The Treatment Group, consisting of children from the two afternoon

classes, was then given the opportunity to follow a dance programme of two twenty minute sessions a week for twelve weeks. The content of the programme was based on Themes I, II, III and V (Laban's Sixteen Basic Movement Themes). The movement experiences focused particularly on awareness of body parts, simple spatial concepts and the sequencing of whole body actions which were chosen because of the particular time element and degrees of muscular tension implicit in the words, for example, creeping and darting - moving slowly and suddenly; drifting and stamping - lesser and greater degrees of muscular tension. Sample lesson plans will be found in Appendix II. Attention was focused on establishing a good relationship (rapport) between the children and the teacher. Percussion instruments, voice sounds and recorded music were used to accompany the movements. Each session was planned to last twenty minutes. However, if the children appeared disinterested, or had just decided they did not wish to dance any more, the lesson ended. Sometimes the group lasted for ten minutes only, other times it went the entire twenty minutes.

The lessons were planned over the period of the treatment, each successive lesson being based on the outcome of the preceding one. In this way, it was hoped that the content would be more appropriate to the changing needs of the group than if 24 lessons had been planned before there had been any contact with the children.

The Control Group, during the dance sessions, remained in their respective rooms and continued with the particular activities already underway. It was decided they would not be put together for this period as it would mean some children would be in a strange room with unfamiliar adults and that too many uncontrollable factors would interfere.

The teachers kept a record of the activities underway (Appendix III) and one also made notes on any behavioural changes seen in children in the Treatment Group.

The purpose of the experiment was to determine the effects of this treatment upon the art products of the forty children in the Treatment and Control Groups. Normally, during the afternoon, the children painted when and about what they wished. They therefore manipulated their own ideas and presented them in visual form. For the purposes of this study the children were given ideas in the form of a story and then asked to paint a picture, the assumption being made that they would manipulate the "external" ideas and the result would be seen in their painting. To reduce the number of changes in their usually unstructured daily programme, the teachers themselves read the story to their own group. This meant, of course, that the two groups did not receive identical preparation, but as the Treatment Group and Control Group involved children from both classes it was considered that minimal error would be introduced from this "introduction" to their art work.

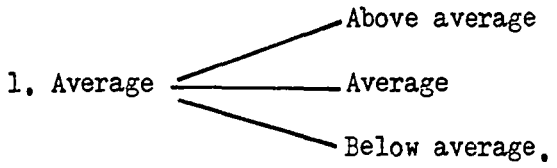
Six colleagues in the Faculty of Education, McGill University, plus the wife of one of the Faculty members, acted as judges. These seven were knowledgeable in the realms of (1) children's art (two judges), (2) developmental psychology (three judges), (3) nursery school teaching (two judges). All were, or had been during their career, involved in teacher education.

The reliability of their individual judgments was assessed by a pilot study which was done in December and January preceding the main study. Twenty pieces of Grade I art work were obtained from a local school and each judge was asked to rank them using the rapid impression

technique (Cyril Burt, cited in Cast 1940). Beyond that one instruction "no attempt was made to impose a uniform method" on the judges, (Morrison and Vernon 1941).

The following instructions were given for this pilot test and all subsequent tests:

1. Using your own criteria (which need not be stated) initially rank the 20 paintings in three (3) groups:
    1. Very good.
    2. Average.
    3. Weak.
2. Subdivide Group 2 as follows:



3. You will now have five (5) groups as follows:

5	4	3	2	1
Weak	Below Average	Average	Above Average	Very good

The paintings were presented to each judge in the same order. A few weeks after the initial ranking the judges were asked to repeat the process. The paintings were in the same order as for the first judgment but the judges were not told they were the same paintings. A self-consistency coefficient was obtained for each judge (Wiseman 1947).

The children at the Whiteside-Taylor Centre were unknown to the judges and any possible influencing factor of personal involvement was eliminated. Each piece of work was identified only by the number

assigned to each child.

The Pre-Test consisted of an art product from each child done before the experiment began. It was also used in establishing the parallel nature of the groups with respect to art. Two Post-Tests were done at the conclusion of the twelve weeks. Post-Test P was similar to the Pre-Test; a painting done after a story was read for motivation. Post-Test C was different; it was a collage done after the children had been introduced to the life cycle of a moth or butterfly. Pictures and live caterpillars were used in the discussion and the children also acted the various stages in the metamorphosis.

Because the trait being measured was assumed to be a continuous variable, it was possible to assign a "score" to each category. This was done as follows:-

TABLE I

Rank	Description	Assigned Score
1	Very good	5
2	Above average	4
3	Average	3
4	Below average	2
5	Weak	1

For each piece of art an aggregate score, consisting of the judges' individual decisions, was adopted as the final score (Vernon 1957). The mean and standard deviation were calculated in order to perform a t-test analysis to determine whether there was any significant difference

between the Treatment Group and Control Group.

Although for statistical purposes null hypotheses will be set up, if the claims of the protagonists of creative dance and creativity generally in young children are correct, these null hypotheses will be rejected. Specifically the following null hypotheses were set up:

1. There will be no difference in the painting done by the children in the Treatment Group and Control Group after the Creative Dance programme.
2. There will be no difference in the collages done by the children in the Treatment Group and Control Group after the Creative Dance programme.

IV. RESULTS AND DISCUSSION

The initial statistical problem in this study was that of determining the self-consistency coefficients of the seven judges who were involved in ranking the art products of the children. As can be seen from Table II six judges exhibited degrees of consistency from .57 to .89.

TABLE II

Self-consistency coefficients of judges

Judge	1	2	3	4	5	6	7
Coefficient	.57	.77	.74	.89	-.54	.71	.84

Judge 5 was eliminated. The minimum value of a self-consistency coefficient at .01 level for 18 df is .56 therefore one can accept the remaining six judges as being reliable.

Assuming a minimum reliability of .57, the minimum value of pooled judgments would be .88.

Table III portrays the Pre-Test scores of the Treatment Group (TG) and the Control Group (CG).

TABLE III

Pre-Test Scores of TG and CG

	N	$\bar{X}$	S.D.
TG	20	15.5	7.62
CG	19	16.26	6.92

Mean difference = .76

t = .32 (not significant at .05 level)

A t-test analysis indicated that there was no significant difference at the .05 level between the groups on the basis of their art products, confirming that they were randomly assigned with respect to this variable. It follows they can be treated as parallel groups with respect to art.

The results of Post-Test P, a painting, and Post-Test C, a collage, are shown in Table IV and V.

TABLE IV

Painting, Post-Test P, Scores of TG and CG

	N	$\bar{X}$	S.D.
TG	17	17.47	7.21
CG	18	15.88	6.63

Mean difference = 1.59

t = .67 (not significant at .05 level)

TABLE V.

Collage, Post-Test C, Scores of TG and CG

	N	$\bar{X}$	S.D.
TG	17	17.64	8.67
CG	19	18.47	6.16

Mean difference = .78

t = .33 (not significant at .05 level)

The decrease in subjects was due to one child leaving the school

after the study had begun and the absence of other children on the days the post-tests were administered.

T-test analyses indicated that the mean differences were not significant at the .05 level. For Post-Test P with 34 df significant values of t are 1.692 at the .10 level and 2.032 at the .05 level. For Post-Test C, with 36 df, significant values of t are 1.688 at the .10 level and 2.028 at the .05 level.

One factor which may be partially responsible for the similarity in scores seen in Table IV was that this was the first collage done by the children. Prior to this some children had been encouraged to try to produce a collage but not all children had responded to the challenge. It should also be remembered that the collage was assessed by the six judges, whose re-test reliability had been established on general art work. Whilst it would naturally be expected that they would be equally reliable in their judgments of a collage, this had not been experimentally verified.

The conclusion to be drawn, therefore, is that the Creative Dance programme had no significant effect on the art products of this particular group of pre-school children during the twelve week period and the null hypotheses are confirmed. This study, though experimental, should be considered primarily as exploratory in nature. The results are not generalisable to other populations. The children involved were from a West Island upper-middle class community and their school programme is one in which other explorations and other creative activities play a major role.

It will have been noted that the number of children in the Treatment Group present for the final testing was reduced to seventeen. It is interesting to find out whether, in this group alone, change had taken

place. This change would be due to two factors, development over the twelve week period and the experimental programme.

TABLE VI

Effects of development and experimental programme on art scores.

	N	$\bar{X}$	S.D.
Pre-Test	17	16.64	7.59
Post-Test P	17	17.53	7.09

Mean difference = .89

t = .38 (not significant at .05 level)

For 16 df significant values of t are:

i) at .10 level, 1.75

ii) at .05 level, 2.12

Closer inspection of these seventeen scores (Appendices) indicate that for two subjects, children 5 and 7, the twelve week period appeared to have very marked negative effect. Even if these two were eliminated from the experiment the result would still be non-significant as Table VII shows.

TABLE VII

	N	$\bar{X}$	S.D.
Pre-Test	15	15.733	8.23
Post-Test	15	19.00	6.21

Mean difference = 3.26

t = 1.685 (not significant at .05 level)

For 14 df significant values of t are:

i) at .10 level, 1.76

ii) at .05 level, 2.14

The conclusion must be drawn that no measurable change in quality of art product had been generated amongst these children (Treatment Group) over the twelve week period. If growth and experience together cannot produce change, it is highly improbable that the experimental programme could have differentially affected the Treatment Group compared with the Control Group. It is, of course, theoretically possible that the experimental programme militates against the growth effect, but the pre and post training scores of the Control Group, $\overline{X}$ = 16.26 and 15.88, for unequal numbers, would rule out this possibility. On the basis of this, together with the results shown in Tables VI and VII, it would appear that in twelve weeks there is no measurable growth in art products for either experimental or control group. A prime consideration for any further research with children at the Centre, and of this age, would be to determine the minimum time for the effect of growth to show in measurable form in their art products.

Some unforseen problems arose during the teaching of these young children. The first came from the mixing of children from two school classes. Even though the children knew the names of those in the adjacent room, they had never been together for any previous activity at the Centre. This meant they needed time to become acquainted with each other during the twenty minutes scheduled for dance.

Again, children normally being in proximity to, and fairly familiar with three adults were now expected to relate to one adult instead of the three to whom they had been accustomed. This one new adult also had expectations different from the other adults. Instead of great individuality and diverse occupations, now the children were expected to explore the same idea simultaneously.

The writer, who was also the teacher, visited the school twice a week for the dance sessions. The children had no previous chance to establish rapport and to become really familiar with her expectations, though before the end of the twelve weeks rapport had been well established with most of the children.

In terms of the physical conditions of the experiment, reference must be made to the auditorium in which the dance sessions were held. This was the area in which the agility apparatus was kept. During all other sessions when the children were in the auditorium they were encouraged to use the agility apparatus and were allowed to be as noisy and free as they desired. This behaviour transferred to the early dance sessions and necessitated a change of venue to a smaller room.

The personal life of the child and the effect, in a few instances, of fairly traumatic events in the home, also militated against the experiment. Information on these events was always readily given by the class teacher when asked by the writer if there was a particular reason for a change in a child's behaviour, but this usually followed rather than preceded the teaching session.

One teacher noted behavioural changes in the Treatment Group children in her class. For example, some were reluctant in the early stages of the dance programme, to leave their projects. When they were reassured they could continue on their return from the auditorium they left quite contentedly. Remarks made on one particular day are interesting. "D was painting rather off-handedly at easel before going to auditorium. On her return she very enthusiastically finished her painting, adding figures and a story. She went on to finish another painting and entitled it 'D's Little Show'. P, who had not been involved in anything before going into the auditorium, returned and worked making

and completing a drum.

T. painted his first picture in weeks on return."

One recommendation for a future study would be the inclusion of observations of the children's behaviour immediately before and after each treatment session.

The Creative Dance programme involved several movement themes, the children gaining a general, rather than a specific, movement experience. This may also be a factor contributing to non-significant results in similar experiments.

It was felt that, at this early age, the children are still so much at the exploring stage of their life, that the instrument used for detecting any slight change would need to be more sensitive than the one employed. A gross measuring device can only measure crude effect. Starkweather (1964) pinpoints the major problem in research with pre-school children being that "of designing instruments appropriate to the pre-school level of activity." She indicated that another problem was that of gaining the cooperation of these young subjects!

Confirmation of the null hypotheses runs contrary to much of the literature though, as pointed out, much of the literature is speculative in character. The inference to be made is that it takes more than a few weeks of biweekly creative dance sessions for detectable changes to occur, just as twelve weeks is insufficient for measurable changes to take place in art work. A much more important factor in the development of creativity is the school atmosphere over a number of years. Research conducted in England (Haddon and Lytton 1968) would support this suggestion. It was found that the school environment which develops qualities of personality is the one whose pupils, at eleven years of age,

score highly on divergent thinking abilities (DTA) tests. Self-initiated learning, the establishment of inter-personal relationships, a relaxed and friendly atmosphere were the characteristics of these so-called 'informal' schools. A follow-up study in 1971 showed that these same children, now aged fifteen years, had maintained their significantly higher scores on DTA tests. Haddon and Lytton concluded that "the effect of the primary school remains whereas the impact of the secondary school is negligible." This reinforces earlier statements made concerning the importance of the early stages of education. To continue with this line of argument, one would propose to compare the products of the Whiteside-Taylor Centre with the products of other nursery schools. This is not feasible as all the evidence indicates that the few nursery schools in existence operate in a similar manner in encouraging a creative approach.

The children at the Whiteside-Taylor Centre are a fairly homogeneous group, the range in socio-economic background and intelligence probably not being very great. The parents' expectations, too, are similar, otherwise their children would not be at the Centre. A larger heterogeneous group is needed and a longitudinal study should be undertaken to quantify the development of creativity fostered in an optimum environment. (Rhodes 1956, Little 1966, Torrance 1970).

The problems that occurred during this study demonstrate the kind of difficulties standing in the way of quantifying the beliefs supported by exponents of Creative Dance.

V. CONCLUSION

A review of the literature on creativity indicated that there has been considerable speculation as to the nature of creativity and its beneficial effects. Only within the past decade has quantified research begun to make a considerable contribution to understanding this important psychological trait.

Very little research into the educational aspects of creativity has been reported. Writers hypothesise that creative experiences in one modality should have an effect on other modalities. Within this frame of reference one could hypothesise that a programme of Creative Dance would produce an effect upon creative art work. Neither Frankston's (1963) study nor Austin's (1971) study confirmed the general hypothesis, but Austin's result indicates a trend in this direction.

Subjects involved in experiments have tended to be University students, upper elementary or junior high school pupils. The importance of creative activities for the pre-school child has been indicated and one inadequately reported study involving kindergarten children resulted in significant changes in scores in the criterion of art performance. As far as could be ascertained no investigation into the effects of Creative Dance on pre-school children's art work had been undertaken. It was to this problem that the present study was directed.

Forty children attending the Whiteside-Taylor Centre for Cooperative Education were randomly assigned to either the Treatment Group or the Control Group. At the beginning of the study their average age was four years and eleven months. The treatment consisted of biweekly Creative Dance sessions extending over twelve weeks. The content of the dance programme was based on certain of Laban's Sixteen

Basic Movement Themes. The Pre and Post tests consisted of art products from the children. These products consisted of two paintings and one collage.

The art products were ranked by a panel of judges, whose reliability was established by a pilot study undertaken prior to the main study. The reliability of their pooled judgments was .88.

The following two null hypotheses were set up:

1. There will be no difference in the paintings done by the children in the Treatment Group and Control Group after the Creative Dance programme.
2. There will be no difference in the collages done by the children in the Treatment Group and Control Group after the Creative Dance programme.

Results confirmed these null hypotheses, contary to expectations aroused by much of the literature. Factors possibly influencing the results were discussed together with recommendations for a future study into the effects of a Creative Dance programme on pre-school children's art products. At the very least such a study should be pursued for sufficient time to demonstrate a measurable change in the quality of art products of these young children, or consistently negative results will continue to be obtained.

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APPENDIX I

Laban's Sixteen Basic Movement Themes and their relationship to age groups.

THEMES	AGES									
	4-6	6-7	8-9	10-11	11-12	12-13	13-14	14-15	15-16	16-18
I	*	*								
II	*	*	*							
III	*	*	*							
IV		*	*	*						
V	*	*	*	*	*	*	*	*		
VI			*	*	*	*				
VII				*	*	*				
VIII				*	*	*	*			
IX					*	*	*			
X						*	*	*		
XI							*	*	*	
XII								*	*	*
XIII								*	*	*
XIV									*	*
XV										*
XVI										*

APPENDIX II

Sample Lesson Plans and Observations

Sample Lesson 1

Aim To accustom the children to using the space; stopping.

Themes

Theme 1 - travelling and stopping (phrasing)
awareness of hands and feet

Theme 2 - increase in tension - "grip"
gradual release - "drip"

Theme 5 - dancing with the teacher

Content

1. Running anywhere, on tambour beat stop.
2. Travel, stop, "drip", i.e. slowly collapse.
3. Shake hands, then grip.
   Touch the floor lightly with
   a) hands
   b) feet

Final sequence - travelling (with the teacher), stop, shake hands, grip, drip.

Accompaniment: tambourine.

Observations

J wouldn't take part.

No individual spatial awareness, all go together.

Learnt "stop" quickly to 3 stimuli:

1) tambour beat
2) tambourine
3) voice

All listened.

Sample Lesson 2

Aim Working more in personal, rather than general, space, i.e. within the kinesphere.

Themes

Theme 1 - galloping, skipping, stopping

Theme 2 - slow movement,
fast movement

Theme 3 - large and small extensions in space.

Content

1. Creep towards teacher, gallop away

   Accompaniment - tambourine.

2. Close hands tightly, open, shake.
   Close hands tightly, open one only, then the other.
   Open one hand and close the other.

3. Find ways of making the body take up a lot of space, then a little space.

4. Travel with big steps, little steps.

Final sequence - skipping, stopping, making a big shape or a small shape.

Accompaniment - tambourine.

Observations

P did not want to come, sat and cried. D joined her.

Group cannot maintain slow movement, at end of creep they needed to pounce!

Use of hands good; can simultaneously open one and close the other.

Boys love chasing each other.

Moved away from the teacher better, appeared to be less need for closeness.

Very rapid changes of activity; they will join in when action has started - words not good as the stimulus.

Sample Lesson 3

Aim — To focus on qualitative aspects of movement.

Themes — Theme 1 - rising and sinking

Theme 2 - sudden (jerky), sustained (smooth) movement

Theme 5 - with the teacher

Content

1. Free dance to "Listen and Move"
   Record 2, Side A. Band (a)

2. Rising with the teacher, sinking.
   Rise smoothly - sink jerkily. Reverse.

   Accompaniment - tambour.

3. Dance keeping near to the floor.
   "Listen and Move" Record 3. Side A. Band (e)

Final sequence - Rising, travelling, sinking.
Sometimes move smoothly, other times jerkily.

Observations — Certain group very excitable, M being the leader.

P and D still hide behind "body box".

R fascinated by the record player.

Managed to have the majority work to second record.

Movements "global" and "scribbles".

Little jumping ability, they hardly leave the floor.

Sequence quite good but verbal encouragement from teacher constantly given.

APPENDIX III

Examples of weekly themes in the programme at the Whiteside-Taylor Centre for Cooperative Education

Preparations for St. Valentine's Day, e.g., cards, candy, baking.

Sleighride during the week, therefore snow, sleighs and horses for theme.

Child moving house during the week, therefore "moving" theme. Baking for Farewell Party on Friday.

Easter Week - chicks, rabbits, Easter eggs, hats.

Sugaring-off party midweek so trees and syrup.

Frog acquired on Monday, therefore frogs, plus flies and worms.

These themes involved stimulation through pictures, books and materials over and above the usual Nursery School stimuli, i.e. paint, paper, paste, water, sand, clay, finger paint, play dough.

APPENDIX IV

Pairing Statistics from which Table II was derived

Judges 1 - 7

1		2		3		4		5		6		7	
1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
2	3	1	1	2	3	2	1	3	5	2	2	3	3
2	2	3	3	2	3	3	3	2	3	1	1	2	2
5	3	4	3	4	5	1	1	4	1	3	4	4	3
5	4	4	5	3	4	4	4	4	3	5	4	4	5
2	2	5	4	5	4	5	5	5	3	3	2	2	3
3	4	3	3	5	4	3	4	3	2	3	4	3	2
2	3	3	3	4	4	2	2	2	3	1	1	1	1
5	2	5	5	3	3	4	4	4	3	1	3	1	1
1	1	2	3	1	2	2	2	1	3	2	2	3	2
1	1	2	2	1	1	3	2	1	5	3	2	2	2
1	1	1	1	2	2	1	1	3	4	1	1	1	1
4	5	5	5	5	5	5	5	4	1	4	5	5	5
4	5	3	3	4	3	4	3	4	2	3	4	4	4
2	4	4	4	5	4	3	2	5	1	3	4	3	3
5	3	5	5	3	5	4	4	5	2	5	5	4	3
3	4	4	3	4	5	2	1	4	1	4	2	2	1
4	4	5	5	3	4	5	5	2	3	4	5	3	2
4	3	5	5	3	4	4	4	4	4	4	5	4	4
1	2	2	3	1	2	3	3	2	4	3	3	1	2
3	2	1	2	3	3	3	3	3	4	2	4	3	2

N = 20

APPENDIX V

Statistics for individual ranking of Pre-Test Art Work of Treatment Group

Judges 1 - 6

1	2	3	4	5	6
4	3	3	3	3	3
2	1	1	1	1	1
1	5	5	4	5	5
1	5	1	1	1	1
1	1	3	1	1	1
5	5	5	5	5	5
3	2	4	3	2	3
2	5	3	5	4	5
5	5	5	5	5	4
2	3	2	1	2	3
4	5	4	5	4	2
5	5	5	5	4	2
5	5	5	5	5	5
3	4	3	3	3	3
1	1	2	1	1	1
3	5	4	3	4	4
3	5	4	4	3	4
4	5	2	4	3	3
4	5	5	5	3	4
5	5	5	5	4	4

N = 20

APPENDIX VI

Statistics for individual ranking of Pre-Test Art Work of Control Group

Judges 1 - 6

1	2	3	4	5	6
5	5	5	4	5	5
4	4	3	3	3	2
3	3	2	2	2	1
1	2	1	2	1	1
1	3	2	1	2	4
2	3	4	3	3	3
3	4	2	2	3	3
3	1	1	1	1	1
3	4	3	2	3	2
4	4	5	5	4	4
5	5	4	4	5	5
5	5	5	4	5	5
5	4	3	3	3	3
5	5	4	4	4	5
5	5	3	5	3	4
3	4	2	5	2	4
2	3	1	1	2	2
4	4	4	5	3	3
5	5	5	4	4	4

N = 19

APPENDIX VII

Statistics for Individual ranking of Post-Test P of Treatment Group

Judges 1 - 6

1	2	3	4	5	6
2	3	1	2	1	1
1	2	2	1	2	2
4	3	3	4	4	3
3	4	1	4	1	3
5	5	5	4	5	5
5	5	5	5	5	5
5	5	5	5	5	5
4	3	2	4	2	4
1	3	1	2	4	3
5	5	4	4	5	5
4	3	3	3	4	4
1	3	3	1	2	2
3	3	3	3	3	3
2	3	1	2	1	1
3	3	3	3	3	3
2	1	2	1	2	1
3	4	3	4	3	2

N = 17

APPENDIX VIII

Statistics for Individual ranking of Post-Test P of Control Group

Judges 1 - 6

1	2	3	4	5	6
2	5	4	3	3	3
1	3	4	3	4	3
4	5	5	5	5	5
4	5	5	5	5	5
1	4	1	2	2	2
2	3	2	4	4	3
1	3	2	4	1	1
2	3	3	4	2	2
2	3	3	3	4	4
5	3	4	5	3	4
3	3	3	4	4	3
5	5	5	5	5	5
5	5	5	5	5	5
3	3	1	3	2	2
3	1	2	2	3	2
3	2	3	1	2	2
2	3	4	1	3	2
5	5	5	5	5	5

N = 18

APPENDIX IX

Statistics for individual ranking of Post-Test C of Treatment Group

Judges 1 - 6

1	2	3	4	5	6
4	3	3	5	3	3
1	4	2	3	2	3
1	2	2	1	3	3
3	5	4	5	5	5
5	5	5	5	5	5
2	3	3	4	5	4
4	5	5	4	5	5
1	3	1	2	1	1
1	3	1	3	1	1
2	3	1	1	1	2
3	5	4	4	5	5
1	3	2	3	3	4
1	1	1	1	1	1
2	3	3	3	4	2
1	3	2	3	1	2
3	4	4	5	4	5
5	5	4	4	5	4

N = 17

APPENDIX X

Statistics for Individual ranking of Post-Test C of Control Group

Judges 1 - 6

1	2	3	4	5	6
4	4	5	5	4	5
3	3	4	4	3	4
4	3	3	5	3	2
4	4	2	4	3	2
1	1	2	3	4	4
1	2	2	1	1	1
4	3	4	4	3	3
1	3	1	1	3	3
2	3	1	3	2	3
3	3	3	2	3	3
2	3	2	1	2	4
5	5	5	5	5	5
3	2	2	2	1	2
3	3	5	1	4	4
3	3	2	5	3	4
1	3	2	1	1	1
2	1	3	1	2	3
2	3	4	1	2	2
4	5	4	5	5	5

N = 19

APPENDIX XI

Statistics for Aggregate Scores of Pre-Test for TG and CG.

TG. N = 20		CG. N = 19	
Subject	Score	Subject	Score
1	17	21	7
2	29	22	17
3	11	23	23
4	26	24	28
5	28	25	25
6	6	26	18
7	19	27	19
8	12	28	28
9	7	29	19
10	23	30	10
11	12	31	8
12	10	32	7
13	6	33	15
14	17	34	9
15	29	35	11
16	13	36	18
17	13	38	25
18	15	39	13
19	10	40	9
20	8		
$\bar{X}$ = 15.5		$\bar{X}$ = 16.26	
S.D. = 7.62		S.D. = 6.925	

APPENDIX XII

Statistics for Aggregate Scores of Post-Test P for TG and CG

TG. N = 17		CG. N = 18	
Subject	Score	Subject	Score
1	26	21	16
2	26	22	18
3	15	23	7
4	20	24	7
5	7	25	24
7	6	26	18
9	6	27	24
10	17	28	20
11	22	29	17
13	8	30	12
14	15	31	16
15	24	32	6
16	18	33	6
17	26	34	22
18	18	36	23
19	27	38	23
20	17	39	21
		40	6
$\bar{X}$ =	17.47	$\bar{X}$ =	15.88
S.D. =	7.21	S.D. =	6.63

APPENDIX XIII

Statistics for Aggregate Scores of Post-Test C for TG and CG

TG. N = 17		CG. N = 19	
Subject	Score	Subject	Score
1	15	21	9
2	21	22	15
3	24	23	16
4	9	24	17
5	6	25	21
7	15	26	28
9	8	27	15
10	27	28	24
11	26	29	22
12	26	30	19
13	10	31	22
14	20	32	6
15	30	33	24
16	19	34	16
17	24	35	16
19	11	36	27
20	9	38	24
		39	22
		40	8
$\bar{X}$ =	17.64	$\bar{X}$ =	18.47
S.D. =	8.67	S.D. =	6.16