

THE USE OF SOCIO-DRAMATIC PLAY TECHNIQUE
IN TEACHING VERBAL AND NUMERICAL
PROBLEMS IN NURSERY SCHOOLS.

by

F. AJIKE OSANYIN (MRS)

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CERTIFICATION

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IN TEACHING VERBAL AND NUMERICAL

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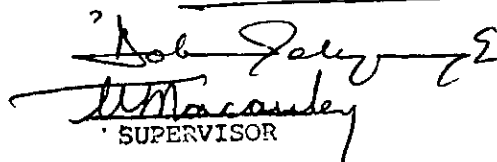
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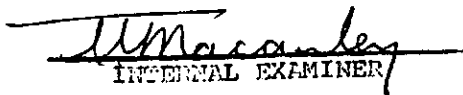
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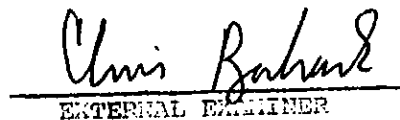
CURRICULUM STUDIES


AUTHOR


SUPERVISOR


INTERNAL EXAMINER


INTERNAL EXAMINER


EXTERNAL EXAMINER

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DEDICATION

This work is dedicated to those who showed me the path

to education - My dearest brother Mr. Gabriel

Omotayo Onibon-oje and my Mother, Madam

Beatrice Ogunyemi Onibon-oje. The

work is also dedicated to my

husband, Bode Osanyin and

Our loving children,

Funmilayo, Olumide

and Olaolu.

A B S T R A C T

The Nigerian parents' assessment of the effectiveness of pre-school education centres around the speed and the extent to which their pre-school children master the academic skills. This inappropriate index of academic success has resulted in the predominance of drills and memorisation as the commonest feature of the pre-school classes. Play, which is one of the best methods through which the pre-school age children learn, has been relegated to a state of recess or total abandonment in the nursery schools.

Most Nigerian pre-school teachers are not aware of the effective ways of maximising children's learning through play. They are not aware that in a child's play situation, the child abstracts the significant elements of his environment and organises them in meaningful order, that the spontaneous expression of thought and feeling of the child in this play situation is an educational activity.

This study was therefore designed to examine whether the use of socio-dramatic play technique will improve the verbal and numerical problem-solving abilities of Nigerian nursery school children. Its purpose was to determine the instructional value of play for children of varying background using their knowledge of situations, people

and places in solving problems. It was also aimed at identifying one of the ways through which nursery school teachers can meaningfully utilize pupils' relevant experiences in problem-solving.

For the study, 10 pre-primary schools were randomly selected from Lagos State pre-primary schools list. From these, a total of 630 pre-primary school children and 20 teachers were selected for the study. Questionnaire, observation schedule and achievement test were the three tools used to collect data. A pre-test-post-test research design was used in the study. Analysis of Covariance and t-test were used on the scores obtained.

The findings of the study showed significant difference in the verbal and numerical problem-solving performance of pupils taught by the technique of socio-dramatic play and those taught by the conventional teaching method. The study made it clear that the very nature of socio-dramatic play which included the ability of the pupils to immitate roles, persist in role imitation, make belief in action and situations and also communicate with others, is capable of generating pupils' interest in learning.

The implications of the study in the areas of teacher education, training strategy, curricula tool, early childhood curriculum and the child's continued learning are highlighted.

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CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 Introduction

No nation can afford to neglect the education of its children because the children are the future assets of their various societies. Wheeler (1967) asserts that every society educates its own children so as to make them fit into that society. Stenhouse (1976) also affirms that it is the society that dictates the content and the standard of its education. Such education starts from the early years of life with its underlying goals derived from the society's desire to support, stimulate and guide the developmental processes of the child in the direction of competence.

The rapid growth of institutionalised early childhood education in Nigeria has constituted a major issue in recent years. Educators are particularly worried about their spurious development in terms of quality and quantity. Nigerian educators have realised that the future of the Nigerian society depends on laying a sound foundation for the children in the early years of life. It is therefore important that appropriate and meaningful educational experiences are offered in these institutions.

Essentially, the proliferation of these institutions in the country is a reflection of the society's belief that by stimulating cognitive growth in the children

during the early years, the life-long intellectual development of these children will be enhanced. Thus, pre-school education has become desirable in aiding the Nigerian society to achieve its goals of bringing up its young ones. Pifer (1972) pointed out that lack of good pre-school education could among other things, impair children's development and such children could become "crippled adults" who would make little or nothing in terms of contribution to their society.

Pifer was concerned with the rather gloomy social upheaval and its consequent effects on the American pre-schoolers. The same could be true of the children of the developing nations of the world if the early childhood education offered does not help to lay the foundation on which the young ones could build. A solid foundation provided in the early years will enable the children later to play constructive roles in their task of nation building.

1.2 Early Childhood Education in Nigeria

The traditional African extended family structure has contributed enormously to the child's early education. Fafunwa (1974) asserted that all the members of the child's extended family usually take part in ensuring proper behaviour in such things as eating, greetings, dressing, sitting, sharing, addressing, language etc.

Fadipe (1970) observed that the

education of the young Yoruba in code of manners, conventions, customs, morals, superstitions and laws of his society is achieved through various members of his extended family and house hold, his extended family, his kindred and his neighbourhood.

Durojaiye (1976) also enumerated the traditional functions of the home in relation to the child's proper upbringing. These include the transmission of behaviour, fulfilment of the child's needs, social training and learning.

Despite the fact that the traditional African families contribute significantly to the education of the child, Fafunwa (1976) regrets that the African child also suffers serious disadvantages. This is because his home lacks the stimulating conditions that can promote learning in a rapidly changing society. It is with regard to this that Macauley (1968) stressed that since most parents are poor and cannot therefore provide the stimulating environment necessary for promoting the child's intellectual growth, it becomes the duty of the nursery schools to provide plenty of play mates, a wholesome atmosphere with lots of creative and educational materials for the child to play with.

1.3 Government Involvement in Nursery Education in Nigeria

The first serious governmental attempt at intervening

in the operation of institutionalised nursery education in this country seemed to be that of the Western Region in 1954. The Western Region Education Law (1954) limited the participation of the government to giving of approval to interested proprietors of pre-schools provided they fulfil the following laid down rules and regulations.

- i. In every primary school, the Head teacher shall be a kindergarten teacher.
- ii. In every primary school with nursery class or classes attached, the nursery staff shall include nursery teachers.
- iii. Each class in a nursery school or primary school, with nursery school attached, shall be under a trained certificated teacher or nursery assistant.
- iv. Each nursery school or primary school with nursery class or classes attached shall have at least one helper in respect of every 20 pupils or less in classes for pupils under four years of age and such nursery helper shall be a holder of at least Secondary Modern School Certificate.

Currently this level of education is enjoying a new prominence. This is confirmed by its accorded

recognition in the National Policy on Education (1977, reviewed in 1981).

It is the realisation of the significant role of nursery education in the development of Nigeria's over 8 million children between the ages of three and six that led the Federal Government of Nigeria to expressly state the purpose of nursery education in the National Policy. Broadly, the National Policy states that nursery education should lay the foundation for successful pursuit of general interest and attitudes so that each child might develop to his full stature as a responsible citizen. To achieve this, the Federal government through the Nigerian Educational Research Council (NERC), has taken an initial step in translating the policy statements into a workable programme of implementation. The NERC inaugurated a Curriculum Development Committee in 1983. The Committee was charged to:

- i. define the specific goals for nursery education in Nigeria within the context of social, cultural, linguistic, political and religious realities.
- ii. define and work out relevant and appropriate curriculum content suitable for the ages 3+, 4+, 5+ years.

The three-year (1983 -86) efforts of the committee have produced guide to teaching and learning in the following:

i. Physical Needs:

The Child will be helped to grow normally and be able to use his sensory-motor skills in providing him with fresh air, adequate space, play materials, good nutritional foods, training in personal hygiene and regular medical care. He should be encouraged to sleep and rest.

ii. Socio-emotional Needs:

The child will be helped to form and maintain stable relationships, grow in love and self-confidence, develop self-control, look after himself, perform appropriate tasks, have a sense of right and wrong and generally develop a stable personality, capable of taking his rightful place in the society.

iii. Intellectual Needs:

Reasonable and stimulating environment will be provided through which the child learns how to learn and to develop basic conceptual

— skills necessary for life. He should develop a reasonable linguistic repertoire for meaningful communication. The child will also be helped to prepare for primary schooling. Through toys, games, drama, music and art, the child's creativity will be fostered. It is also hoped that there will be an elimination of learning difficulty arising from rural/urban dichotomy, in respect of home environment and cultural background.

iv. Aesthetic Needs;

By experimenting with a variety of local materials, the child will develop appreciation for works of art, music and so on thereby growing in awareness and appreciation of beauty. He will learn to care for his environment and take part in making it beautiful.

It was therefore the recommendation of the committee that

- (a) experts be sponsored to prepare and produce a comprehensive handbook on Pedagogy in line with the curriculum guidelines produced.

- (b) experts be commissioned to produce relevant and appropriate workbooks and primers for use by the children in line with the curriculum guidelines produced.

In spite of the efforts of the NERC on Nursery education in Nigeria, there is the need for it to continue to intensify efforts in promoting basic research in nursery education in Nigeria. The programme developers emphasised that since the child spends the greater part of his waking hours in his cultural environment, it is necessary that the school build on the knowledge, skills and experiences which the child brings from home. The schools are therefore implored not to ram in all that is academically required, mechanically.

Section two of the National Policy assigned specific responsibilities to the State Governments in the implementation of the Policy statements. Each State is required to:

- i. encourage private efforts in the provision of pre-school education;
- ii. regulate and control the operation of pre-school education;
- iii. ensure that the staff of pre-school education are adequately trained;
- iv. ensure that essential and appropriate equipment is provided.

In compliance with this, some States of the Federation are now stipulating conditions necessary for establishing and running nursery schools. For instance, the Imo State Government stipulated conditions for seeking approval, opening, revocation of approval, offences, sites for nursery school, building, furniture, equipment and staff of nursery schools in the state.

1.4 Government Policy on Nursery Education in Nigeria

The National Policy and the Blue print on its implementation state categorically that it is the full responsibility of the Nigerian parents to bring up their children to the age of maturity. However, the Nigerian government has expressed the desire to help mothers who are obliged to work away from home. This gave recognition to nursery school education and to its educational value. It therefore encourages private and voluntary efforts in the provision of nursery schools.

In the effort to decentralise the educational system, the government placed the management and administration of nursery, primary and adult education under the Local Government Council. While efforts are being concentrated on primary and adult education, nursery school education is being conspicuously neglected.

Government's activity at this level is limited to the granting of permission to private individuals and voluntary organisations to open schools.

1.5 Nursery School Education in Lagos State of Nigeria

The urban city of Lagos has, in recent times witnessed an upsurge in the number of nursery schools. This has been aggravated in consequence of the large population of working mothers, the scarcity of domestic helps and the dwindling number of willing grandmothers. The planned early childhood educational institutions that are springing up in every corner of the state are being patronised by anxious parents.

Statistics received from the State Ministry of Education revealed that in 1972, there were 42 schools, in 1977, the number was 76. In 1979, it was 106 while in 1980 it was 165 and in 1985 it was 172.

The lack of central supervision in nursery school education for these approved and registered schools in the State has resulted in the diversities found in the fees, quality of the teachers, buildings, social and medical facilities, and the curricula which are as varied as the number of schools there are.

Abiodun (1986) aptly described most of the Nursery schools in the State as:

"mere exploitative mills where children were gradually led to their intellectual deaths at such an early age... The fees charged were high while the quality of service given in return was nothing to write home about. Some of them admitted over 60 children in substandard classrooms under teachers who have poor educational qualifications. These were usually drop-outs from Secondary Schools with smattering knowledge of the subject they teach. Except in very few cases, specialist teachers were rare species".

This gloomy picture painted by an official of the State Ministry of Education, has challenged the State Government to action in insisting on the provision of educational facilities for this age level. One therefore recognises the recent efforts of the government at improving the situation. As a first step in this direction, she embarked upon the development of a curriculum for nursery schools because there has not been any uniform curriculum for this level of education. The curriculum has recently been completed. It is comprehensive in nature. Unlike the NERC curriculum guide line with its four broad areas, the Lagos State curriculum programme has the following areas with stated objectives, materials, activities and assessment.

1. Creative Activities.
2. Communication Skills.
3. Physical/Out door Activities.
4. Music.
5. Drama.

6. Health and safety education.
7. Number Readiness.
8. Science.
9. Moral instruction
10. Social Studies.

Still determined to improve nursery education in the State, the Ministry of Education in 1986 set up an Advisory Board on Nursery Education and Private Schools in the State. The Board was to assist in formulating policies for nursery schools and ensure the maintenance of acceptable standards in the schools. The following guidelines on the establishment of nursery education in Lagos State are provided by the State Ministry of Education.

- a. Permission to establish a pre-primary school must be obtained in writing from the Ministry of Education.
- b. Admission of children into such schools should only be undertaken by the Proprietor after a formal approval has been sought and obtained from the Commissioner for Education to open and operate the institution.
- c. It is illegal to open/operate an educational institution in Lagos State without approval of the Commissioner of Education. Any such school will be closed down and the defaulters will be prosecuted.

- d. The Proprietor/sponsor of a pre-primary school in Lagos State should be a person of proven integrity with evidence of formal education.
- e. A pre-primary school may not cater for children whose ages are above six years.

1.5.1 Premises/Facilities

Use of residential buildings to house a school will not be allowed. Prospective proprietors are therefore to use buildings designed solely for a school. Each classroom should not be less than 5m by 6m in dimension.

Educational and recreational facilities available in a pre-primary school must be found to be suitable for the ages of children for which they are designed. The location and installation of such facilities should take cognisance of the safety of the children. Suitability-wise, such facilities should always be kept in good condition so that the children will at all times derive maximum benefits from their use.

The building and all the safety gadgets installed must be certified suitable for use by the appropriate statutory bodies prior to the issuance of a formal approval to establish the school.

Open space available for the children's outdoor activities around the proposed school's premises must be adjudged adequate by Inspectors from the Ministry of Education. The premises to be approved for a pre-primary school shall be provided with fire control equipment such as fire extinguishers, buckets etc. which shall be inspected by a building (Structural) Engineer who will certify that they are of the stipulated standard.

1.5.2 Teaching Staff

Adequate and qualified teaching staff should be employed at all times. Owing to the close attention required by children at such a tender age, the ratio of teachers to children shall be 1 to 25 at the maximum. For every teacher and a class there shall be complement of a nursery assistant whose qualification should not be less than the First School Leaving Certificate. A member of the staff shall have knowledge of first-aid treatment or have nursing education and experience to take care of minor ailments that may arise. There should be a separate room to serve as sick bay where children can rest before parents arrive to collect them. All the staff including cleaners shall be certified medically fit.

These and other things have been stipulated by the Lagos State Government for the establishment of a nursery school in the State. The newly inaugurated Board of Nursery Education in the State is currently working out the specific requirements of each of the areas such as building specification, qualifications of the teaching staff and the auxilliary, in and out door facilities, etc.

1.6 Pioneers of Early Childhood Education Methods

Planned institutional early childhood education aims not only at providing an atmosphere of affection and security but also at laying the foundation for the successful prusuit of the child's interests and attitudes. This has been the overriding concern of the pioneers of early childhood education or pre-school education. They recognised the importance of creating for the child such educational environment as would satisfy these aims for the pre-school child.

To this end, Froebel (1903) was able to identify play as the real work of childhood and the best method through which they learn. Montessori (1952) also recognised that children learn through their interaction with play materials in their environment. However, the difference between Froebel and Montessori on the use of play lies in their objectives. Froebel wanted children to gain the spiritual meaning symbolised by

the materials and their play activities. While Montessori wanted them to gain a greater understanding of the properties of the objects themselves as well as the achievement of specific skills gained through manipulating them. Perstalozzi (1898) affirmed that, for learning to be effective at the pre-school stage, education should be based on concrete experiences and sensory impressions. Thus, these pioneers supported and nurtured the natural play activities in the classroom as being educationally significant. From the conception of these pioneers, learning at the pre-school stage is undifferentiated because children learn essentially through play.

Consequently, the majority of the pre-school programmes which have evolved in countries where there is genuine concern and commitment to the well-being of their pre-schoolers, have been influenced to a great extent by these pioneers. For instance, the Game Oriented Activity for Learning (GOAL), the Developmental Intervention Activity and the Cognitively Oriented Curriculum of Weikart all have play overtones in them. Though there are variations in the degree of emphasis on the areas of development, the broad aim is to provide for the all-round development of the child and

to help him take his first steps through his school life with pleasure. This therefore is our premise for recommending a good and solid foundation on which we can build the future adults who can play constructive roles in the society and who can be regarded as assets to the nation.

There is the need for a drastic shift of emphasis in the teaching methods of the very young ones in Nigerian nursery schools. The need for the schools to justify parents' expenditure on the institutionalised early childhood education of their children has led to a high concentration on the cognitive area of development. This undue emphasis on and concern for academic achievement has caused the children to become mere recipients of facts.

The Nigerian parents' judgement or assessment of the effectiveness of pre-primary school education centres around the speed and the extent to which their children master the academic skills, rather than the extent to which their institutional experiences have enabled them to become enquirers, learners and investigators. This inappropriate index of academic success has resulted in the predominance of drills and memorisations as the commonest feature in a pre-school

classroom. Play, one of the best methods through which this age level learns, has been relegated to a state of recess or total abandonment in the pre-school timetable. In our effort to develop the teachable activities, even the spontaneity and delight of teacher/child, child/child play behaviours are utilized for structured lessons.

The Nigerian society seems to place greater value on the intellectual advancement of their pre-schoolers (Durojaiye 1974), Osanyin (1980). It is the desire of educators that learning at this level should not be characterised by mental drills but rather, by the play-way method. This play-way method ensures pleasurable learning for the pre-schoolers, this research therefore sets out to examine the effects of using a type of play, the socio-dramatic play on the numerical and verbal problem-solving ability of Nigerian pre-school children.

1.7 The Statement of the Problem

Nursery school is an educational institution which caters for the all-round development of the child. It is thus concerned with the physical, intellectual, social and emotional aspects of the child. Psychological research studies, by Piaget (1969), Sanford (1967), Bloom (1964) have shown that these

components of development are inextricably bound together. Consequently, Morgan (1974) warned educators of the danger of not providing adequate opportunities for these aspects of development in the pre-school programmes. He maintained that any educational programme that purports to develop a narrow aspect of the child is destructive.

However, inspite of this warning, Nigerian nursery schools seem to focus largely on only an aspect of these components. This is because the Nigerian teachers and parents of nursery school children expect the schools to concern themselves mainly with early discipline in formal school subjects so as to promote their children's intellectual development. Consequently, teachers in the nursery schools resort to intensive mental drills which do not promote verbal interactions among pupils nor meaningful associations in respect of objects, people, situations and general communications.

It would seem that the generality of Nigerian nursery school teachers are not completely aware of the effective way of maximising learning through play activities, that play is a powerful inner force through which the child interacts with his environment using different sensory modes. They are not aware either that learning through play activities, especially

socio-dramatic play, demands from the child the use of his knowledge of people and situation; that it promotes verbal interactions and meaningful associations between the pupils and the teachers and amongst the learners.

The extent to which children manifest curiosity, show interest in investigating, in problem-solving and in coping with anxiety, and the rate at which they develop concepts and mastery, reflect the type of exposure and support of the learning they encounter in their playful situations at the critical period of their life. Failure to use play activities in the early years especially in the nursery schools could result in, for example,

- i. Lack of the desire to investigate and be curious.
- ii. Inability to organise and categorise information.
- iii. Inability to act upon the stimuli received in observing, describing, comparing, classifying, ordering, interpreting and imagining.
- iv. Failure to utilise his experiences meaningfully and thus limiting his understanding of the world around him.

It is the opinion of this researcher that early childhood educators in Nigeria should concentrate on finding ways of helping the Nigerian pre-school age

children to acquire educative and meaningful experiences. Children reveal themselves and their understanding of the world around them most transparently in their play. It is therefore desirable to use play activities to enhance their learning. This research therefore attempts a comparison of the socio-dramatic play technique and a conventional approach to teaching verbal and numerical problem-solving tasks to Nigerian nursery school children.

1.8 Statement of Purpose

Notable educators such as Day (1978), Lillie (1975), Hymes (1974) have been concerned with how the pre-school child can best be taught.

Smilansky (1968), Rosen (1974), Saltz and Johnson (1974) have concluded that the use of socio-dramatic play facilitates effectiveness in problem-solving, leads to more accurate perceptual role taking and finally enhances significant increase in intelligent test performance. These conclusions were born out of their research studies conducted on different categories of pre-school children. However, are these conclusions applicable to children of different cultures? Can socio-dramatic play be harnessed to further the overall development of Nigerian children taking into consideration

the peculiar nature and practice of nursery education in terms of the curriculum content of the schools, class size, space, facilities and teacher quality?

Socio-dramatic play technique appears as an appropriate method which helps the child to go beyond the information given. Since pre-school children in a learning situation are seen as learners who must do, test, explore, and seek, the purpose of this study therefore is to examine through the use of socio-dramatic play technique whether the problem solving ability of Nigerian pre-school children will be facilitated.

Specifically, therefore, this research aims at:

- i. determining the instructional value of the use of play in solving problems ;
- ii. identifying one of the ways nursery school teachers can meaningfully utilize pupils' relevant experiences.;
- iii. enhancing the use of socio-dramatic play as an instructional tool.

Three tasks in verbal and numerical problem-solving abilities will be used to test whether or not the problem-solving ability of the children will be facilitated. These tasks are:

- i. classifying various objects found in the home, hospital and markets.
- ii. counting of these varied objects and
- iii. describing pictures of activities performed by the pupils in the process of solving problems.

1.9. Conceptual Framework

This study conceives play as the child's symbolic reproduction of his social environment. In such a play situation, the child attempts to abstract the significant elements of his environment and organise them in meaningful order. In this spontaneous expression of thought and feeling, the child is engaged in an educational activity.

The child's play involves the expression of some elementary emotions as love, and hostility, anxiety and aggression, sympathy and jealousy, all of which form the basis of psycho-analytic theory. According to this theory, play did not only involve these elementary emotions but also physiological and intellectual growth. White (1963) for instance saw in the child's play an active tendency to influence the environment while Almy (1967) stressed the intellectual progress that accrues to the child as he uses toys and equipment in his play activities.

Piagetian theory perhaps best analyses cognitive growth resulting from the child's play. Piaget equated cognition with action, believing that through play, a child becomes aware that objects have properties and that they can be classified in a variety of ways through the child's manipulation of those objects.

Piagetian theory thus conceives the origin of truly conceptual thinking as in the child's activities of sorting an array of objects into collections that have one or more similar attributes such as form, colour and weight which can be ordered from the smallest to the largest.

Therefore, play in this study is a purposeful interaction of a child with other children and objects. It is an activity involving emotional and physical growth as well as intellectual and cognitive development, the most of which are the ordering and formation of concepts.

This study examines the impact of one of the several forms of play, namely, the socio-dramatic play. This form of play is conceived as the child's reproduction and characterisation of adult activity. When two or more children in the enactment of dramatic sequence, such as portraying mummy, doctor, trader, their play becomes socio-dramatic. When such play is analysed, one finds that:

- i. the children are using social communication .
- ii. the children make-believe in action and situation .
- iii. Social-interaction is occurring,
- iv. they make-believe with regard to objects and
- v. they persist in and sustain social activities.

To perform such high level play, the child is challenged in many growth dimensions that facilitate his overall development particularly in the cognitive areas.

Socio-dramatic play is based on the Piagetian theory that the learner is an active participant in his learning, that is, the active interaction of the child with the physical and social environment is seen as the most important factor in cognitive development.

This is also based on his recommendation of an active method of education which places stress on the spontaneous aspect of the child's activities. By this the teacher becomes the facilitator of the natural development of the child by providing the materials, resources, problems and guidance.

1.10. Definition of Terms

The following terms are defined within the context of the research:

1. Socio-dramatic play - The broad definition given by Smilansky (1968) is strictly adhered to, that is, it is a voluntary play activity with six basic criteria:

- (a) imitative role
- (b) make-believe in objects
- (c) make-believe in action and situation
- (d) persistence

(e) interaction

(f) communication.

2. Problem-solving - refers to perplexing situation or question to which a solution must be sought.
3. Verbal problem-solving ability - refers to the imitation of adult talk for substitution for actions, objects and situation directed to the co-players.
4. Numerical problem-solving ability refers to the ability of the child to count, order, match, sort objects as required.
5. Conventional method - is the method of teaching in the nursery class whereby the teacher does not give opportunity for imitative role play, make-believe in actions, situations and objects but rather gives the child the required instructions and merely assess his performance.

1.11. Limitation of the Study

It was envisaged that the study would be conducted in more than one state of the Federation. However, because of financial constraints and the time limit at the disposal of the researcher, this was not possible. It is this same reason that is responsible for the number of schools selected for the study.

However, the randomness of the selection of the schools will help to make them representative of pre-primary schools in Lagos State. Furthermore, the large size of each class of nursery schools in Lagos State as reflected in the Lagos State Ministry of Education report, makes it impossible for the researcher to increase and expand the scope of the study.

1.12. Hypotheses

It is hypothesised that:

- i. There will be no significant difference in the verbal problem-solving abilities of nursery school pupils taught by the technique of socio-dramatic play and those taught by the conventional teaching method.
- ii. There will be no significant difference in the numerical problem-solving abilities of nursery school pupils taught by the technique of socio-dramatic play and those taught by the conventional teaching method.
- iii. The use of socio-dramatic play will not generate any greater interest in learning among nursery school pupils than the use of the conventional method of teaching.
- iv. The effect of the use of socio-dramatic play technique will not be related to the quality of teachers.

CHAPTER TWO

2.0. REVIEW OF LITERATURE

The review of literature for this research study will focus on the following:

- (i) theories of Early Childhood Education ;
- (ii) review of the Nigerian National Policy on Education ;
- (iii) review of Pre-school structures in selected countries;
- (iv) review of selected studies on Play.

2.1 Theories of Early Childhood Education

Early childhood education is currently enjoying a new prominence in most countries. There is now great interest in the educational welfare of children between three and five years of age. The convincing evidence of research reports that the first years of life are of crucial importance to development have resulted in the widespread demand for early education. This term is synonymous with pre-school, nursery school and kindergarten. However, concern for the proper early childhood education had been felt all through the ages. Froebel (1826) for instance had pointed out that the education of the child should be conducted by means of activities, needs, desires and delights which are common heritage of childhood. To this end, his methods

were based on the premise that man is essentially creative rather than receptive. Thus, self-activities and play that centre around the environment were what he considered as the best source of teaching the young ones. To Froebel, early childhood education is a matter of making the child to unfold his nature through action on the external world of men and things. His basic concept is that the young child is not a small adult and his suggests that his education should be different in form and content from what is offered to the older child. Specifically, he is credited with the following ideas:

- (i) Children should be allowed to play in the school to provide them with the "germinal leaves of later life."
- (ii) Children should be provided with natural materials and engage in creative activities.
- (iii) Mothers should be utilized as teachers aides.
- (iv) Teachers should be trained in apprenticeship programmes.
- (v) All children including the poor should be included in kindergarten programmes.

Montessori based her theory of early childhood education on the premise that a child needs an organised environment to which he can attach meaning in his process of unfolding. She believed that it is the way

this period of unfolding is handled that will determine the child's later learning. Thus if this unique period is roughly handled, a child will likely have difficulty in his in later life. She placed the greatest emphases on the spontaneity and energy of the child in learning.

Pestalozzi, according to Kessen (1953) constructed a curriculum for developing the three elementary divisions of knowledge, for the child so that he can benefit from his sensory impressions.

Examining the historical background for the influence of early childhood education, Beller (1973) identified the impact of some early educators. To him, John Locke and Jean Jacques Rousseau in the seventeenth and eighteenth centuries have had greatest impact on the approaches to early childhood education. He recalled that Locke's scientific views of the foundation of knowledge and his associational theory of learning have formed the foundation for the present approaches in the field of early education. Locke had emphasised that the child is an immature organism and must therefore be taught the skills and values of his adult culture. Reward, punishment and other contingencies of behaviour are what he regarded as the major incentives in the educational process. As early as the 17th century he had advocated for individualising educational programmes. Locke's conception of the child's mind as "Tabula Rasa",

a clean passive receptacle of impression, form the basis of early pre-school educational programmes that emphasised the direct teaching of skills and values held by the adult.

Rousseau on the other hand did not support a situation where the adult impose its values on the child. Rather he wanted the child to discover for himself through the exercises of his senses and his body. He strongly objected to direct skills teaching which he regarded as merely mirroring what the child is taught in a mechanical fashion. He was rather more concerned with nurturing the children's zest for learning by expanding his opportunities for unaided or autonomous exploration of his environment. He indicated that the child is not just a young adult but that he is going through a unique period of his life, a period of growing and unfolding. Therefore, the care and nurture received at this period of unfolding is of the greatest importance.

This nurturance is the responsibility of the child's home which is his first school. The home lays the foundation on which the child is to build later. To lay this foundation, every identifiable member of the child's family takes part in his education. They transmit to him the cultural heritage and also teach him what is acceptable to the community. The societal

expectation is that the child's total development and behaviour epitomise the type of upbringing he has received in the early childhood years.

White (1963) expresses the view that the home functions are mainly to provide for the child an emotional haven with socialisation in language and other cognitive skills while Levenstein (1977) feels that the parents serve as cultural, linguistic and intellectual teachers of the pre-school child. Taiwo (1966) says that it is only when the home has performed its educational functions efficiently that the school can hope to strengthen the foundation.

It thus appears that the pioneers in early childhood education have identified the childhood years as being crucial to the development of the child and the necessity of providing educational experiences that will help the child to develop naturally, unfold and blossom to the greatest extent possible. Perhaps more consistent with their idea is the work of notable scholars among whom we have Piaget (1952) who has provided us with information on cognitive development and stimulated our interest in facilitating children's early learning experience. Piaget revealed that the first five years of life are important to cognitive development because they lay the foundation for later adult intellectual life. He regarded the development of human

intellect as having two major processes which he called assimilation and accommodation. In assimilation, an individual abstracts information from the outside world and fits it into already existing knowledge by modifying it. He then accommodates the information to conform with existing schemata. The two processes are reciprocal though at any given point in development they may or may not be in equilibrium. However, balanced equilibrium between assimilation and accommodation is necessary for cognitive growth and development. A situation whereby a child tends towards either extreme is disastrous. It is necessary therefore to ensure efficient interaction of the child with the environment. Piaget asserts that learning takes place from inside the organism by an active process of construction rather than by passive process of absorption. To him, there are three sources of knowledge for the child. These are:

- (a) feed back from the material objects;
- (b) feed back from the people;
- (c) feed back from the structure that the child has built.

The teacher's duty therefore is not to transmit all knowledge but to help the child construct his own knowledge so as to build in the child, initiative, curiosity and confidence.

Piaget described the evolution of the child's thought as revealed in the child's play from infancy to childhood. The realisation by the child that objects have many properties, that objects can be classified in various ways, is, according to Piaget the result of the child's activity with the objects. The child's capacity to move and act on and manipulate those things in the environment therefore enhances cognitive development. The more curious the child is the more he will explore and the more knowledge he will gain. Thus, the child's exploration and manipulative play behaviours are nothing but a reflection of his developing intellectual competence. This means that the materials should be well selected and strategically arranged so as to present and confront the child with challenges.

The major position concerning early childhood education therefore is that the environment should provide nourishment for the child's development and that the content and the form of his education should be different from those of adults. Piaget affirmed that play is a way the growing child abstracts from the outside world and manipulates it to fit into the existing knowledge.

2.2 Review of the Nigerian National Policy on Education

The Nigerian public is not totally indifferent to the care and well-being of their children, For example, as far back as 1973, the Head of State of Nigeria expressed the nation's concern as follows:

"Children constituted the most important assets of a nation. As future builders of the nation, the future of any nation depends on how well they have groomed at the childhood level for adult life. It is here that our responsibilities to the children either as parents, guardians, institutions or governments come in to play. Our foremost task therefore is to provide the child to the best of our ability with all the essential needs for his harmonious and healthy development."

Nigeria is however in the throes of social and economic changes and these have greatly hampered the quality and the quantity of education of its children. Three indicators of these changes has been noted by Osanyin (1980) as:

- (i) the increasing necessity of mothers to who go out to work ;
- (ii) the increasing tendency towards a nuclear family system predominating in urban areas due to the geographic mobility of labour ;
- (iii) the scarcity of domestic workers as a result of the introduction of the universal primary education.

The resultant effect of the above has been the near total abandonment of the child-rearing functions of the homes. This is notwithstanding the resolution of 1978/79 in the government blue print on Education which states that it is the full responsibility of Nigerian parents to bring up their children to the age of maturity.

Formal education begins at the age of six and the National Policy on Education (1980) regards education at the primary school level as a determining factor in the success or failure of the rest of the Nigerian education system. It should not be assumed that because of Nigeria's stage of development the government does not sufficiently recognise the importance of early childhood education as to make adequate provision of it. The government on their part propose the following programme of action:

- (a) encourage private efforts in the provision of pre-school education;
- (b) make provision in Teacher Training Institutions for student-teachers who wish to specialise in pre-school education;
- (c) ensure that the medium of instruction will be principally the mother tongue or the language of the immediate community.

- (d) ensure that the main methods of teaching in the pre-schools will be through play and that the curriculum of Teacher Training Colleges is appropriately oriented to achieve this;
- (e) regulate and control the operation of pre-school education in the country.

But these programmes are yet to be implemented years after the policy statements. The seemingly lack of active government involvement in early childhood education of Nigerian pre-school children may probably be due to the fact that the various governments found it difficult to finance this level of education. It could be assumed however, that an awareness of its importance led the former Head of State General Obasanjo in his budget speech of 1979 to state thus:

As the formative years of the child are very crucial, my government sees it as a social responsibility to establish pre-primary or nursery schools.

It is thus clear from this statement that the Military government was aware of and appreciated the value of pre-primary education. The National policy on education defines pre-primary or pre-school education as the education given in an educational setting to children aged three plus to five plus years prior to their entering into primary school. It further states that education should lay the foundation for the

successful pursuit of general interest and attitude so that each child might develop to his full stature as a responsible citizen.

To achieve this, the policy suggests that efforts should be directed towards the social and intellectual development of the child. The purpose as contained in the policy states:

- (i) effecting a smooth transition from home to school;
- (ii) preparing the child for the primary level of education;
- (iii) providing adequate supervision for the children while their parents are at work;
- (iv) inculcating the social norms;
- (v) inculcating the spirit of enquiry and creativity through the exploration of nature and local environment;
- (vi) teaching co-operation and team spirit;
- (vii) teaching good habits.

Apart from providing adequate custodial care, these institutions are also expected to perform the functions of developing the child's cognitive and affective potentialities. However, apart from the policy statements and granting of permission to open pre-primary schools by individuals wishing to do so,

the Nigerian government has not been adequately involved in the early education of the children. The open-endedness of carrying out pre-primary school education may produce schools which can be detrimental to the child's proper development.

2.3 Structure of Pre-School Education in selected Countries

The structure of pre-school education differs from country to country, consequently, the programmes and the outcomes vary considerably from programme and country to country.

2.3.1 United States of America

For instance, the early childhood education programme at the Bank street College of Education in the United States of America operates on the rationale that children need predictable environment which they can trust. They need to learn the effects of their own action because skill learning and emotional development are intricable bound together and cannot be separated. Consequently, the Bank Street early childhood education pursues the following objectives with regard to pupil development. Each pupil is expected to develop a positive image of himself as a learner, develop an interest in learning with greater independence.

The curriculum and methods focus on progression from child-oriented content to social content.

Classroom themes are explored first and later extend to the community themes. Academic skills are learned in the context of relevant classroom life. Language, oral and written, permeates the classroom activities.

The most interesting pre-school programme which most Nigerian parents would want for their children is the cognitively oriented curriculum of David Weikart. This reflects a well structured and well graded academic programme. It derives its rationale from the Piagetian theory which focuses on classification, number concepts, causality, time and space awareness. However, this programme is well guided by the play way method. Children learn by doing, experimenting, exploring and talking about what they are doing. The teachers are provided with a theoretical framework of cognitive goals, materials and strategies. Such materials must encourage involvement, self-direction and verbal interaction among children. Generally it emphasises active engagement with the materials provided.

Nimnicht's Responsive Environmental Approach is based on the fact that children learn in different ways, at different rates and learn best when they are interested. The programme focuses on problem-solving

because it regards problem-solving as the essence of learning. The school sees learning as being its own reward, emphasis on learning how to learn and not merely acquiring specific facts. The development of positive self concept is also of importance to the programme.

2.3.2 England and Wales

Generally, all societies have educational programmes for their children. For instance, though it is difficult to find a set of specifically stated objectives, Blackstone (1972) writing for the Fabian society says among other things that pre-primary schools are to provide for the child one or two years of regular attendance at an educational institution before he starts compulsory school. In this setting, he will be encouraged to learn to co-operate with them and to accept the requirements of being one of a large number. Specific training in tasks like dressing himself and eating in socially accepted ways are also provided for the child. His emotional development will be encouraged by improving his self-confidence, enhancing his independence, teaching him to curb his aggressive impulses and so on. His intellectual development will be stimulated too by the provision of equipment and materials designed to promote motor and perceptual

skills and through music, poetry, stories and games which directly or indirectly are designed to improve linguistic ability and develop imagination and creativity.

The workers Educational Association (1971) offers the following reasons for pre-school education:

1. Attendance at a nursery school provides children with a stimulating environment where they can mix with other children and adults, enjoy space and play equipment and have the professional care and the educating influence of skilled people.
2. Children need opportunities to get to know people outside their own family circles and to form some relationships which are less close and emotionally charged.
3. There are children with special needs for which nursery education can compensate, for example children living in isolation in tall buildings and flats, children of working mothers, children from over-crowded homes, culturally deprived children, children from poor homes and children from immigrant families.

It is thus evident that nursery school education in England and Wales was started by those who had concern for the children of the poor or who are in any way at

a disadvantage, whose family could not provide adequately for their all-round development. However, as years went by it was the middle class families that realised the educational significance of sending a child to nursery school. Consequently it was this class of people that became the patronage of nursery education.

Nursery school education in England, according to Cusden (1976) is first and foremost an educational institution which takes the whole child for its provision. It is equally concerned with the physical, mental and emotional phase of the child's development and is specifically designed to provide conditions which will contribute to the natural and progressive growth of the child's faculties, the development of robust physique, the formation of desirable habits, the stimulation of healthy mental and spiritual reactions to social environment.

This emphasised the need for the method used in nursery schools to be child-centred with no formal lessons needed as in the regular elementary schools. The children are expected to occupy themselves in both indoor and outdoor plays. They draw, paint, model, listen to stories, tell stories, sing, dance to music, play shop and practice domestic duties. The approach is that the young child should be free to create his own educational and learning environment, while the teacher's function is limited to assisting him in performing these tasks.

Pary and Archer (1972) identified the following shifts in the purpose of nursery school education over the years—1918 - 1969 in England and Wales. In 1918, the concern was nurture, nutrition and care. In 1939, it was mainly for creativity and by 1969 the concern was intellectual development.

The Local Education Authorities (LRA) have the responsibility for educating the children. They construct schools, employ and terminate the employment of teachers, and supply all the materials and equipment needed. A child's attendance at a nursery school may be full time or part time depending on the wishes of the parents. The head of the school decides what and how to teach in the school as well as how the school should be organised and what books and equipment should be used. These schools are guided by the nationally prepared guidelines with some measure of freedom allowed at the local levels for content selection.

2.3.3 Belgium

In Belgium, preschool education is regarded as a maturation school whose principal role consists of stimulating the development of the child's personality by giving him the possibility to explore his needs, to move and show an interest in other individuals and

things around him. The basic responsibility of the teachers is to animate this environment and help the child to a better understanding of what he discovers and favours his social adaptation. The over-all purpose of pre-school education is to provide happiness and security. It is educative and makes the child acquire good habits, initiates his ability to co-operate and take on responsibility, teaches him language, develops his attention, memory and skills as well as his objective thinking. It helps his understanding of numbers, place, time and cause. It also allows small children to live fully and intensely at the same time gives them the possibility of reaching the maturity level of primary school education.

Pre-primary education in Belgium is both State owned and privately owned. The state subsidizes schools run by both the private individuals and voluntary agencies. This is done provided they adopt the structure and syllabuses enforced in the state schools or approved by the Ministry of education according to the assertion of Vandergen (1972). This shows that to some extent the government is keenly interested in pre-school education of its children and thus attempts to organise it on a national basis.

2.3.4 Italy

Le Morgan (1970) stated that the aims of Italy's educational system are not laid down in the constitution. They are found in the laws, syllabuses and ministerial circulars relating to the various stages of education and are therefore reflected in the various types of school. However, the traditional aims according to the Reviews of the National Policy on Education (1969) Italy is to provide the masses with elementary schooling. Within this general policy the specific aims of nursery schools as stated in the laws of 1968 are to develop the child's personality, prepare him for compulsory school attendance and supplement his upbringing in the family. These principles were expanded in the presidential decree of 1969 in the following respect among other things.

- (i) Their basic purpose is not only educative, but is concerned with the entire development of the child, hopefully maximising his real capacities.
- (ii) Particular attention is to be given to the development of the child's personality. A situation is to be provided where he can develop this to the maximum of his potential.

- (iii) The basic responsibility of the teacher is to foster a positive self-concept on the part of the child.

The curriculum of the pre-school is to reflect the development of the individual and the promotion of group activities more than any desire on the part of professional educators to set a rigid curriculum.

The National Didactic Centre for Pre-schools in a report lists the following areas of educational activity: religious instruction, affective, emotional, and cognitive activities, language education, graphics and arts, music, physical and health education.

2.3.5 Nigeria

In Nigeria, private individuals have the control and management of pre-primary education. In the government's efforts to decentralise the educational system and bring the grass roots into its policy making, the management and control of pre-primary education comes under the local government councils. However, government activity is limited to the granting of permission to open schools by individuals and organisations wishing to do so. At present, there is no Federally approved syllabus or curriculum guide for this level of education. Consequently, every proprietor decides on what to teach in his/her school.

The proprietor hires and fires his staff both teaching and non teaching, he constructs the school syllabus and makes provision for the school as required. He gets the necessary approval to open his school. Once the permission is obtained, the proprietor proceeds to do what he likes with the children in the name of education. As a result of this, the content of nursery education in Nigeria is as varied as the number of schools there are. Nevertheless, since both the parents and the teachers regard these schools as part of the primary schools which are chiefly concerned with early discipline and training in formal school subjects, it is possible to identify the following content areas in the schools:

- (a) Number work
- (b) Elementary science
- (c) Language
- (d) Writing
- (e) Music
- (f) Drawing and painting (Osanyin 1980).

These school subjects are considered important because they are required at the primary level. It is however questionable whether these children should be provided at this stage with the academic preparation for schooling later.

In nursery school teaching, it is not the amount of content meted out to the children that really matters but the process of teaching the subject matter. The methods used in Nigerian nursery schools are those used in the primary schools. Ozigi and Canham (1978) identified the following teaching methods:

1. Lecture
2. Discussion
3. Laboratory
4. Project
5. Discovery
6. Play-way and
7. Recitation

The kind of teaching method used depends on the objectives and to achieve a particular objective, different methods may be used.

2.4 Review of Selected Studies on Play

2.4 1 Introduction to play as an avenue for learning

An interesting challenge in the field of early childhood education is the need to justify the use of play in the teaching of pre-schoolers. Spolin (1972) asserts that if the environment permits it, anybody can learn whatever he chooses to learn, and if the individual permits it, the environment will teach him everything it has to teach. The important function of nursery

education then seems to be the creation of conducive environment where the child can interact with the social as well as material environment to maximise his intellectual potentials.

Since a good nursery school education seeks to develop basic skills and initiative to enable the children to solve problems that confront them and move forward toward ever improving solutions, their best language, play, seems to be the best method of reaching them. Play activities provide for information-seeking behaviour. Moffitt (1972) asserts that play is a powerful inner force through which a child reaches out to interact with his environment. The child, according to him learns to move when he can move around, handle, and manipulate objects. Through such activities he learns much about the properties of matter and finds ways to adapt to a complex environment through experiences related to cause and effect. To Piaget (1952), play permits the child to make intellectual response in fantasy when he cannot make one in reality. It consolidates learnings he acquired elsewhere and prevents them from disuse.

Piaget (1962) showed that dramatic play provides an important entrance into the symbolic world. In other symbolic making activities like painting, clay making and model, the child cannot directly externalise

his mental images because he has to express it indirectly through paint and clay. In dramatic play, he can externalise his mental images directly with his own body. For instance, Piaget says, a boy who wants to symbolise the ideal father, it is only in dramatic play that the boy can use his own body directly to symbolise the ideas he wants.

Socio-dramatic play therefore provides the unique situation in which the child can be the symbol and the symboliser. It has the additional advantage of movement, interaction and continuity over time. Millar (1968) affirmed that the child in this way may be exploring his feelings, lessening his fears, trying to understand a puzzling event or seeking confirmation. Play is thus seen as the finest form of education because the whole process of education is fully consummated in it.

The skills that need to be developed as well as the materials which should be included in the environment have been discussed by various educational researchers. These skills do not only involve the systematic development of the intellect but also the shaping of the child's feelings, attitudes, values and self-image.

With the provision of such conducive environment in the nursery school, a common feature of the classroom behaviour is the child's spontaneous involvement in manipulative tasks. It is through this involvement that he learns about the world and finds outlet for his complex and often conflicting emotions. The child's involvement in his play activities is often followed by various teacher assistance to aid his learning in that play situation. This teacher assistance could be in the form of questioning, suggesting and verbal reinforcing. The kind of learning that may occur in the investigatory behaviour of the child as he manipulates his selected materials is greatly influenced by the teacher's own behaviour and the assistance offered in the play situation.

2.4.2 Value of Play

Various people including researchers who are keenly interested in the use of play in the classroom situations have actually found it difficult to give a precise and logical definition. Such definition they say is fluid and merely dependent upon the perception of the definer within his specific situation. For instance, a young child will enter a play environment with certain amount of his own innate personal knowledge, skills and attitude and perception of the

other children in the play situation. It is this that will determine the kind of interaction that will exist between the children.

Some of the early educators and parents according to Frost and Kissinger (1976) saw little value in the use of play. To them, its concern is merely with the release of excess energy. Others however saw it as serving more functions. To Frank, (1963) when children play, their exploration aids the development of concepts, perception, linguistic and intellectual skills. It is as a result of the realisation of these unique values that interests have recently been generated in the area of play in the early childhood education. Such interests have produced several empirical studies and review articles which examined play in all its ramifications. Early childhood education specialists have then discovered that play is one of the most effective means of learning at the early period of life when the foundations for intelligence are laid. Goldsworthy (1971) described play as the greatest psychological need of the growing child. His believe is that if play is provided under good environment it is capable of producing mental vigour.

Barbara Day (1980) has extensively discussed the value of play. She broadly categorised these values into four basic areas - social, physical,

emotional and cognitive. Socially, she says, it is in the play environment that a child learns to be one of a large number and discovers the self then reaches out. to other co-players, learns to understand them, their interaction helps their development of attitudes, they learn about their culture, their personalities and their emotions. Participation in play helps children to learn to follow rules, to allow the group to rule, to receive the fulfilment of group identity and to learn to live with the others. Children's interests fuse in play, bringing them into new social contacts and new situations which they learn to handle. Their imagination and love for creative dramatics enable them to assume various roles, feelings, attitudes and emotions".

Play is of great value to the child's emotional satisfaction and stability. It is an avenue for the child to externalise feelings through dramatic and artistic expressions that are shared with the others. It also serves as one of the channels through which children learn to solve problems. That is, playing out a problem enables the children gain mastery with a sense of assertion. Through imaginative and fantasy play, children learn about the outer and inner world of their lives.

Cass (1971) described children as entering into the imagery play environment with fresh and spontaneous actions with unique characteristics which are necessary for success in later life. To him, imagery skills developed during the childhood are substructures of problem solving, anticipating outcomes, foresight, and many other cognitive, affective, physical and creative tasks encountered at all ages above the early years.

Barnett, (1977) viewed young children's interaction with their environment as a way of making possible the playful practice of sub-routines of behaviour that later come together in useful problem solving. To him, the ability to fantasise freely is a cognitive skill related to concentration, fluency, spontaneity of thought as well as to the ability to organise and integrate diverse stimuli. The ability of the child to concentrate and persevere on tasks, to discriminate between shapes, to gain the meaning of words and to solve problems and make decisions are what he regarded as basic skills for development.

2.4.3 Play in some existing pre-school programmes

Most early childhood programmes now regard play as a primary way for young children's learning. They therefore place great emphases on it. For example, the Bank Street programme ensures that teachers use play in the school activities. Maccoby and Zeiliner (1970) have shown how play is to be implemented in the school programme - it must reflect how the child perceives relationships, reveals how he orders the world and this is the way he learns to integrate his ideas and develop them.

An important goal in Bank Street is supporting the play mode by incorporating experiences, by nourishing and by setting the stage for dramatic play activities. The most elaborate form of symbolising experience is seen in the self initiated dramatic play through which children relive the most meaningful aspects of their life experience. In the course of the spontaneity of their actions on their materials and immaterial world, understanding is extended to various problems relating to world-meaning, insight and generating questions.

As a result of the significant role attached to dramatic play, space, time and materials are allotted to it daily in the school activities. The materials include blocks, trains, animals and human figures,

dress-up clothes, house keeping toys etc. Support guided play is also another core of the Bank Street Programme. This is based on the principle of active participation in a safe nurturing varied environment. It assumes that growth is in stages in the direction of increased differentiation and heirarchical integration. To the Bank Street designers, the classroom is the children's workroom where they are free to manipulate objects and explore various media.

The desire to create an environment that is responsive to the needs of the children is the guiding principle of Nimnicht's model. To him, problem-solving is the essence of learning and it is best learnt in an atmosphere which poses problems and challenges and at the same time encourages the discovery of their solution. The environment is arranged in such a way as to enable the children to make discoveries about the physical and social world. The children are free to choose from a variety of activities - art work, puzzles, looking at books, listening to records and playing with maipulative toys. The teachers play games with the children, read to them and respond to their spontaneous activities. Although the children have free choice of activities within the environment, the teacher decides which activities and materials would be available each day.

The High Scope educational research foundation led by David Weikart has incorporated play in the various programme. For instance, in identifying its key experiences for intellectual development, he did this in the play situation and gave action, language, classification seriation, temporal and spatial relations as key experiences. The broad upurpose is to enable the pupils to think predict, use language meaningfully and so on in order to develop positively.

2.4.4 The role of imaginative play in cognitive development

Piaget regards imaginative play as a phenomenon that is due to the disequilibrium of representational assimilation and accommodation in the pre-operational stage. Smilansky (1968) Sutton and Smith (1971) have however suggested that specific cultural conditions, interpersonal encounters, learning and adult attitudes are necessary for the growth of imaginative play. To Fink (1984) these include the freedom from social responsibilities which is characteristic of childhood, the adult's encouragement of and involvement in the child's make-believe activities. The cognitive character of imaginative play is found in the conflict situations that the child encounters. This makes for the disequilibrium between his structures and the environment.

Fink therefore from this conflicting perspectives, examined the role of imaginative play in the attainment of conservation and perspectivism. In his study, make-believe compels the child to conserve the identity of other people; objects, oneself and the situation in terms of a make believe meaning that is incompatible to their real non-play denotations. The child's play constructions involve a practical encounter with conservation principles. As the child comes to frequent use of abstract forms of representation his experience may increase his awareness of its essential properties. The conceptual awareness that an object has more than one important aspects and that they are in some form of relationship to one another is what he calls perspectivism. This means that the child must differentiate adequately between his own immediate point of view and that of others. In socio-dramatic play, he must regard his actions from his role perspective and from some one else's perspective at the same time.

Thirty-six non-conserving children of mean age 5.10 were involved in the study of Fink. They were assigned to 3 experimental conditions -

1. structured group training in imaginative play processes;
2. extra-free play activity in non-directive presence of the experimenter and
3. a control group.

Eight training sessions were carried out and each lasted for 25 minutes. There were 4 themes: a huge fire in a downtown area, running of a restaurant for travellers, the establishing and running of a zoo and a magic show. The researcher enumerated the various roles and assigned one to himself while the children were encouraged to take others. He further suggested some props which were necessary and so every one took part in the construction of the props from materials like clay, blocks; pipe cleaner etc. After making the prop the investigator began to develop the plot with "let's pretend" comments that set the initial stage. He engaged the children in roles appropriate to the conservation and action by interacting with them in terms of their make believe identity. Different tones of voice were used for the characters.

The result shows significant increase for the trained group in social role conservation, understanding of kinship relations and level of free-play imaginativeness. Conservation of number and continuous quantity were however not significant.

These findings show that imaginative play can aid the generation of a new set of cognitive structure under certain conditions through the use of reflection, role integration, language, role conflict and representational activity.

The educational implication of this study is that its training technique presents a basic strategy for a play oriented teaching. It involves the active interaction of the teacher with the imaginative play situation. The duty of the teacher essentially is to initiate the activity and serve as a model of oriented activity.

2.4.5 Play and individual differences

The tendency to engage in 'pretend play' is a function of the type of child-rearing that a child is exposed to and this can be amenable to modification by training. According to Singer and Sherrod (1977), pretend play reflects a general tendency to use imaginal processes in coping with real life events while to Rubin and Pepler (1979), the social expression reflects a social orientation accompanied by advanced social skills and perceptions.

That 'pretend play' reflects a general imaginative or fantasy disposition has been examined by Singer and Patner. According to them, individuals differ in their ability to create alternative, imagined environment that serve to cope with cognitive, social and affective demands. These internal environment according to them, rests on the individual's skills in forming, storing, accumulating and recombining images

and skills that are amenable to adeptive control. It has been confirmed that children's tendency to engage in pretend play and the ability to do so imaginatively is related to several aspects of social behaviour and social functioning. Fein (1981) reported positive correlation between dramatic play and performance on role taking tasks, measures of general orientation, co-operation with peers and adults, friendliness and popularity with peers, general adjustment and the use of language during play.

2.46 Social Class effects

It is generally assumed that children from poor homes are less likely than affluent children to engage in pretend plays. Nevertheless, an empirical study by Sussman (1977) has highlighted that structures and setting rather than children's abilities have been found to influence pretend plays. Usually, in empirical studies of socio-economic status, social class is treated as a blocking variable. Consequently, little is known about things like parental stimulation, attitudes and availability of play materials in the home.

2.4.7 Sex differences

It has been found that the sex of a child determines to some extent his choice of toys for play.

For instance, Cornor and Serbin (1977) and Fagot (1978) affirmed that girls prefer dolls and house toys while boys prefer blocks and transportation toys. Sex type play is also associated with parental reinforcement. Fathers are reported to disapprove of their sons' feminine roles and the use of feminine toys. On the other hand, girls are consistently assigned and encouraged with feminine roles and toys. Fagot reiterate that boys are more likely to adopt fantastic motoric roles like monsters, spacemen or play fighting than girls. Girls are more likely to adopt anticipatory roles associated with domestic activities e.g. marriage, holiday etc.

The roles that children assume are either anticipatory or fantastic. Anticipatory roles are those that the child might realistically encounter in real later life while fantastic ones are those that will seldom if ever encounter. Stone (1971) has suggested that fantastic drama serves to retain and keep viable the past myths, legends, villains and heroes of the society whereas anticipatory ones provide a context of rehearsal of adult roles and communication with those who will be performing these roles. The need to examine the relationship between anticipatory and fantastic type of pretense and various social,

cognitive and imagery makers has made Vonnice McLoyd and colleague (1984) to examine four types of role enactment - domestic, occupational; fantastic and peripheral and object ideation, social organisation and metacommunication. The study involved 18 children aged 3.5 years and 18 other children of 5 years old. All children were from low-income families and in the same centre. Same sex, same age children were randomly grouped to constitute six 3.5 year old triads and six 5 year old triads equally divided by sex. In one session of pretend play, high specificity toys - tea set, stove, tool kit, medical kit, dolls, ironing board, sink, etc. were made available. In another session low specificity toys - boxes, pipe-cleaners, cardboard, cans, bags, paper bags, etc. were available to the children.

From the transcript of the 24 video taped sessions recorded, they found that older boys were more likely than younger boys to engage in fantastic role play and that girls tended to engage in domestic role play than boys. It was also found that object ideation was less frequent, while interactive behaviour and metacommunication were more frequent during fantastic role enactment. These findings indicate that children rehearse certain social and cognitive skills to varying degrees when they enact different types of roles.

Jennifer and colleague (1984) studied the relationship between social fantasy play and several indices of social competence in a naturalistic setting. They took into account the possible effects of age, IQ, sex and activity level. As such their study provides a large-scale analysis of spontaneous pretend activities in relation to their social skill correlates. The sample consisted of 91 pre-schoolers aged 35 months to 69 months. Observations of the frequency and complexity of social fantasy play were collected. Multiple regression procedures were used to analyse the prediction of social competence from fantasy measures independent of sex, IQ and the frequency of social activity.

The results indicated that those young children who frequently engage in social fantasy play were more socially competent. Their teachers rated them as more socially skilled in their peer activity oriented classroom behaviours and ranked them as more popular playmates with their peers. High-social-fantasy play children were generally more socially active and this activity was characterised by sustained reciprocal and verbal nature. It was also found that those children whose social fantasy play more often included multiple and complex fantasy transformations showed greater maturity in their role taking skills.

This finding suggests that social fantasy play is most predictive of the skills and competencies apparent in the child's social interaction with the peers.

2.4.8 Task persistence and teacher assistance in the nursery school

Murray and Scarth (1977) investigated task persistence and teacher assistance in the nursery school. They studied 39 pupils under conditions of spontaneous task selection with the naturalistic content of the classroom. Their procedure was to measure variations in the task persistence of the children. The experimental situation for the study included where the experimenter:

- (a) joined child in his play but merely observed;
- (b) joined in the activity and verbally reinforced;
- (c) joined in the activity, asked questions designed to elaborate the child's persistence;
- (d) joined, observed, and timed but did not participate.

Pearson product moment correlation was calculated for the total on task behaviour. She found that adult's irrelevant comments led to negative effect on play

performance and adult intrusion led to tension. They also found that the situation where the adult was highly directive led to less performance on task. Generally, they found that the experimental group, a situation where the adult joined asked relevant questions and suggestions performed significantly better than the control group where the adult merely observed and timed them.

This result suggests that an adult's effort to increase the task persistence of pre-school children can be augmented by the combined application of proximity, verbal reinforcement and prompting procedure. The study describes the nature of short term impact of teacher assistance and no information on the cumulative effect of such assistance over along period of time. However, the implication of this for pre-school education is its emphasis on the child's spontaneous self selected activity and teacher's influence on the persistence of children.

2.4.9 Teacher influence on the child's spontaneous play activity in the classroom

Aletha et al (1977) examined the amount of teacher directed play activities in 13 schools involving 141 pupils. Individuals and group observation of the pupils were carried out for a period of one month. They

broadly identified the teacher function as that of arranging the environment to provide for optimal social and cognitive development. The extent to which the teachers directed the children's play activities were identified under three criteria thus:

- (a) Academic oriented.
- (b) Class activity structure.
- (c) Insistence upon attention to task.

Inter correlation and analysis of variance were conducted for the data obtained. They found that children in the highly structured classes engaged in less prosocial behaviour to peers, were involved in less imaginative play and there was a lack of independent task persistence. However, the subjects were more attentive and they conformed to classroom routines when compared with the low structured classes. It is evident from this study that teacher interference is seen as a hindrance and constraint on pupil's behaviour.

In a similar study Fagot (1973) observed teachers and pre-school children in three different situations and discover how different types of teacher behaviour relate to children's task behaviour in the nursery school. He had used only 18 pre-school children and was able to identify 28 children behaviours and four categories of teacher behaviour which are:

- (a) teacher initiates activities ;
- (b) teacher joins in activities ;
- (c) teacher makes favourable comment on the child's activity ;
- (d) teacher criticises activities of pupils.

From this he also found that teacher's irrelevant comments produce negative effect on play of the child.

These research findings imply the need to provide the child with an environment that reflects a positive emotional climate as well as a teacher who is ready to intervene and capitalise upon a teachable moment for stressing the development of identified skills.

2.4.10 Cognitive consequences of the various types of play in the learning behaviour of pre-school children.

Early childhood educators have attempted to show the various cognitive consequences of the various types of learning behaviour in the young pre-school child. Smilansky (1968) for instance after observing the behaviour of both disadvantaged and advantaged Israeli pre-school children concluded that the disadvantaged children lack the ability to integrate their experience. This led her to examine the free play behaviour of both types of Israeli children. She found the disadvantaged children engaged in such less and poorer quality role play and socio-dramatic play. A subsequent field study where a comparison of the two types

of children were made on the criteria of direction, role, decor, and appropriateness led her to conclude that the differences were unrelated to the emotional atmosphere or the quality of toys within the home but were attributable instead to a failure of the home to equip the children with the required verbal, cognitive and social skills.

The striking similarities between Smilansky's children and the Nigeria children make the results of her study highly relevant to the Nigerian situation. Even though the Nigerian pre-school children have not been proved to be disadvantaged, the prevailing social and economic conditions which prevent the various homes from performing their child-rearing duties in respect of the child's cognitive development and thought processes tend to place the children at a disadvantage. Similarly, Smilansky's children were drawn from the imigrant families who were thus culturally deprived. The Nigerian pre-school children especially in the urban centres are also from the various parts of the country. In that regard, it becomes difficult for the nursery schools to perpetuate the culture of each of the children in their care.

Since it is discovered that the important element of play is lacking in the development of children who are disadvantaged, such children are described by Smilansky as:

1. Aimless, lethargic and sometimes impulsive,
2. difficult to arouse and give pleasure,
3. Having repetitive and stereotyped movement,
4. Afraid to tackle new tasks.
5. Seeing the world as lacking order and clarity,
6. perceiving objects as lacking names,
7. drifting to small structured materials, etc.

However, there are two questions that one may want to raise concerning Smilansky's work. Are her results generalisable to children of a different culture? If so can socio-dramatic play be harnessed to further the overall development of children? This study was replicated by an American researcher in what seems to be a verification of the conclusions of Smilansky that an increase in socio-dramatic play had effects on the cognitive performance of Israeli disadvantaged children. The American researcher, Rosen (1974) used 58 children in four classes. He had the control group which had no play intervention and the experimental group with the intervention and measured on Smilansky's play categories. He introduced Torrance productivity technique, group effectiveness on a task, role taking and psychological distance. Analysis of variance were applied to the test scores. His result supported Smilansky, as her subjects who were taught and who utilised the basic technique of socio-dramatic play

displayed greater productivity, effectiveness in problem-solving, and more accurate perceptual role taking than the control group who had no play intervention.

Saltz and Johnson (1974) also tried to examine whether training disadvantaged pre-school children in thematic fantasy play would facilitate their functioning on a number of cognitive tasks. In this study, the researchers trained pre-school children in small groups to enact familiar fairy tales. Measurement was done on the children's dimension of fantasy-reality, time compression and causal relation, play enactment and verbal stimulation. A four factorial analysis of variance was performed for the data.

It was found that not only did the incidence of spontaneous play increase but that it showed large effects on intelligence test, test of story interpretation, sequential memory and empathy when scores were compared with the control groups.

2.4.11 Symbolic play and cognitive Development

Many educators have in various ways attempted to justify the use of the child's play in the nursery school. For instance, Golomb and Cornélius (1977) studied the use of symbolic play in fostering cognitive development. The significance of their work was that symbolic play can be used to teach specific

cognitive skills. They had involved only upper-middle class children in the study. Only one experimenter used two symbolical plays to test the children's conservation. The experimenter initially elicited from the children their conservation judgement. He then asked the children to justify their response. For example, the child was asked "how much was there at first? How much is there now? How do you know that? How did that happen?"

The result of the study showed that conservation of mass and liquid can be fostered through symbolic play. However, Guthrie and Hudson (1979) in a replica of this study, found that symbolic play had very little effect on conservation. The contradictory findings may however be due to the fact that only one experimenter was involved in Golomb's study while Hudson's had multiple experimenters. Golomb's study also used the upper-middle class children whose performance might have been accelerated by their culturally and socially advantaged environment while Hudson's had a more representative sample. Nevertheless, the studies have uncovered a powerful developmentally appropriate training strategy.

Wolfgang (1976) had also indicated the learning possibilities that can be generated from play. The traditional subjects of science, mathematics, geography and social studies are embedded in such plays. Such cognitive strategies can be classified as in measurement, quantity, categorising, classifying, sequencing, process of change and adaptation in reaction to problem-solving, experimenting, finding alternative solutions and flexibility in thinking and actions. Thus, the unique function of play in the intellectual life of the child can be used to further support the contention that play has a legitimate place in the pre-school curriculum.

2.4.12 Play and mathematical concept formation

In an earlier study, Zammareli and Bolton (1974) had examined the effect of using play on mathematics concept formation with 24 children ages 10 - 12 years. They used four wooden blocks of different colours as well as toys. The children were individually requested to take each of the wooden blocks from the centre and place on their own table. Altogether, 16 possible combinations were made. After four days, they were required to recall the the 16 combinations. From the result of this play situation, the researchers

affirmed that play can lead to greater understanding of the rules embodied in mathematical concepts with a better memory for such rules than mere observation. They found that the children in play groups used information more effectively and therefore programmed their activities. The children were able to change their hypotheses to a great extent than did the control group who had no play situation and were thus mere passive recipient of information.

The implication of all these research studies is the need to help the child explore beyond the information he is given. Since pre-school children are regarded as learners they must begin by doing. To test, explore and seek are essential ingredients of learning. It is the children who must seek, explore and test if they are to develop cognitively.

Cognition refers to an awareness, a discovery or a rediscovery, a recognition of information in all its various forms. Problem-solving then is a subset of cognition. It is a perplexing situation or a question to which an answer must be sought. Pre-school children need experiences in coping with all types of problems provided they can do something about them and not just hear about them or merely observe how solutions or how results are reached.

CHAPTER THREE

3.0. METHODS OF RESEARCH

3.1 Introduction

This study attempts to investigate the effects of the use of Socio-dramatic play technique on verbal and numerical problem-solving abilities of nursery school children. This chapter presents the design and the procedure for the study. The presentation focuses on the following: The aims of the study; the population and sample; design of the study; instrumentation; training session for the teachers; teaching procedure; data scoring, coding and analysis.

3.2 The Aims of the Study

The purpose of the study as stated earlier was to find out whether the problem-solving ability of pre-school children will be improved by the use of socio-dramatic play technique. Specifically, therefore, the research aims at:

- (i) Determining the effects of the use of play for children in problem-solving.
- (ii) Identifying one of the ways nursery school teachers can meaningfully utilize pupils' relevant experiences.

- (iii) Enhancing the use of socio-dramatic play as an instructional tool.

3.3. Population and Sample

This study is carried out in Lagos State of Nigeria. The reason for this is that Lagos being the current Federal capital, has the greatest number of pre-primary schools in Nigeria. Table 1 shows the distribution of the schools in some of the states of the Federation as at 1986.

TABLE 1 : THE DISTRIBUTION OF NURSERY SCHOOLS IN NIGERIA

NAME OF STATE	NUMBER OF REGIONAL NURSERY SCHOOLS
Anambra	38
Bendel	88
Benue	39
Borno	24
Cross Rivers	29
Imo	25
Kaduna	53
Kano	40
Lagos	127
Ogun	16
Oyo	47
Total	526

From this statistics, it was pointed out that there was a total of 526 pre-primary schools in Nigeria. Of this, Lagos State has more than thirty per cent of the pre-primary population in the country. As the Federal Capital, Lagos also attracts people from different states of the country and so children from other states of the Federation attend pre-primary schools in Lagos. This is confirmed by Osanyin (1980) who found that Yoruba children in eighteen schools in Lagos State accounted for fifty-eight per cent of the population of the schools.

Only the schools which are registered and approved by the government of the State were used in the study. This was done so as to eliminate the inclusion of make-shift, substandard and the unrecognised pre-primary schools and Day Care Centres that exist in every corner of the State.

Of the total of 127 government-approved schools in Lagos State as at the time this research commenced, the researcher decided to use only ten of these schools because of the limitation of time for the study and the financial resources available to the researcher. The choice of schools was guided by the concentration of the schools as evident from the statistics received from the State Ministry of Education in 1984. From the pattern of distribution of schools in the State, the researcher decided to take one school out of every 12 schools in each locality. Table 11 shows the distribution of pre-primary schools in the State and the number of schools selected from each zone for the study.

TABLE 2 : DISTRIBUTION OF PRE-PRIMARY SCHOOLS IN LAGOS STATE

ZONE	NO. OF SCHOOLS	NO. SELECTED
Lagos Island	19	2
Surulere	23	2
Mushin	55	4
Shomolu	14	1
Ebute-Metta	16	1
Total	127	10

From Table 2, it is clearly shown that a sample of ten schools was selected. To ensure that bias or extraneous variables were not introduced into the experimental results, five of these schools were randomly assigned to the experimental group while the five others were randomly assigned to the control group. The researcher decided to use only the Nursery class two for this study. This was because this group has had at least a year's experience of nursery school education. Moreover, they are between the ages of four and five and a half. It is at these ages that children, according to the Association of University Women (1970), have lively minds, ask questions for information, want to know the how and why of things in their environment. Almy (1967) also shows that it is at these ages that children show keen interest in home chores and have increase in vocabulary which they are

ready to use if they are sufficiently encouraged.

3.4. Design of the Study

The research design involved a pre-test, treatment and a post-test. An experimental group and a control were selected for the study. The same pre-test was administered to both groups at the commencement of the study. Different treatments were applied to the experimental and control groups. Later, the same post-test was administered to both groups. The design is represented schematically in Figure I:

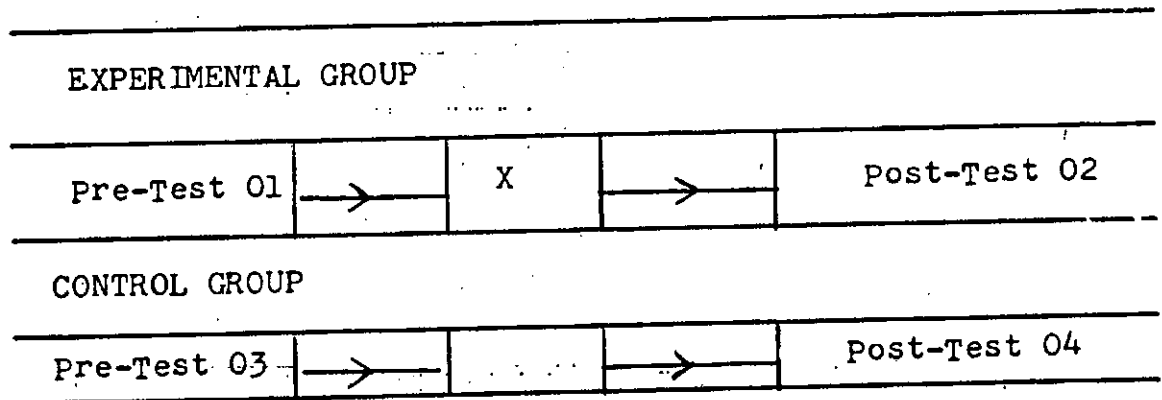


FIGURE I: DESIGN OF THE STUDY

The mean scores of the experimental and the control groups were expected not to be significantly different at the beginning. Therefore, the differences in the post-test scores could be attributable only to the treatment. This is in support of Campbell et al (1967) that:

"the more similar the experimental and the control groups in their recruitment and the more this similarity is confirmed by the scores on the pre-test, the more

effective this control becomes. Assuming that these desiderata are approximated for the purposes of internal validity, we can regard the design as controlling the main effects of history, maturation, testing and instrumentation."

Therefore, in the schools a pre-test was administered to three classes of nursery two class. This gave a total of thirty classes for the ten schools. However, only twenty of these classes were used for the study. The response of the pupils in the pre-test enabled the researcher to select two equivalent groups in respect of class and scores in the pre-test.

Altogether, a total of 630 pupils were involved in the study. In each group, there were 315 pupils. The experimental group was taught through the use of socio-dramatic play technique. This was done by the creation of learning corners in the classrooms. In creating the learning corners, the themes of hunger, illness and shopping were developed. The pupils were required to enact and elaborate the themes. Materials, toys, play objects and improvised things were extensively used in developing the themes. The teachers were required to teach all the subjects on the class time-table through the corners so created in the experimental classrooms.

3.5. Pilot Study

After constructing and validating the research instrument, a pilot study was conducted. The purpose of the pilot study was to test the clarity and precision of the instrument. It also enabled the researcher to examine the coding and recording format of the tools.

3.5.1. Questionnaire

The questionnaire was tested on nursery school teachers in 1984. The sections of the questionnaire consisted of personal details and attitude towards the use of play. The personal details section was aimed at obtaining information about the teachers age, marital status and length of teaching experience. The questionnaire was administered to the teachers before the commencement of the demonstrations in the use of socio-dramatic play.

Four of the teachers were trained in the technique of socio-dramatic play for three weeks. The remaining four teachers were not taught the technique of socio-dramatic play. They were required to use the conventional method of teaching. After three weeks, the same questionnaire was administered to the eight teachers.

As a result of the analysis of the response of the teachers on the questionnaire, the order and sequence of the questions were modified. Questions which were considered ambiguous were reframed. The final form (see Appendix A) was used on the target population.

3.5.2. Observation Schedule

The observation schedule was tried out in four nursery classes from two reputable nursery schools in Lagos State. Three trained observers simultaneously observed the identified categories. As a result of the pilot observation, the researcher was able to generate more sub-categories for the observation. It was also possible to formulate the guidelines for the observers.

The reliability co-efficient of the observation schedule was 0.68. The observation format (see Appendix B) in its final stage was used for the actual study.

3.5.3 Test

The test consisting of counting, classification, and verbal description of activities was administered to 120 pre-primary school pupils in the reputable schools. Four classes were used. The test was administered to the pupils in the two schools by the regular class teachers before teaching started. In one school, two nursery classes were taught by the technique of socio-dramatic play for three weeks. The teaching was done by teachers who have been taught the technique of socio-dramatic play. Two other classes in the second school were taught by the conventional teaching method for three weeks by the regular class teachers. Immediately after the three weeks of teaching, the same test was administered. The co-efficient of the test-retest method was found to be 0.71.

3.6. Instrumentation for the Main Study

In order to examine the research hypotheses stated, three research tools, questionnaire, observation and achievement test were used to collect data.

3.6.1. Questionnaire

A structured questionnaire was designed by the researcher (see Appendix A). The purposes of the questionnaire were :

1. To elicit from the teachers information about their attitude to the value of play, the functions of the teachers in the play situation and the use of materials in the play.
2. To select teachers with favourable attitudes towards the use of play in the classroom.

For face validity the first draft of the questionnaire was given to two Headmistresses and a teacher of nursery school children. They were required to assess the questionnaire for its comprehensiveness and relevance. They made useful suggestions after which four senior members of staff of the Faculty of Education of the University of Lagos helped to assess the questions. The final draft was again carefully scrutinized by two other lecturers in the nursery programme of the Faculty.

For reliability the draft was administered to four Associateship Diploma students of the nursery education programme of the Faculty and four nursery school teachers in Lagos State. Their responses to the questionnaire were examined. Questions which were considered ambiguous were reframed. The questionnaire in its final stage was administered to the ten 1984/85 pre-primary student-teachers and ten regular nursery school teachers. A total of twenty teachers actually took part in the study. The questionnaire consisted of twenty Likert type items. Ten of the items indicating unfavourable attitude were shuffled with the remaining ten that indicated favourable attitude.

3.6.2 Observation Schedule

An observation schedule was designed for both pupils and teachers (see Appendix B.) The purpose of the observation was to afford the researcher an opportunity to observe in detail the three areas of emphasis of the study. For this purpose, four categories and their subcategories as related to the use of socio-dramatic play in teaching learning process were drawn up. The categories for the pupils are.

1. Pupil Volunteer
2. Pupil Participate
3. Pupil Verbalise
4. Tolerance

For criterion one, the number of pupils who were motivated to want to enact in a given situation was recorded. The second criterion was based on the number of pupils who actually participated in enacting their chosen roles. The third criterion, that is, the pupils' verbalisation of his activities was based on their ability to communicate with the other members of the playing group. Finally, the ability of the children to get along smoothly with other children and be less disruptive in the play session was also rated. The categories for the teachers are:

1. Role definition
2. Play participation
3. Motivation
4. Verbal cues

For criterion one, the ability of the teacher to name, describe and discuss the situation was recorded. The second criterion was based on the teacher's actually picking a role and enact it. The third criterion relates to the teacher's ability to make pupils participate successfully in their chosen role. The fourth criterion was based on teacher questioning and talks about the activity.

Tallies were used for the presence or absence of these categories. The observation was first carried out in two reputable nursery schools.

Four nursery classes were used. This was to try out the recording technique and evaluate the reliability of the observation instrument. The trained observers simultaneously observed the classes. They all recorded their observation according to the guide that:

- i. each observer should concentrate on the ten assigned pupils,
- ii. all observers must observe each class simultaneously,
- iii. each observer must be present in the class for twenty-five minutes,
- iv. all tallies should indicate the observed categories within the twenty-five minutes,
- v. focus should be on the pupil's and teachers' activities in the following:

TABLE 3 : RATING OF TEACHER'S QUALITY IN SOCIO-DRAMATIC PLAY

[illegible]

[illegible]

Coding was done from the view point of the researcher paying attention to each of the four categories. For both teachers and pupils. The result of the pilot showed $r = 0.68$. The sessions of demonstration in the schools other than those earmarked for the actual study helped the researcher in further evaluating the categories.

3.6.3. Test

Since the study intends to examine the performance of the pupils in solving numerical and verbal problems after exposure to socio-dramatic play technique, a test in counting, classification and picture description of activities was constructed by the researcher (see Appendix C). The content of the test was first evaluated by the pre-primary school student-teachers of the Faculty. Two mothers of pre-primary school children, four pre-primary school regular teachers and a Head of a pre-primary school were also asked to evaluate the content. They made useful suggestions which enabled the researcher to make necessary modifications. The modified form was evaluated by some lecturers in the Faculty. The modified form was pilot tested on 120 pupils from two schools. The reliability was 0.71. The final form was administered to the target population at the commencement of the study. The test consisted of three sections with a total of twenty-five items. In the first section, Appendix C1 drawings of five edible foods (rice, yam, banana, orange and bread) were shuffled drawings of hat, kettle, book, chair and dish. The children were asked to paint only those things that can be eaten. The objects were not labelled. In this section (see Appendix C2) also five

drawings of things that belong to the hospital, doctor, nurse, injection, stethoscope and thermometer were shuffled with drawings of cow, banana, tree, pot and a farmer. The pupils were required to circle the things that belong to the hospital.

In section 2 of the test (see Appendix C3) the pupils were required to match objects already drawn with numbers. The section C4 of the test also required them to count and write the numbers of objects counted. In Appendix C5, they were to draw eight balls. Finally in the third section (see Appendix C6) some of the activities engaged in by the pupils during the class activities were drawn. They were requested to say two sentences on each of the five drawings of these activities. The test-retest method was used in ascertaining the reliability of the test. The item analysis of the test is presented in Table 5.

TABLE 5: ITEM ANALYSIS OF THE TWENTY-FIVE TEST ITEMS

Item	Item Difficulty	Item Discrimination
1	80	0.40
2	67	0.55
3	72	0.55
4	77	0.35
5	67	0.55
6	72	0.45
7	60	0.60
8	57	0.65
9	55	0.70
10	62	0.55
11	65	0.50
12	65	0.40

13	60	0.40
14	60	0.40
15	57	0.45
16	52	0.55
17	57	0.35
18	52	0.45
19	57	0.35
20	45	0.30
21	40	0.40
22	40	0.20
23	37	0.25
24	35	0.10
25	62	0.55

3.7. Training Session

It was realised that adult intervention was inevitable in carrying out this study, the researcher therefore involved adults who had been previously taught the technique of socio-dramatic play. These adults were the pre-school student-teachers in the Faculty of Education, University of Lagos. This group of students have at least five years of teaching experience. They are being trained as teachers of pre-school children. For this reason, they seemed best suited for the study and they were therefore trained and used for the study.

3.7.1. Training the student/teachers

Training the student-teachers in the technique of socio-dramatic play involved sessions of discussions, explanations and demonstrations. The play themes were extensively discussed. Demonstrations were carried

out in pre-school situations followed by discussion until the researcher was satisfied that the teachers understood how to work within the experimental frame-work. This was assessed from the point of view of the researcher ensuring that the teachers discussed themes, situations, actions and characters and also motivated the pupils to enact their understanding of the situations. For this purpose, one day per week was spent in two pre-primary schools other than those earmarked for the actual study. In these schools, demonstrations were held in four classes, followed by two-hour weekly meeting for eight weeks. Themes that the researcher focussed on were hunger, illness and shopping. At the meetings an outline of the specific problems in relation to the ability of the children to classify, describe and count was done. The same themes and tasks were given in all the schools so as to ensure uniformity of measurement. Choice of the themes was guided by familiarity of pupils' experience and the need to create roles for both sexes. Teacher's intervention was based on specific play situation created by the pupils. The make-believe enactment of the pupils served as cue for the teacher's own response.

3.8. Scoring

In scoring the questionnaire, the researcher assigned the following weight to the favourable items:

<u>Strongly Agree</u>	<u>Agree</u>	<u>Undecided</u>	<u>Disagree</u>	<u>Strong Disagree</u>
5	4	3	2	1

The ten unfavourable items are scored against the favourable items as follows:

<u>Strongly Agree</u>	<u>Agree</u>	<u>Undecided</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
1	2	3	4	5

A subject who strongly agrees with all the ten favourable items is expected to strongly disagree with the unfavourable items. Therefore a subject eliciting the most favourable attitude will score a maximum of 60 points while the strongest disagreement indicating the most unfavourable attitude will score 20 points.

3.8.1. Observation

This consisted of four categories with their sub-categories for both teachers and the pupils. (see Appendix B) The observation of the teacher's was in respect of:

Teacher defines roles	...	2 points
Teacher motivates activities	...	2 points
Teacher participates in activities	...	2 points
Teacher gives verbal cues	...	<u>2 points</u>
Total	...	<u>8 points</u>

The observation of the pupils was coded in respect of:

Pupil volunteers to enact	...	2 points
Pupil performs action	...	2 points
Pupil verbalises action	...	2 points
Makes believe in action	...	2 points
Tolerance in play	...	<u>2 points</u>
Total		<u>10 points</u>

3.8. ² Test (Appendix C)

(a) Classifying:

Things that are edible	...	5 points
Things that belong to the hospital.		<u>5 points</u>
		<u>10 points</u>

(b) Counting:

Matching number with objects	...	4 points
Counting and writing numerals	...	<u>4 points</u>
Building sets of objects	...	<u>2 points</u>
		<u>10 points</u>

(c) Picture description of activity

Cooking	...	2 points
Sweeping	...	2 points
Carrying	...	2 points
Selling	...	2 points
Eating	...	<u>2 points</u>
		<u>10 points</u>

3.9. Teaching Procedure

After the pre-test administration in both experimental and control classes the teachers set up in each classroom three play corners-market, home and hospital only in the experimental classes. The teachers through suggestions and questions based on the materials in the corners developed the themes of hunger, illness and shopping. There were extensive use of materials - kitchen utensil, household items, tins of milk, butter, sandines, parkets of Omo, chocolate plastic bottles etc and props to develop the themes. All lessons

were taught in the experimental group through the use of the corners. Each of the experimental classes was divided into three groups that rotated round the learning corners. This enabled the pupils take part in the activities in each group. The essential feature of the classroom was to make it home-like and provide relevant experience for pupils so that they can relate to outside school experiences.

3.9.1. Description of Play Themes

The same play themes were used in all the experimental classes. They centred around social problems. The children's basic task was to provide food for themselves as well as to take care of the sick. The themes included the roles of the various members of the family and professions. Hence, home, market and hospital were chosen for the following reasons.

3.9.2. The Home

Every child comes from a home. Children are keen observers of all that goes on in the home especially when such activities directly affect them. Consequently, familiarity with the home and the need to make use of pupils' relevant experiences is the guide for selecting the home.

3.9.3: The Shop

The same reason as for the home has guided the researcher in choosing this theme. Shops and markets are the commonest sights in Nigeria. They exist in all the nooks and corners of the big cities. Recently, there has been great concern for the spurious development

of markets in unauthorised places, road sides and on the motor ways. Children are very often sent to buy from both the authorised and unauthorised market, stalls and kiosk.

3.9.4. Hospital

Even though free health service is not nation-wide, the state in which this study took place was operating a scheme of free medical services to all its inhabitants. Health centres, government hospitals and private hospitals abound in the state. Very many adults and children patronised these hospitals and for various ailments. There has since been a modification of the health scheme.

However, regardless of the pupils' experience of the market, and hospital, the researcher organised trips to these two places. The first place of visit was the market. Prior to the visit, the researcher met with leader of the market women and took permission for the children to touch articles and price them freely without the women taking offence. The teachers had earlier cut out paper money and provided bottle tops as coins. During the visit, the children were organised into four groups covering the following stalls:

- i. Stalls for gari, rice, yams, flour and beans
- ii. Stall for vegetable
- iii. Stall for tuber yams
- iv. Provision stall

This made for orderliness and also prevented the children from wandering off. The groups rotated the four different stalls. They asked questions from the women. They priced food items freely.

Both the experimental and the control groups were taken on the visit. This was based on the expert advice that leaving out the control group from the visits would deprive them of vital information and consequently affect the result obtained. The markets chosen were those nearest to each school. The children were asked to bring from home samples of, as well as the pictures of the food items they saw in the market. The experimental group added these to their store in the corners while the control classes identified the food and their teachers kept them away. In the market corner were yams, gari, plantain, rice, beans, banana, fruits, empty tinned food etc. Various activities involving moulding, painting, drawing, arranging and sorting were engaged in. This lasted for two days. On the third day, there was a visit to the hospital nearest to the school. There, the children were taken round the various places - the doctor's room where there was a demonstration of how patients are examined, the waiting room, pharmacy department, theatre and the injection room.

In the experimental classes there were discussions and activities for the children. The hospital corner has doctor's kit, cotton wool, plaster, bandage etc.

The pupils were asked to identify the various things in the home so as to set up the home corner which comprised of plates, pot, cups, spoons, bowls, bags, shoes, dresses etc.

The teacher started off socio-dramatic play by asking for the various uses of the objects in the corners. She then asked pupils

to show their reactions when they are hungry. This led her to tell the story of a family in a situation where the parents were not at home. The children returned from school and they were hungry. There was nothing for them to eat at home. They found money on the table and discussed what to buy with the money. This set them the first task of providing food by themselves. Where were they to get food? How? Which food? How soon? Where could the parents have gone and for what? Before the children could solve problems, one of them became ill. What were they to do? In solving their problems, they had to enact the various roles while making use of the corners set up in the classroom. All available resources were used along with teacher's guidance in the form of questions and suggestions but only as the play situation called for them.

For example, teacher could guide a child by saying:-

- (a) If you don't have food at home, where do you go to get it?
- (b) With what can Sade buy yam from the market?
- (c) What do you think Bola needs if she is a doctor?
- (d) If you are hungry and food is not ready, show me how you feel.
- (e) How are you going to test your patient, Kunle?
Show me.

These were suggestion to pupils' enactment to aid the use of props and play development. There were extensive use of make-believe with respect to objects and situations. Basically there were never more

than fourteen pupils in a group. What the teacher did was tell the story and let the children expand and supply the dialogue in each group. The teacher then moved round the groups, picked up a role and enact it, or suggest to pupils additional props, pictures of some objects.

The entire classroom was used for the corners so that all the chairs and tables were either moved to the back or used as props. The pupils were led to identify food items, count and talk about their activities. In all other subjects the corners were used. The children were asked to match letters to objects draw objects, paint them, and say rhymes connected with various actions.

3.9.5. Analysis of Data:

The data obtained for the study were analysed by the t-test and analysis of covariance.

CHAPTER FOUR

4.0

PRESENTATION OF RESULTS4.1 Introduction

In view of the desirability of pre-school education and the consequent need to ensure that appropriate teaching techniques are employed to teach the children at this level, this research sets out to examine the use of socio-dramatic play technique on the numerical and verbal problem-solving abilities of nursery school children. Accordingly, the following hypotheses have been formulated:

1. There is no difference in the verbal problem-solving abilities of nursery school pupils taught by the technique of socio-dramatic play and those taught by the conventional method.
2. There is no difference in the numerical problem solving abilities of nursery school pupils taught by the technique of socio-dramatic play and those taught by the conventional method.
3. There is no difference in the problem-solving abilities of nursery school pupils taught by the technique of socio-dramatic play and those taught by the conventional method.

4. The use of socio-dramatic play technique will not generate any greater interest in learning among nursery school pupils than the use of the conventional method.
5. The effect of the use of socio-dramatic play technique will not be related to the quality of teachers.

In order to examine these stated hypotheses, three research tools were designed and used. These were the test of numerical and verbal problem-solving, questionnaire and observation of classroom play involvement of pupils and the teachers. This chapter therefore presents the results of the statistical analysis of the data obtained from the research tools on the research population as they relate to the stated hypotheses. Relevant conclusions are drawn on the basis of acceptance or rejection of the hypotheses. Graphical illustrations are used to further clarify data shown in Tables.

The chapter is divided into:

- i. results of the Performance of pupils in verbal problem-solving test
- ii. results of the Performance of pupils in numerical problem-solving test
- iii. results of the Performance of pupils in problem-solving test.
- iv. results of observation of classroom play involvement of the pupils,
- v. results of the effect of teachers' involvement in socio-dramatic play technique.

4.2 Results of the Performance of Pupils in Verbal Problem-solving Test

One of the concerns of the research was to examine whether the use of socio-dramatic play technique will facilitate the verbal problem-solving abilities of the nursery school children. To examine this, a test of verbal problem-solving was designed and administered to the experimental and control of nursery school children used. It was hypothesised that there will be no difference in the verbal problem-solving abilities of nursery school pupils taught by the technique of socio-dramatic play and those taught by the conventional teaching method. From the hypothesis, the means of the two groups were not to be significantly different. An analysis of covariance was applied to the data obtained and the result is presented below in Tables 6 and 7.

Table 6: Result of Performance in Verbal Problem-Solving

VAR	GROUP	N. OF CASES	MEAN	SD	T	DF
PRETEST	Control	315	3.3387	2.148	1.88	626
	Experimental	315	3.8413	4.221		
POSTTEST	Control	315	5.2939	1.902	13.00	626
	Experimental	315	7.7333	2.728		

Table 7

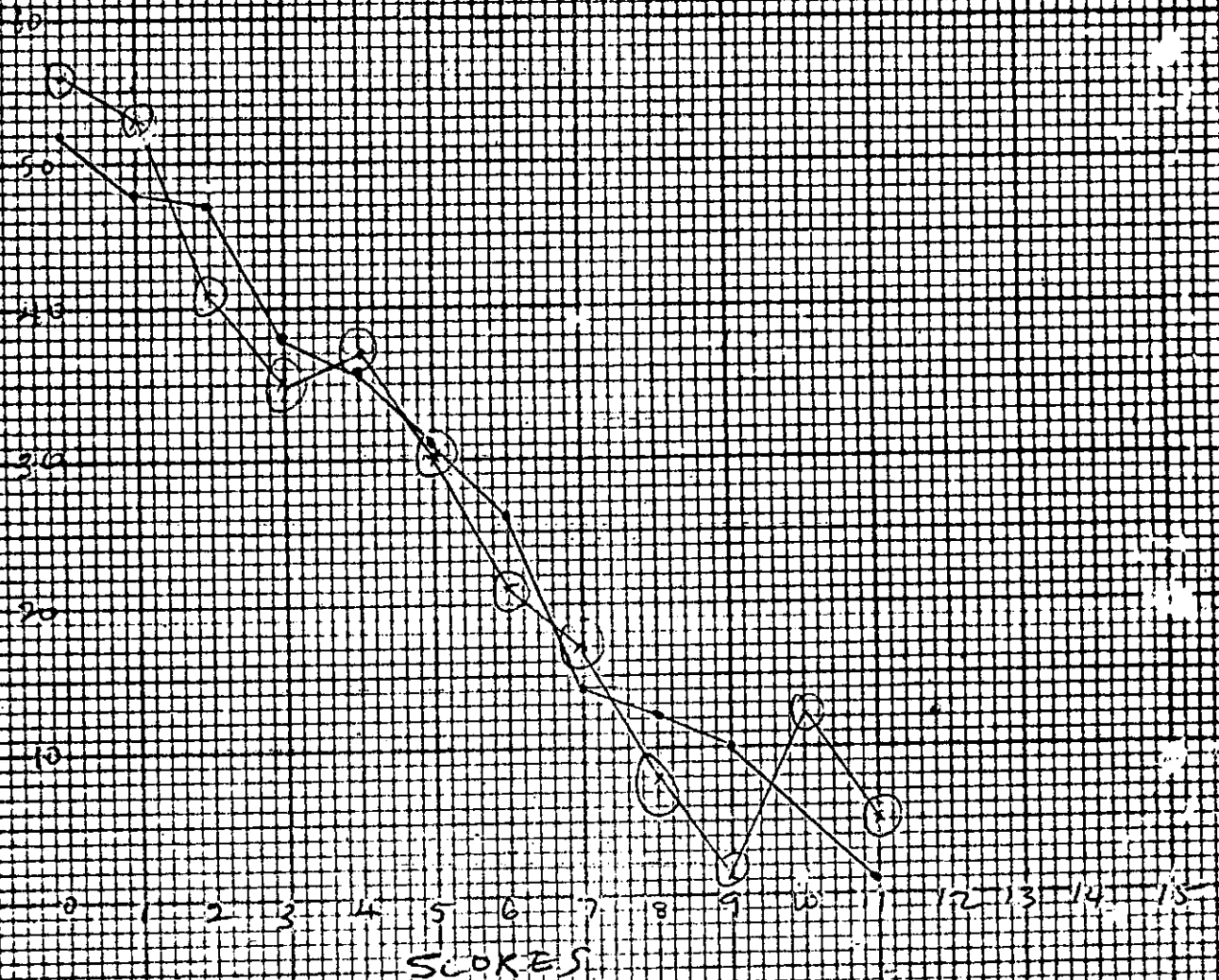
ANALYSIS OF COVARIANCE
ON VERBAL PROBLEM-SOLVING

VAR 05 POST VERBAL
BY VAR 07 METHOD 1, 2
WITH VAR 02 PRE-VERBAL

N = 630

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	STG. OF F
COVARIATES	369.290	1	369.290	72.807	0.000
VAR 02	369.290	1	369.290	72.807	0.000
MAIN EFFECTS	888.527	1	888.527	175.177	0.000
VAR 07	888.527	1	888.527	175.177	0.000
EXPLAINED	1257.817	2	628.998	123.992	0.000
RESIDUAL	3175.183	626	5.972		
TOTAL	4433.000	628	7.059		

The Performance of the Experimental
and Control Groups in Pre-Test Verbal
Problem-Solving



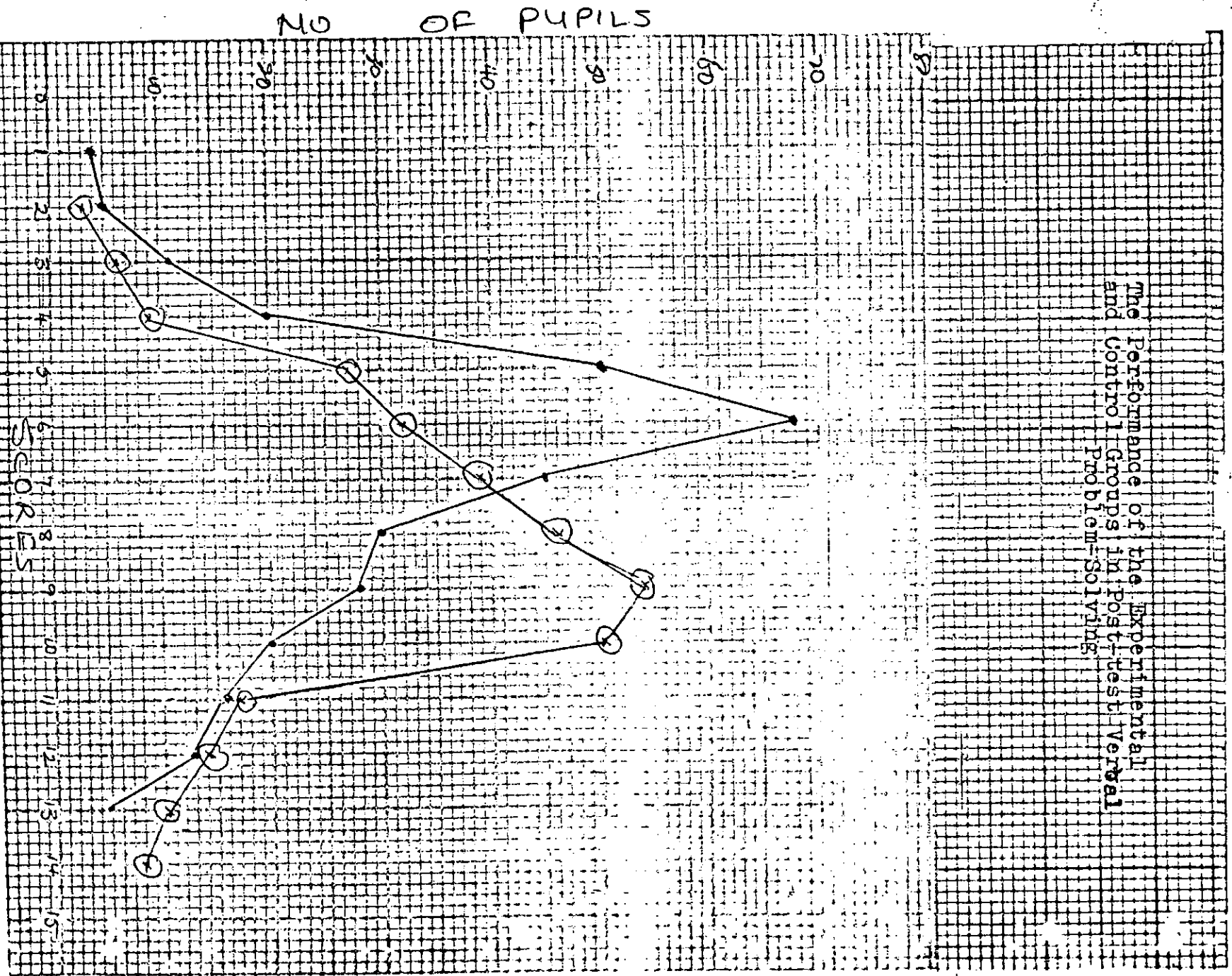
SCORES

FIG 2

○ EXPERIMENTAL

● CONTROL

The Performance of the Experimental and Control Groups in Post-Test Verbal Problem-Solving



○ = EXPERIMENTAL
 . = CONTROL

FIG. 3

The result above shows that the F-ratio obtained for the verbal problem-solving abilities of the pupils is highly significant at 0.05 level. The null hypothesis that states that there is no difference between the verbal problem-solving of the pupils in the two groups is thus rejected. The performance of the pupils is graphically presented in figures II and III below. From the graphs, it can be seen that the pre-test scores of the pupils in verbal problem solving ranged between 0 and II for the control group and the experimental group. As many as 56 pupils scored zero in the experimental and 52 in the control. However, the post test scores showed that the experimental group tends to converge at the middle of the graph with a majority scoring 9 points. As the scores increase, the number of pupils reduces. The control group has similar scores but with the majority scoring below the mean.

4.3 Results of the Performance of Pupils in Numerical problem-solving Ability

Hypothesis two stated that there is no difference in the numerical problem-solving abilities of pupils taught by the socio-dramatic play technique and those taught by the conventional teaching method. To test the hypothesis, a numerical problem-solving test was designed and administered to the experimental and the control groups. (See appendix C2). The test comprised of three sections with five items each. The subjects were pretested on their numerical problem-solving ability before the commencement of the teaching. A four-week treatment in the use of socio-dramatic play technique was applied to the experimental group. The same post-test in numerical problem-solving was administered to the two groups after the teaching. An analysis of covariance was applied to the scores obtained. The result is presented in Tables 8 and 9 below.

Table 8:

Result of Performance in Numerical Problem-Solving

VAR	GROUP	NO. OF CASES	MEAN	SD	T	DF
PRETEST	Control	315	7.3482	1.902	-0.81	626
PRETEST	Experimental	315	7.4889	2.408		
POSTEST	Control	315	8.9585	4.934	-6.72	626
POSTEST	Experimental	315	11.7333	5.399		

TABLE 9

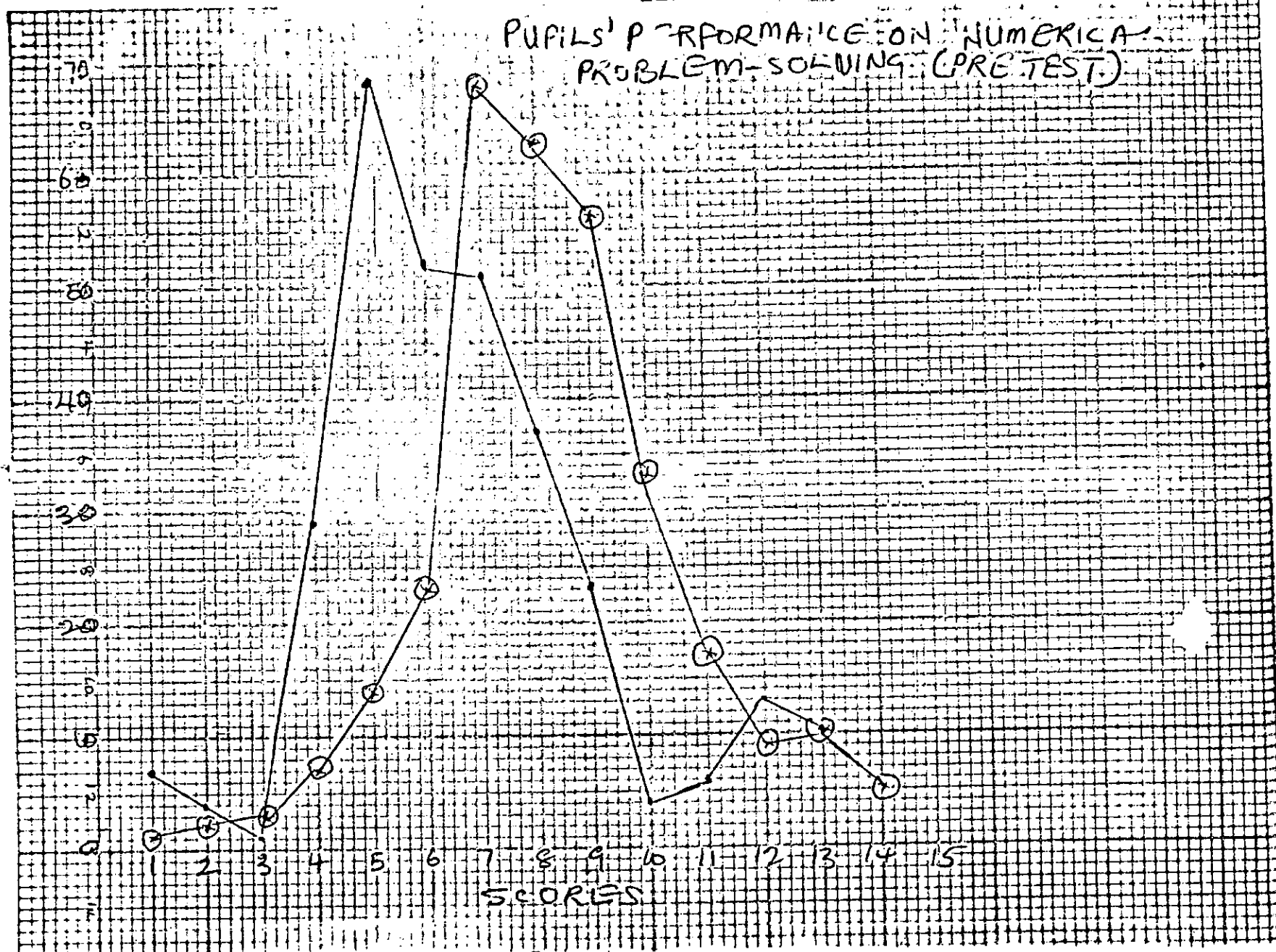
ANALYSIS OF COVARIANCE
ON NUMERICAL PROBLEM-SOLVING

VAR 04 POST NUMERIC
BY VAR 07 METHOD 1, 2
WITH VAR 01 PRE-NUMERIC

N = 630

SOURCE OF VARIATION	SUM OF SQUARES	DE	MEAN SQUARE	F	SIG. OF F.
COVARIATES	341.407	1	341.407	12.975	0.000
VAR 01	341.407	1	341.407	12.975	0.000
MAIN EFFECTS	1210.481	1	1210.481	46.004	0.000
VAR 07	1210.481	1	1210.481	46.004	0.000
EXPLAINED	1551.891	2	775.945	29.490	0.000
RESIDUAL	16471.500	626	26.312		
TOTAL	18023.391	628	26.700		

PUPILS' PERFORMANCE ON NUMERICAL PROBLEM-SOLVING (PRE-TEST)

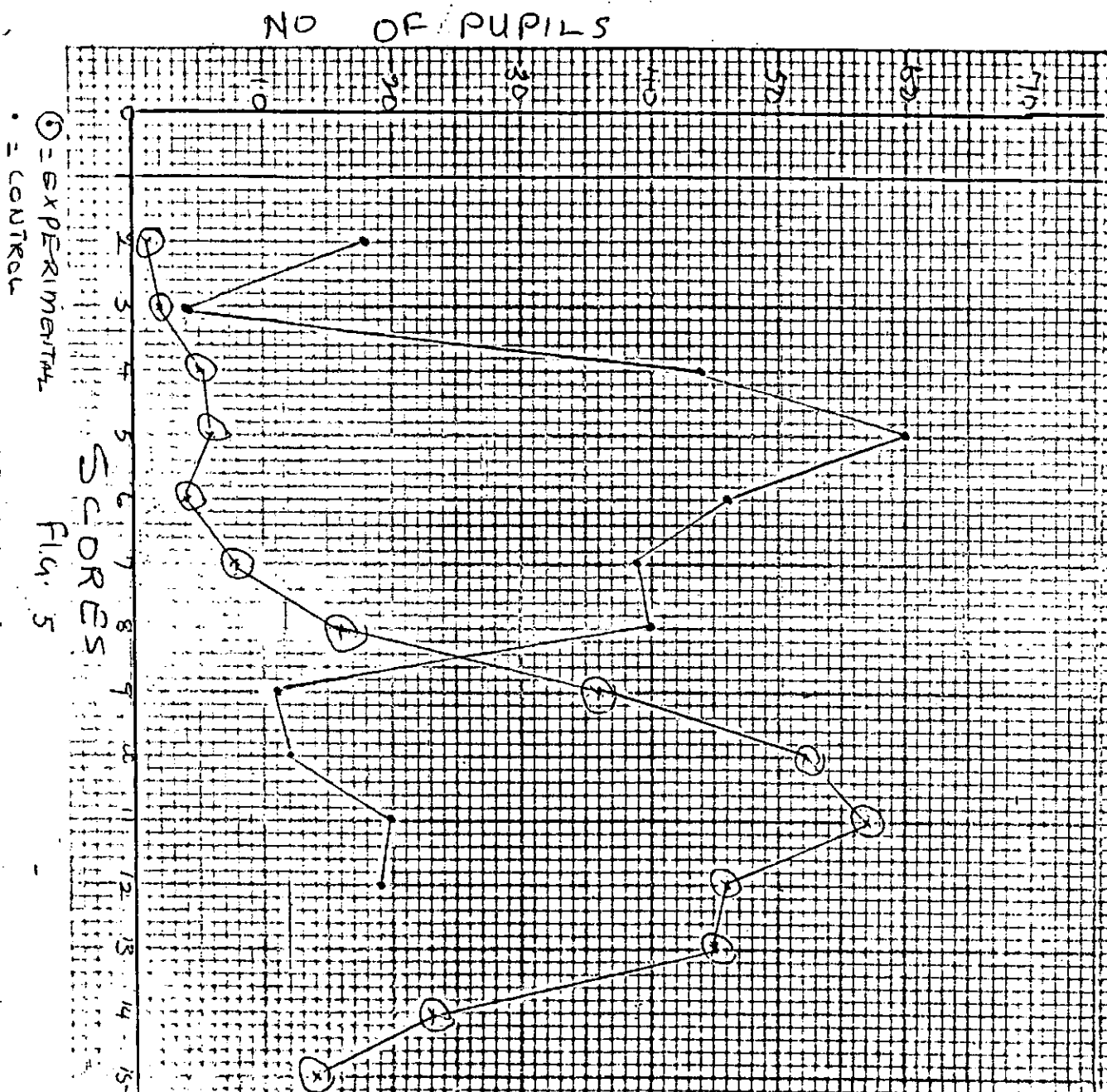


E, P = 0

CON =

FIG. 4

The Performance of the Experimental
and Control Groups in Post-test Numerical
In-Problem-Solving



The result shows that the F-ratio is very significant at 0.05 level. The null hypothesis is rejected. There is thus a difference in the performance of the pupils in numerical problem-solving. To highlight the performance of the pupils in the numerical problem-solving, the graphs in figures IV and V are presented. The range of scores for the control group is 1 - 13 on the pretest and the post test is also 1 - 13 on the numerical problem-solving. The experimental group is 1 - 14 on the pre-test and 2 to 15 on the post-test.

4.4 Results of the Performance of the Pupils in Problem-Solving

It was stated in hypothesis three that there will be no difference in the problem-solving abilities of pupils taught by the technique of socio-dramatic play technique and those taught by the conventional teaching method. To test the hypothesis, the overall scores of the pupils in the test designed and administered on the numerical and verbal problem-solving were examined. The test consisted of counting, matching, writing, classifying and verbal description of activities. The scores obtained on the tests were analysed and presented in Table 10 and 11 below.

Table 10:

Result of Performance in Problem-Solving

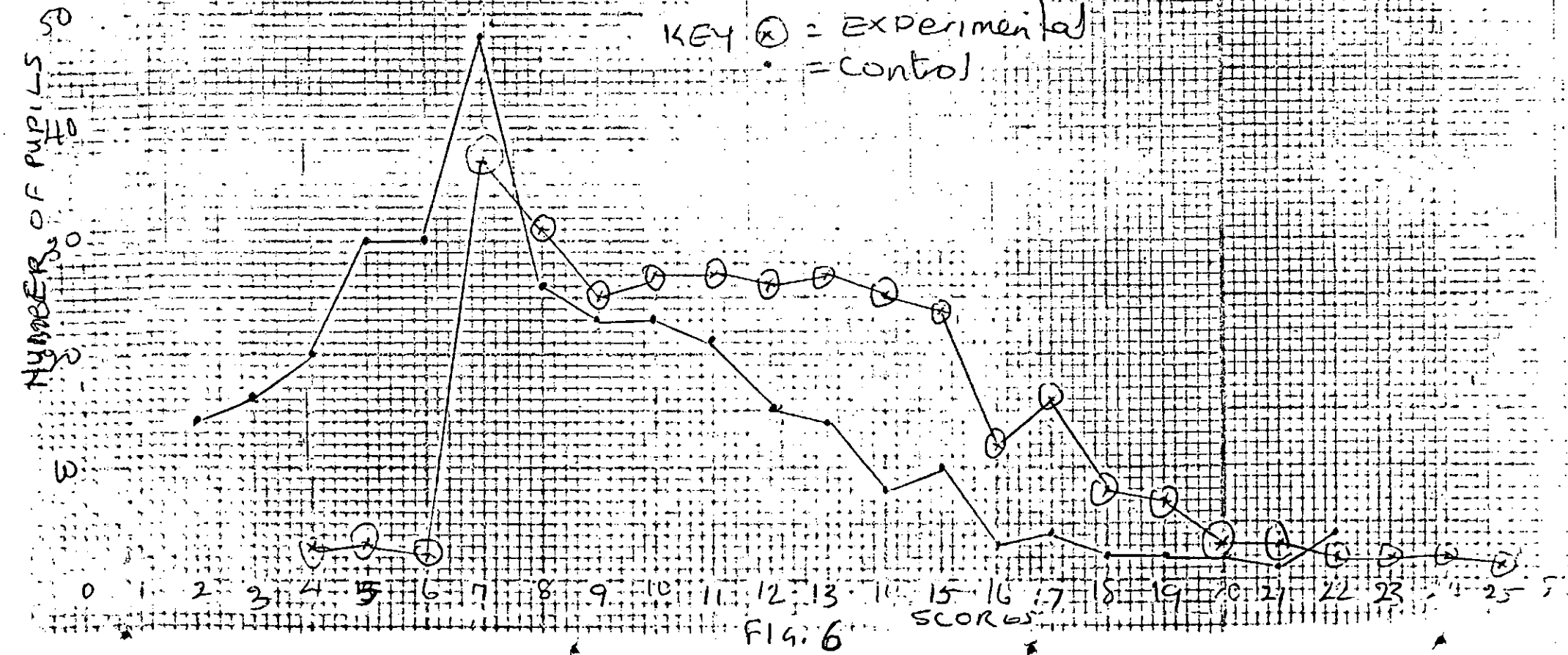
VAR	GROUP	NO. OF CASES	MEAN	SD	T	DF
PRETEST	Control	315	11.7252	3.192	-1.31	626
	Experimental	315	11.1079	4.070		
POST- TEST	Control	315	13.8434	2.915	16.70	626
	Experimental	315	19.0921	4.743		

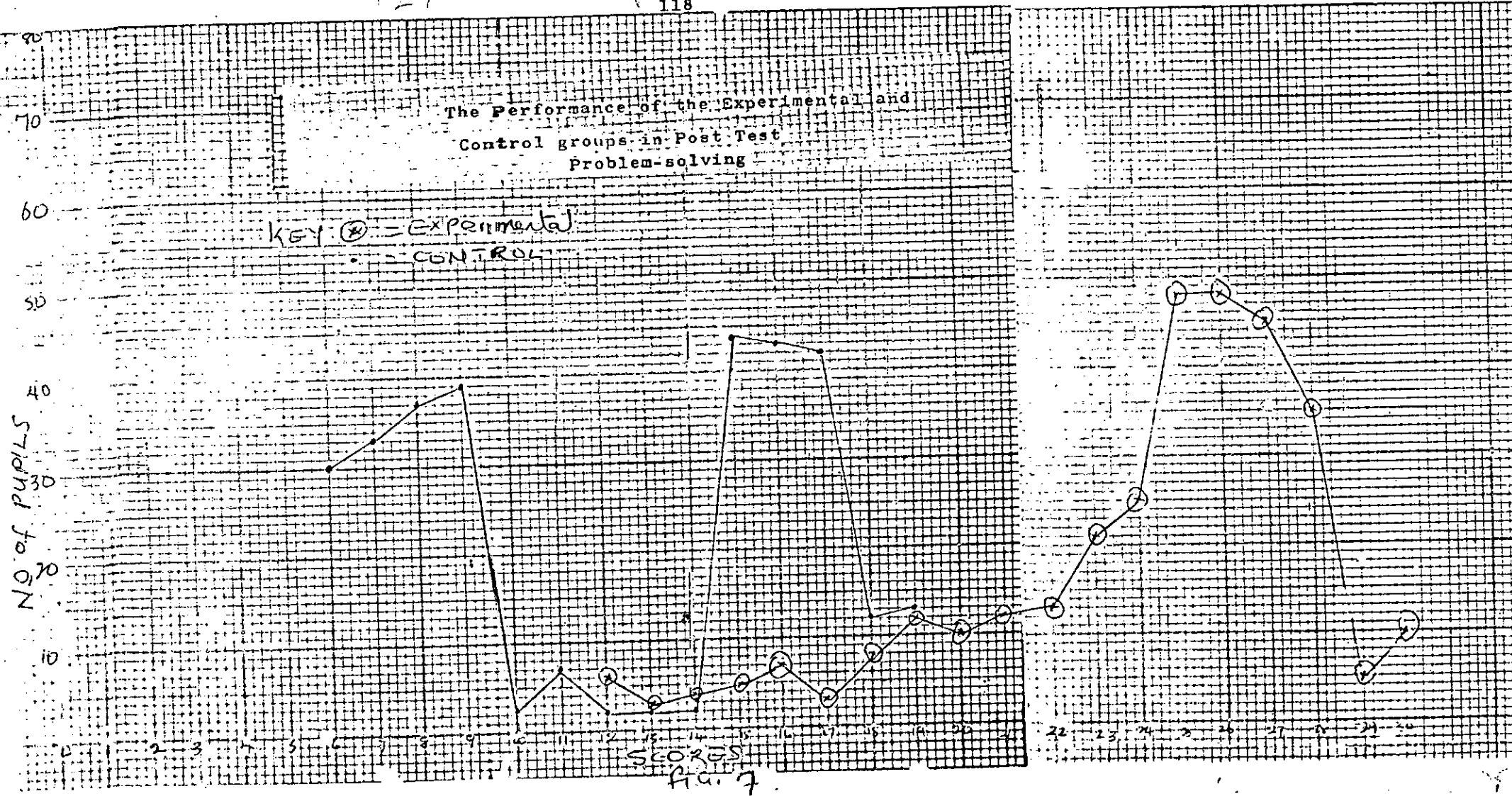
TABLE 11:

ANALYSIS OF COVARIANCE ON
PROBLEM-SOLVING

SOURCE OF VARIATION	VAR 06		TOTAL POST TEST		F	SIG. OF F.
	BY VAR 07	METHOD 1, 2	WITH VAR 03	TOTAL PRETEST		
COVARIATES VAR 03	2645.756		1	2645.756	222.656	0.000
	2645.756		1	2645.756	222.656	0.000
MAIN EFFECTS VAR 07	4134.309		1	4134.309	347.926	0.000
	4134.313		1	4134.313	347.926	0.000
EXPLAINED	6780.066		2	3390.033	285.291	0.000
RESIDUAL	7438.582		626	11.833		
TOTAL	14218.648		628	22.641		

The Performance of the Experimental
and Control Groups in Combined Pre-
Test in Problem-Solving.





From the result shown in Table 15 it can be seen that the F-ratio was also significant at $P < 0.05$ level. The null hypothesis is also rejected. There is thus a difference in the problem-solving abilities of the pupils taught by the socio-dramatic play technique and those taught by the conventional method. The pupils' scores are presented in the graphs shown in figures V/ and V//. It is seen that the two groups of pupils performed differently in the problem-solving tests. The experimental group tends towards higher scores on the post test than the control group. This confirms that the experimental performed better in the problem-solving test than the control group.

4.5. Results of Observation of Classroom Involvement in Play

Apart from a measure of the pupils' problem-solving abilities, an observation schedule designed, examined the extent and the intensity of pupils' involvement in the classroom play activities. (See appendix A) It was hypothesised that the use of socio-dramatic play technique will not generate any greater interest in learning than the use of the conventional method. A rating scale for the observation of interest of the pupils in the classroom activities was designed and used to collect data. The observation focuses on the child's ability to volunteer to participate, perform, the role correctly, verbalise, make believe, and co-operate with the others in his group. The result of the observation is presented in Table 12 below.

TABLE 12 . t-test OF OBSERVATION OF PUPILS INVOLVEMENT IN THE CLASSROOM ACTIVITIES

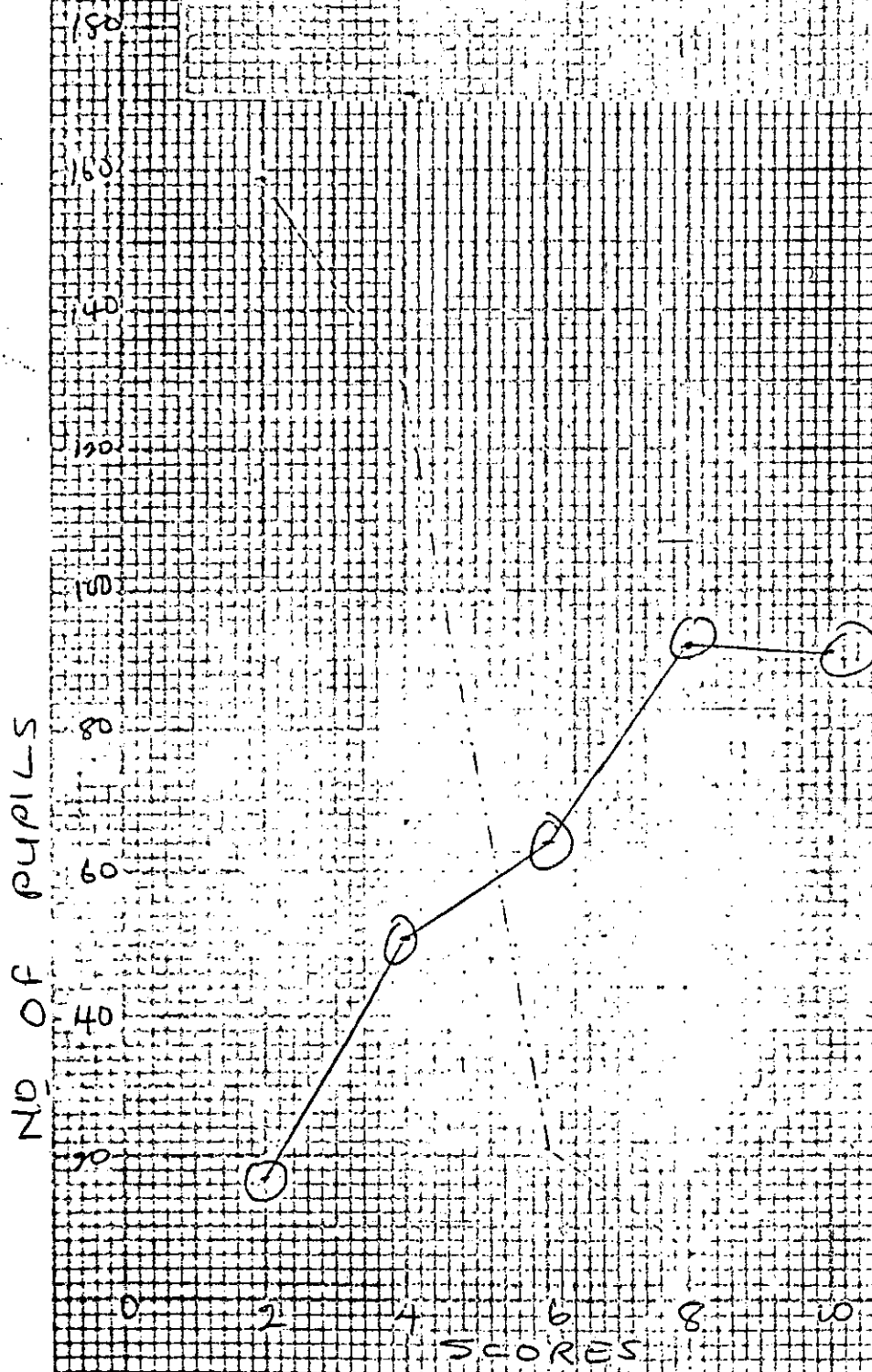
N-630

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
SCORE						
EXP GROUP 1	315	7.1524	2.441	25.97	628	0.000
CON GROUP 2	315	3.1206	1.279			

From the result above, the t -value is very significant. Therefore the null hypothesis is also rejected. The use of socio-dramatic play technique has generated greater interest in learning in the children of the experimental group than the children in the control group. The mean of the experimental group is 7.15 while the control is 3.12. The experimental has a standard deviation of 2.441. - The control has a standard deviation of 1.28.

The ratings of the two groups are further presented in graph shown in figure Vlll.

Pupils' Involvement in Activities



○ = EXPERIMENTAL
• = CONTROL

Fig. 8

4.6. Result of the Quality of Teacher Assistance in Socio-Dramatic Play

It was the expectation of this study that the extent of pupils' persistence in the classroom play activities and the amount of interest thereby generated towards their classroom learning will be dependent on the quality of the teachers' assistance. The teacher assistance of the teacher is a measure of the teacher's role definition, participation in pupils' activities, provision of motivation for role sustenance and cues, suggestions and comments that enhance pupils' enactment. The teachers in the experimental group had training sessions in the technique of socio-dramatic play and were able to work within the experimental framework. The teachers in the control group had no training in the use of socio-dramatic play technique.

It was hypothesised that the effect of the use of socio-dramatic play technique will not be related to the quality of the technique used by the teachers. To test the hypothesis, an observation schedule was designed to focus on the listed variables of role definition, motivation, participation and cueing. The teachers in both the control and experimental classes were observed on these variables. The result of the observation is presented below in Table 13.

TABLE 13.

t-test OF OBSERVATION OF TEACHER QUALITY

N=20

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
VAR 01	EXPERIMENTAL	RATING				
		7.6000	1.536			
	20			13.27	18	0.000
		2.7000	0.979			
VAR 02	CONTROL	RATING				

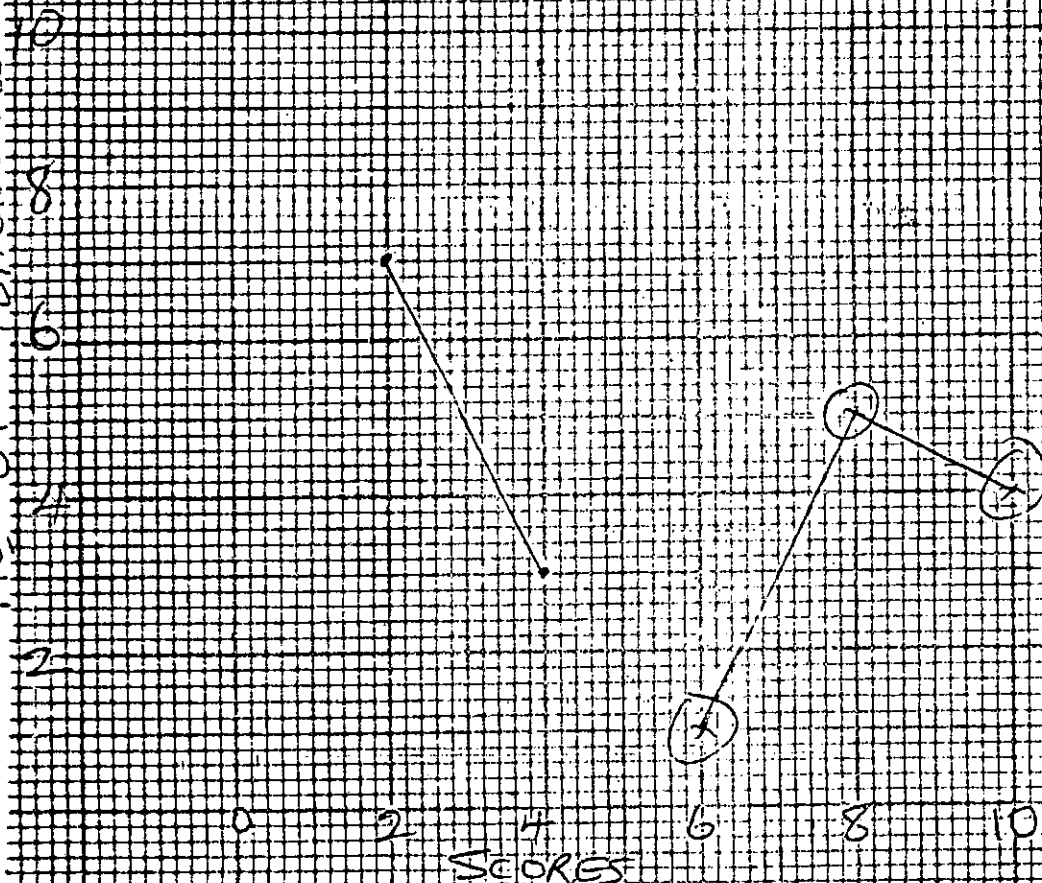
Teachers' Involvement in Activities

NO. OF TEACHERS

SCORES

⊙ EXPERIMENTAL
- - - CONTROL

Fig 9



The result shows that the mean score of the experimental teachers is 7.6 with a standard deviation of 1.54. The control group has a mean of 2.7 and a deviation of 0.98. The t-value obtained for a test of significance between the means of the two groups was 13.27. The teachers in the experimental group who used the technique of socio-dramatic play were more effective than teachers in the control group.

Besides observing the performance of the teachers in the use of socio-dramatic play technique, a questionnaire was also designed to obtain information as regards their opinion on:

- (a) the use of play and materials in the nursery school classrooms and
- (b) the function of a teacher during a play period.

The questionnaire was administered to the teachers in both the experimental and control classes before teaching commenced. The teachers were then required to teach during which their performance in the use of socio-dramatic play was observed.

The same questionnaire was again administered to the teachers in both groups after the teaching session. The result is presented in Table 14.

TABLE 14:

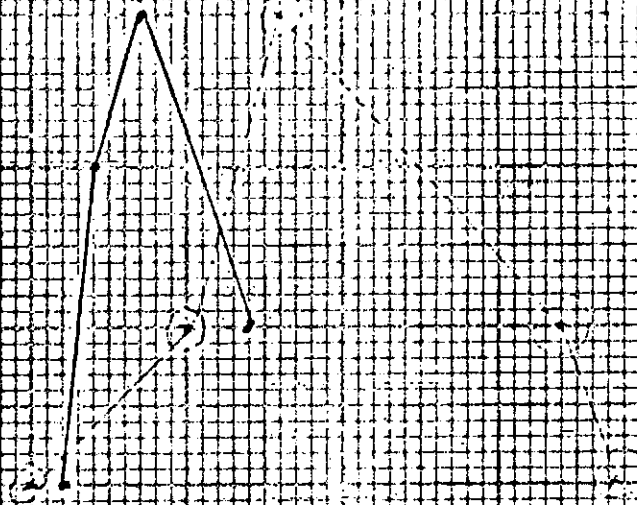
t-test OF QUESTIONNAIRE ON TEACHER. ATTITUDE TO PLAY

N=20

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
VAR 01	TEACHERS:	ATT EXPERIMENTAL				
		38.9000	11.938			
	20			4.51	18	0.000
		27.3500	2.183			
VAR 02	TRS:	ATTI CONTROL				

Teachers' Response to the Questionnaire

NO. OF TEACHERS



① = EXPERIMENTAL
• = CONTROL

FIG. 6

Table 14 showed that the mean score of the questionnaire of the teachers in the experimental group was 38.9 while the standard deviation was 11.94. The control group teachers had a mean score of 27.35 and a standard deviation of 2.18 in the questionnaire. The t-value for the test of significance between the means was 4.51. This was found to be significant at 0.05 level.

CHAPTER FIVE

5.0

DISCUSSION5.1. Introduction

One of the major focusses of this study was to examine whether the use of socio-dramatic play technique will facilitate the verbal and numerical problem-solving abilities of nursery school pupils.

The aim of the study was to:

- (i) determine the instructional value of socio-dramatic play technique in problem-solving;
- (ii) identify one of the ways nursery school teachers can meaningfully utilize pupils' relevant experiences;
- (iii) enhance the use of socio-dramatic play as an instructional tool.

For this purpose, an attitudinal questionnaire was administered to the teachers who participated in the study. The pupils were observed in order to ascertain their extent of participation in the classroom activities. The scores arising from these two tools were analysed by the t-test of significance. A test in verbal and numerical skills consisting of counting, classifying and verbal description of activities was administered to the pupils. The scores obtained were analysed by the analysis of covariance.

Chapter four of this study presented the findings of the study in five parts. The presentation followed the hypotheses stated in relation to the use of socio-dramatic play technique on verbal and numerical problem-solving abilities of the pupils.

In the chapter therefore, the results of the analysis of covariance on the scores of verbal problem-solving abilities were presented in Tables and graphs. This was followed by the presentation of the results of the analysis of covariance on numerical problem-solving abilities also in Table and graphs. The next presentation of results was the analysis of covariance of the pupils. Followed by this is the result of the t-test of the observation of the pupils in the classroom. The last presentation of results was the one relating to teacher quality.

5.2. The Findings Of the Study and Their Interpretations.

5.2.1 The Findings on Verbal Problem-solving Abilities.

It was hypothesised that there will be no significant difference in the verbal problem-solving abilities of nursery school pupils taught by the technique of socio-dramatic play and those taught by the conventional teaching method. A test of verbal problem-solving was administered to the pupils. The scores obtained were examined by the analysis of covariance and presented in Table 7. The 'F' ratio obtained was found to be significant at $\alpha = 0.05$. There was thus a significant difference in the verbal problem-solving

CHAPTER FIVE

5.0

DISCUSSION5.1. Introduction

One of the major focusses of this study was to examine whether the use of socio-dramatic play technique will facilitate the verbal and numerical problem-solving abilities of nursery school pupils. The aim of the study was to:

- (i) determine the instructional value of socio-dramatic play technique in problem-solving;
- (ii) identify one of the ways nursery school teachers can meaningfully utilize pupils' relevant experiences;
- (iii) enhance the use of socio-dramatic play as an instructional tool.

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abilities of the pupils taught by the technique of socio-dramatic play and those taught by the conventional method.

The scores were further graphically represented in figures 11 and 11. From the pattern of distribution of the performances of the pupils in both pre and post tests, it was confirmed that there was a significant difference in the verbal performance of the pupils. The experimental group performed much better than the control groups thus, contributing to the significant difference observed. The use of socio-dramatic play technique has therefore contributed significantly to the better performance of the pupils.

The use of socio-dramatic play technique in contrast to the conventional method has provided the children in the experimental group with the opportunity of selecting activities that were of interest to them. As a result of the freedom of choice of these activities, interest was generated and boredom was eliminated as much as possible. The pupils talked about their activities with the teacher and the other pupils in the groups. They listened to one another and they described and compared these varied activities. The materials provided enhanced their use of symbolic representations of their experiences in role play and action interpretations.

Essentially therefore, the socio-dramatic play technique has provided an appropriate feed-back from the various objects, the people and the structure that the children had built. The children in the socio-dramatic play setting did not experience any difficulty in understanding verbal messages because such messages directly - referred to on-going concrete simple and relevant actions.

An initial discussion of the play situation with the pupils and the readiness of their teacher to pick up a role, had generated the much needed confidence in the pupils to participate in the class. Consequently, the pupils in the socio-dramatic play group understood the situation and they readily identified with it. They verbalised their understanding with ease and clarity. This was in agreement with Polya (1957) and Kalejaiye (1980) that the first step in solving a problem is an initial discussion of the problem with the pupils so as to stimulate their understanding. It is the understanding of such a problem that will aid an attempt at a solution.

It is therefore not surprising that the socio-dramatic play group showed better performance in the verbal problem-solving abilities than the conventional group. Elder (1978) had similarly found that the use of socio-dramatic play had enabled nursery school children to pretend well. Vygotsky (1967) had also confirmed that symbolic play was part of the process of liberating the thought and meaning of children. This study has found support in Lovinger's (1974) assertion that children's verbal interactions with each other was responsible for their ability to deal effectively with cognitive tasks.

The finding of this study has found support in Pellergrini's (1980) finding of a very strong relationship between Kindergarten play and achievement in pre-reading, language and writing. Similarly Saltz and Johnson (1977), Rosen (1974), Yawkey (1979) and Smilansky (1968) had also confirmed that the use of socio-dramatic play was very effective in facilitating problem-solving and in enhancing more accurate perceptual role taking.

The above studies have showed positive results for the use of socio-dramatic play technique on the learning of nursery school children. However, Fink (1976) had noted that even though children taught through the technique of socio-dramatic play often showed marked improvement in their cognitive and other aspects of development, such children he regretted do not seem to influence their peers who were untaught, regardless of their proximity.

This observation has posed a challenge to early childhood educators and advocates of the play-way method in particular. The implication of this challenge is the need to base the nursery school method on the premise that the child is essentially a creative and not a passive receptor of information and facts. He should be made to go beyond the information given. This is only possible through his play activities which demand from him the use of his knowledge of people and situation. Teachers therefore need to be more concerned about providing an environment that offers opportunity for plays that are relevant to the life experience of the children in their care.

The sort of materials provided in the play environment can only promote continuity of learning when such materials truly portray and identify with the life of the child. When the materials are not too dissimilar or too sophisticated for the children to use, they would be able to replicate their school experiences at their out of school play activities. It is through this that they can influence their untaught peers.

5.2.2. The Findings on Numerical Problem-solving Abilities

Hypothesis two stated that there will be no significant difference in the numerical problem-solving abilities of nursery school pupils taught by the use of socio-dramatic play technique and those taught by the conventional teaching method. A test of numerical problem-solving was administered to the pupils. The scores obtained were analysed, using the analysis of covariance. The 'F' ratio obtained from the analysis was significant at 0.05 level. There was therefore a significant difference in the numerical problem-solving abilities of the pupils. The graphs in figures 111 and 1V also confirmed that the experimental group performed better than the control group. Hypothesis two is thus rejected.

The study made it clear that the very nature of socio-dramatic plays is capable of generating interest in the pupils. They actively participated in the counting of such objects as cups, plates, spoons, chairs, yams, bottles, tins, packets, etc. They were in fact required

to set up these materials as and when needed. They also matched, sorted, grouped and counted the various objects displayed in the learning corners that the socio-dramatic play technique required. The pupils actively participated in the various activities in the classroom. They were not coerced into participating in the activities. Their willingness to participate was reinforced by the teacher's assistance and thus they were ready to apply their skills to problems given. They went beyond the information received from the teacher.

This confirms Dwyer and Elligett's (1970) assertion that in order to meet the needs of young children and lead them into the world of analytic and formal mathematics, the teacher must always begin with the children's own intuitive learning processes. It has also found support in Unicef (1974) that the aim of teaching or introducing mathematics to the very young children is to help them solve real-life problems and thereby make their world meaningful.

Reitz (1979), Jeffers and Lore (1979) affirmed that familiarity with play environment and the materials encourage children's social interaction among one another. Cornelius (1977) had also found that conservation of liquid can be effectively fostered through symbolic play while Wolfgant (1974) had earlier reiterated that play can generate learning possibilities in measuring, categorising, classifying, experimenting and sequencing processes. Bolton and Zammarelli (1974) confirmed that children exposed to play situation used information more effectively than unexposed children.

An important concern for the use of socio-dramatic method is the child's role in the problem. The child is here regarded as been central to the problem. This makes him easily identify with the problem. He is therefore able to imitate, imagine and invent solutions to the identified problem. The feed-back the child receives from the teacher and the other members of the group is enough to provide directions and thus increase the intensity of his participation. In the present study the children were the directors of their own activities once the relevant materials have been provided and strategically arranged for them by the teacher. They had enough time to work through, fumble, make mistakes and correct themselves. The concern was not solely on arriving at the precise solutions but rather on the approach to the problem.

It was in this vein that Rousseau asserted that the child must discover for himself through the exercise of his senses and body. It was also in conformity with Piaget's (1952) injunction that nursery school teachers do not have to transmit all knowledge to the child. The child must be made to do, test, seek count, match, classify and infact actively participate in his learning.

5.2.3. Findings on Problem-solving Abilities.

It was stated in hypothesis three that there will be no significant difference in the problem-solving abilities of pupils taught by the technique of socio-dramatic play and those taught by the conventional teaching method. The result of the t-test of the problem-solving abilities as analysed by the analysis of covariance was presented

on Table 11 The 'F' ratio obtained was significant at 0.05 level. The scores were graphically represented in figures V and VI. From the results it was seen that there was a significant difference in the problem-solving abilities of the pupils.

Since it was the same process that was used for the verbal and numerical problem-solving abilities that produced this outcome, it goes without saying that there should be a significant difference in the problem-solving abilities of the pupils. It is therefore safe to affirm that the use of socio-dramatic play has resulted in the better performance of the pupils in the experimental group than the pupils in the conventional teaching method group.

It was the realisation of the unique importance of play in the learning of young children that most established nursery programmes have in the play over tone. Such programmes include the Bank Street, Nimmicht, High Scope, Olive Harvey to mention but a few. This study has also found support in Frank's (1963) assertion that when children play, their exploration aids the development of concepts, perception, linguistic and intellectual skills. Barnett (1977) viewed young children's play interactions with their environment as a way of making possible the playful practice of sub-routines of behaviour that later come together in useful problem-solving.

Many research studies have been conducted to justify the use of play in the teaching of the young child. Golomb and Cornelius (1977) Sutton and Smith (1971) Smilansky (1968) Fagot (1978) and Stone (1971)

to mention but a few of the researches on play, have concluded that the use of socio-dramatic play technique facilitates effectiveness in problem-solving, leads to more accurate perceptual role taking and enhances increase in intelligence test performance. The present study has therefore confirmed that the use of socio-dramatic play technique on the learning abilities of pre-school children in Nigeria could like-wise be facilitated.

5.2.4. The Findings on the Observation of Pupils' Interest in Learning.

Hypothesis four stated that the use of socio-dramatic play technique will not generate any greater interest in learning than the use of the conventional method. An attitudinal rating scale was designed to assess the extent of the pupils' participation in the classroom activities. The result as analysed by t-test is presented in Table 12.

The experimental group was significantly better than the control group. The study also made it clear in this case that the very nature of the experimental set up which included the ability of the pupils to immitate roles, persist in role immitation, make believe in actions and situations and also communicate with other had motivated the pupils into action. The pupils were able to volunteer, perform, verbalise, make-believe and actively enact their various roles with confidence. As a result of the interest generated in the classroom activities, the pupils spontaneously participated in a friendly manner.

This finding supports Mcloyd (1983) who examined the effects of the structure of play objects on the pretend-play of the pre-school children. He found that the low structured objects in the classroom setting increased the frequency of interactive pretend-play of the children. Smith (1983) had similarly found that children who were exposed to fantasy play engaged in co-operative-play more, played more often in larger sub-groups and were more physically active than did those who received skills training. Udwin (1983) had in similar setting found that there was significant increase in the levels of imaginative play and pro-social behaviour. There was also increase in the measures of divergent thinking, story-telling and decrease in levels of overt aggression.

The learning situation as designed in the present study has enabled the children in the experimental group to discover things for themselves. Goldsworthy (1971) Jennifer (1974), Cass (1971) Fink (1984) and Singer and Sherrod (1977) have all indicated in their findings that children exposed to socio-dramatic play technique were more socially competent and more skilled in their activities.

It can therefore be reliably argued that the use of socio-dramatic play technique has generated greater interest in learning among the nursery school pupils than the use of the conventional teaching method.

The children in the experimental group identified the various objects and materials in the play corners. They used these materials in enacting their roles, they volunteered to bring more of the materials from their homes and they arranged them as they desired. Children who

appeared withdrawn at the initial start of the experimental session later joined voluntarily in the activities of the groups. Since the experimental classes were divided into groups that rotated round the centres, every child had the opportunity of enacting a role, describing his role, imitating the role and suggesting more props that would enhance their role perception.

5.2.5. The Findings on the Effect of Teacher Quality on Socio-dramatic Play.

All the teachers who participated in this study had the Teachers' Grade II certificate. They all had at least five years teaching experience. They were all nursery school teachers as at the time of the study. They all received the attitudinal questionnaire and were judged to have scored high in the questionnaire. The only difference in the teachers was the specialised training given to the experimental teachers.

It was stated in hypothesis five that the effect of socio-dramatic play will not be related to the quality of the teachers. To examine the hypothesis, an attitudinal questionnaire was administered to all the teachers who participated in the study. The questionnaire was designed to investigate the attitude of the teachers to the use of play as a teaching method in the nursery classes. The result of the t-test used to analyse the scores obtained was presented in Table 13. The result showed that the experimental teachers who were taught

the technique of socio-dramatic play were better in terms of their understanding the value of play, their own function during the play session and effectiveness of the use of play in the learning of the child than the control group teachers. A graphical display of the scores of the teachers in figure VI showed that the experimental teachers had a wider spread than the controlled teachers. This meant that the experimental teachers have come to realise the importance of play and thus have more favourable attitude towards its use in the teaching of nursery school children.

The teachers were also observed and rated in terms of the quality of their involvement in the classroom play activities. The result of the rating is presented in Table 14. The experimental group was also significantly better than the control group in their ability to define roles for the pupils' understanding so as to induce them to action.

Therefore, that there was significant difference in the teacher's attitude as a result of the training received by the experimental teachers in the use of socio-dramatic play technique showed that the effect of the technique is related to the quality of the teachers.

The finding of this study has thus found support in Murray and Scarth (1977) who states that adult's effort to increase the task persistence and positive behaviour can be augmented by the combined application of proximity, verbal reinforcement and prompting procedure.

Alletha (1977) confirmed that children in highly structured and teacher directed classes always engage in less pro-social behaviours. Such children, he asserted are less imaginative and less confident in task persistence. However, they could be more attentive and could conform to classroom routines. This also confirms Smilansky's description of such children as being aimless, lethargic and always afraid to tackle new tasks.

Fagot (1973) earlier identified four broad categories of class teacher behaviours. He had found that the most effective teacher behaviour was one in which the teacher initiates, joins in, makes favourable comments on the child's activities and readily capitalises upon the teachable moments for stressing the development of skills.

This study has therefore showed that as a result of their exposure to socio-dramatic play technique, teachers were able to help their pupils to high academic achievement. This was through their use of language to describe and classify things, count objects and label such objects as well as their actions on the objects. It was also demonstrated that their duty was not to transmit all knowledge but to help the child to construct his own knowledge so as to build in the child initiative, curiosity and confidence.

5.3.

Implications of the Study

The study was carried out in ten nursery schools in Lagos State. As a result of the randomness selection of the sample used in this study, it:

hoped that the findings emanating from it can be generalised to all the schools sharing similar features and characteristics of the ten schools as described in Table 2.

5.3.1. Implications for Nursery Education Curriculum

It was highlighted in the statement of the problem of this study that most nursery schools in Nigeria concentrate heavily on the acquisition of academic skills. It was also pointed out that this was as a result of the need for the schools to justify the parents' expenses on their children's early childhood institutional education. The generality of the Nigerian society therefore expects these institutions to concern themselves with early discipline in formal school subjects. This the society hopes, would help to promote the children's intellectual development. In response to this therefore, the teachers in these schools resort to intensive mental drills and memorisation in their classroom teaching approach. They are unaware of an effective way of maximising the children's learning through play activities. The child/child, child/teacher spontaneous play activities are utilized for structured lessons. The result of this is the children's lack of desire to investigate, explore and utilize their relevant daily play experience meaningfully in their school learning. This situation is very unsatisfactory.

An initial attempt at solving and improving on this situation lies first in an expressly formulated curriculum of nursery education in the country. The present researcher spent a lot of time in trying

to find schools with a uniform type of learning opportunities for this study. This was because there were as many curricula as there were schools. A curriculum guide for nursery school education would provide the nursery school teachers with what they are expected to do precisely with the children in their care. For example in operation in the nursery schools are curricula designed by each school, the Nigerian Educational Research Council (NERC) Guide to Learning and Teaching, the OMEP's Programme of Activities for Early Childhood Education and the recently completed Lagos State curriculum for nursery schools. All these are as varied as the sources that produced them.

Since "it is Government's wish that any existing contradictions, ambiguities and lack of uniformity in educational practice in the different part of the Federation should be removed to ensure an even and orderly development" it becomes imperative that the Federal Ministry of Education should develop a comprehensive programme for Nigerian nursery schools. To ensure uniformity, relevance and standard, these varied curricula currently in operation should be integrated. Such integration should take into consideration the particular needs generated by our particular social, cultural and economic conditions. The 'imported' pre-school run and stocked with expensive and irrelevant toys and equipment are grossly unsatisfactory. It is when such a curriculum is made available to the schools that they can see the inter-relatedness of the various subjects which at the present time are taught separately in the nursery schools.

It is also important that such curriculum present an integrated view of early learning subjects so as to eliminate or reduce the undue

concentration on the academic subjects which have relegated the other aspects of the child's development to the state of total abandonment.

5.3.2. Implications for Teacher Performance.

The findings of this study have shown that the use of socio-dramatic play technique that enhances children's learning in acquiring educative and meaningful experiences. The method challenges the teacher's ability to relate school topics to pupils relevant daily experiences, discuss these experience with the children and encourage them to relive the experiences in their classroom activities. This will help in reinforcing the learning possibilities of the children.

To be able to do this successfully, the nursery school class teacher needs skills, imaginative and creative abilities. He needs to instil in the children the desire to learn, permit them to express themselves and give understanding, affection and support when necessary. Yet he lets them grow up. The nursery school teacher occupies a foundation position in the educational life of the child. It is therefore better not to have nursery school education at all than to have one that is been handled by an incompetent teacher. To be able to lay a desirable foundation, a foundation that provides a richer, fuller and nourishing life for the pre-school child, the teacher must employ the most appropriate method to teach them. The pre-school child

lives in the world of play. The best method of reaching them therefore is through play activities which itself is a powerful inner force through which the child reaches out to his environment.

5.3.3. Implications for Teacher Education

No education system can rise above the quality of its teachers. This implies that the nursery school teacher must be a trained individual who has confidence in himself and in his ability to cope with his responsibility. The contributing factor to the most unsatisfactory situation that prevails in our nursery schools today whereby the children are drilled so hard in academic skills, is largely due to the lack of competent and adequately trained teachers. All the teachers who took part in this study had the Grade II Teachers' Certificate. However, since none of the Grade II Teacher Training Colleges in the country offers Early Childhood or Pre-School education in its curriculum, these teachers therefore were not suitable as nursery teachers. This study has therefore confirmed that for the teachers in the nursery schools to be effective, they need specialised training. The task of teaching in the nursery school is particularly difficult because the children are operating at the level of "working with things". The ability of a child to solve any problem depends on the extent to which the teacher makes him understand such a problem, how much positively the environment fosters trust and the amount of assistance that the environment provides in confirming and predicting events.

The young pre-school child is naturally curious and he is full of activities. To sustain his energy and attention in his activities in the learning process, the teacher should ask leading questions, answer the child's numerous questions and provide things for him to wonder and wander about.

Thus, a trained nursery school teacher, especially a teacher trained in the use of socio-dramatic play technique ensures active participation of the pupils in the class activities. She ensures that there is opportunity to:

- manipulate materials in the environment,
- investigate or explore the environment,
- use several senses,
- chose, make, decisions, do things by himself,
- talk about activities,
- describe and compare,
- use relevant materials
- use culturally relevant things,
- make use of personally relevant things.

These had helped the children in the socio-dramatic play group to see their entire activities through "my world." Therefore, various objects for counting, classifying, comparing, ordering, measuring, labelling, describing, matching to mention but a few that are familiar activities to the every day home/school life experiences of the children are provided in the classroom setting. They helped their problem-solving tasks.

5.3.4 Implications for the use of Language in the Nursery School

In most nursery schools in Nigeria, at least two languages are spoken. These are the indigenous and the English language. It is the expectation of the National Policy on Education that the medium of instruction at this level should be the mother-tongue or the language of the immediate community. To some Nigerian parents however, nursery education, according to Osisanya (1987), is almost synonymous with learning English or English Language acquisition. She regretted that most educated parents regard nursery school as a way of sustaining social class distinctions, a prestige symbol by having their children in second-language immersion at a very early age.

The consequent effect of this expectation is that the schools, regardless of the injunction of the National Policy, use the English language as the medium of instruction and shy away from the use of the language the children bring from home. The child's natural language which is descriptive, dynamic and forceful is thus not acceptable in his school. This rejection is a negation of the school's function of providing a smooth transition from home to school.

The findings of this study have therefore shown that when children are encouraged to verbalise their understanding of a situation in the language they feel most comfortable in, they participate more in the classroom activities. Thus they freely expressed themselves in naming, describing, classifying, comparing, singing and counting. The culturally relevant materials and salvaged environmental junks provided in the corners aided the perception of the child. These were translated into the officially accepted language when necessary.

It is therefore important that in order to stimulate the child in to develop his communicative skills, the nursery schools should provide the child with opportunities for verbal interactions. Such verbal interactions should not be limited to the use of the official language. Limiting the child to the use of English language prevents his spontaneous response and participation in the classroom activities.

It also implies the need to provide a supportive environment to which the child can relate.

5.3.5 Implications for the Nursery Schools.

For the child to deal effectively with his environment it is essential that the classroom

structure should encourage the child's efforts to solve problems that confront him. The teacher's assistance in the child's process of solving the problem should be clear and concise so as to focus the child's thought, limit his scope of answers and supply the child with necessary and appropriate solutions.

As nursery classes in Nigeria are usually larger than the stipulated 20 - 25 pupils per class the use of socio-dramatic play technique, as evident from the findings of the study, proved very suitable for Nigerian nursery classes.

Apart from the need to train the teachers of nursery school children, an essential requirement is the classroom structure that has such common materials as plates, cups, spoons, knives, bags, bottles, funnels, bowls, shoes, combs, pots and so on in addition to the inexpensive toys and materials. Though this study had used only three learning corners, more corners should be created in the classroom. These are reading, listening, block-building, concept formation, art and special activities.

In the present study, all the subjects on the school time-table were taught through the use of socio-dramatic play technique. This has thus integrated the various subjects and broke the rigid Time-table format that existed in the schools. This gave the

pupils time to work on the problems. Their eventual ability to work out the solutions gave the children a sense of mastery and increased their confidence.

This approach, the socio-dramatic play, of the study used social themes. The visual materials created in the corners of the classrooms provided opportunity for activities. Thus the children in the experimental group concentrated on their activities, made use of the materials and generally increased their problem-solving ability. As a result of this socio-dramatic play technique is strongly recommended as an effective method. It is a powerful instructional technique in the teaching of numerical and verbal problem-solving.

5.4 Suggestions for Further Research

This limitations and the implications of this study have necessitated further research. The present study has focussed on verbal and numerical problem-solving. The researcher however realises that there are other aspects of the child's learning that constitute an important part of early education. It is therefore suggested that further research is needed on such aspects as seriation, spatial relations, temporal relations and others.

The study has also not looked into the details, the increase or otherwise of the children verbal acquisition in terms of vocabulary, sentence patterns and length as a result of the use of the socio-dramatic play technique. Further research is recommended in these areas.

It was pointed out that this study was limited to only ten schools in Lagos State. It is necessary to widen the scope so as to make the results generalisable to all schools in the Lagos State and possibly to all schools in the country. Further research is however needed to find out if the same results will be obtained from the other States of the Federation.

Socio-dramatic play technique was used with the experimental group for only four weeks. Further research is needed in order to determine its effect over a longer period of time.

CHAPTER SIX

6.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 General Summary

This study was designed to examine whether the use of socio-dramatic play technique will facilitate the problem-solving abilities of nursery school children. Specifically therefore, it investigated the effect of socio-dramatic play technique on the verbal and numerical problem-solving abilities of Nigerian nursery school children. A major purpose of the study was a determination of the instructional value of play for children in solving problems. A further concern of the study was an identification of one of the ways through which nursery school teachers can meaningfully utilize pupils' relevant experiences in problem-solving. It was also aimed at enhancing the use of socio-dramatic play as an instructional tool.

It was realised that as at the time of the study, there were no operational syllabuses or curriculum guide for nursery education in the country. There was therefore no uniformity in the activities of the nursery schools in the country. As a result of this situation, the researcher obtained six-weeks scheme of work of the participating schools. An examination of the schemes necessitated modifications to ensure equal learning opportunities for the pupils within the experimental period.

It was realised that adults were needed for carrying out the research. The researcher therefore trained nursery school teachers in the use of socio-dramatic play technique. The training of the teachers involved sessions of discussions, explanations and demonstration until the researcher was satisfied that the teachers understand and knew how to work within the experimental-frame-work.

After the training sessions, the teachers in the experimental classes set up three play corners in their classes. The teachers through suggestions, comments and questions to and from the pupils developed the themes of hunger, illness and shopping. The same play themes were used in both experimental and control groups. The choice of the themes was guided by the familiarity of pupils with the themes and the need to create roles for both sexes.

In order to examine the stated hypotheses relating to the study, three research tools were used to collect data. These tools were questionnaire, observation and achievement tests.

A pilot study was carried out prior to the main study. This was to ascertain the reliability and validity of the research tools used for the study.

The subjects for the study consisted of 630 nursery school children and 20 nursery school teachers drawn from 10 registered and approved schools in Lagos State of Nigeria. From the pattern of distribution of these schools in the State, a proportional stratified

sampling of the 10 schools was done.

The research design employed was a pre-test-treatment and a post test. An experimental and a control groups were set up. To ensure that bias or extraneous variables were not introduced into the results, five of the ten schools were randomly assigned to experimental group and the remaining five to the control group. Pre-test scores were obtained on Verbal and Numerical problem-solving before the commencement of the teaching in the use of socio-dramatic play technique. The Treatment followed and the post-test scores were obtained thereafter.

Analysis of covariance was used to compare the main effects of teaching the pupils at two levels using the pre-test scores as covariate. The T-test was used to test the significance of the difference in the mean scores on teacher quality, teacher attitude and pupils' involvement in activities.

6.2. Conclusions and Recommendations.

The effectiveness of nursery education is judged by the degree to which it assists the child to be adaptive with regard to extra-school tasks involving seeking, finding, acquiring, remembering, communicating, collecting information, expressing thoughts and feelings to oneself and to others.

It was the argument of this study that the period of early childhood education is not the optimal period for imposing and drilling

the academic skills of the young pre-school child. At the outset of this study therefore, two basic questions were formulated about the use of socio-dramatic play technique to aid learning of the nursery school child. The questions were intended to challenge and focus attention of nursery school educators on how best to help the young pre-school child to acquire educative and meaningful experiences.

From the discussions of the study, these questions and their answers may be summarised as follows:

1. Does the use of socio-dramatic play technique produce greater verbal and numerical problem-solving abilities among nursery school children than the use of the conventional method?

On the basis of the findings of this study, it can be safely concluded that the use of socio-dramatic play technique does produce greater verbal and numerical problem-solving abilities among nursery school pupils than the conventional method. It has proved to be an effective method of helping the child to acquire relevant information, comprehend such information, create new relevant information and transfer and extend information to others. Thus the child has become an active participant in his own learning.

2. Does socio-dramatic play technique create greater interest in learning among nursery school children than the conventional method?

The opportunity afforded by the socio-dramatic play technique environment made the children to readily identify with both the materials and the activities generated. The children were not coerced into doing the various activities. It was as a result of the varied activities that the pupils were motivated to spontaneously want to count, match and sort, objects paint, draw and do other activities.

In conclusion, the study indicated that children showed greater interest in their learning when the material, topic and activities are relevant to the child. It is the only way that eliminates frustration and boredom and ensures that the child's learning affords him satisfaction and much joy.

For the young pre-school child to explore and deal with his environment successfully, he needs to learn problem-solving strategies.

From the outcome of this study, it is strongly recommended that for the young pre-school child to deal effectively with his environment, and move forward at solving the problems that confront him in his daily living, adequate provision must be made for socio-dramatic play in his school and home environment. This should take full cognisance of the following:

- i. an environment which encourages and promotes freedom of the child's exploration, must be ensured,
- ii. an environment that constructively encourages and challenges the child's efforts at solving problems

should be created,

- iii. Culturally relevant environment
with responsive and accommodating
adults must be ensured.

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Nursery Education Questionnaire

Part I

Survey of Attitude

This scale consists of 20 statements designed to sample your opinions towards the teaching in the Nursery classes. There are no RIGHT or WRONG answers. What is expected is your own individual view on each statement. Please read each statement.

Instruction

Following is a list of statement about play, its value, function of the teacher and materials used for teaching in the nursery school. All you have to do is to circle one of the abbreviations - "SA" "A" "U" "D" or "SD" typed on the right hand side of each statement. So if you strongly agree with a statement circle 'SA' if you only agree with the statement circle 'A' If you are undecided or uncertain circle 'U' If you disagree with the statement circle 'D' And if you strongly disagree circle 'SD'

1. Teachers should strictly assign roles to pupils. SA A U D SD
2. Play leads to chaos in the classroom SA A U D SD
3. Teachers should bring every object to the classroom when teaching. SA A U D SD
4. Play can only be allowed in the class only when pupils finished their works SA A U D SD
5. When children play together they should not be allowed to criticise each other SA A U D SD

6. A teacher can effectively use play to teach any lesson on the time-table. SA A U D SD
7. For effective teaching teachers should make use of pupils own experiences. SA A U D SD
8. Pre-School children should be encouraged to use their imagination SA A U D SD
9. Materials to be used should be displayed in the full view of the pupils before the lesson starts. SA A U D SD
10. Nursery school children are too young to go on field trips. SA A U D SD
11. Teachers should not encourage any kind of play in her lessons SA A U D SD
12. Nursery class teacher should freely join in children's play activities. SA A U D SD
13. Children's stories are incoherent therefore only the teacher should tell stories in the classroom. SA A U D SD
14. When children play together their interaction promotes mutual understanding. SA A U D SD
15. Play of the child enables him to learn to adapt to varying situations. SA A U D SD
16. Teachers should not tell what a child is expected to do when playing. SA A U D SD
17. Children should be allowed to narrate events in their lives. SA A U D SD
18. Pupils should be satisfied with only the materials teachers provide for play. SA A U D SD

19. Children have enough opportunity for play at home therefore the school should discourage any play activity in the classroom. SA A U D SD
20. The play period is the time for the teacher to relax her nerves. SA A U D SD

PART II

Personal Data

Thanks very much for responding to all the statements. Now we need some information about yourself.

1. Have you ever taught in a Nursery School before?

☐ Yes ☐ No

2. If Yes how long ☐ Below 5 yrs ☐ Above 5 yrs.

If No how many years have you been a teacher ☐

3. What is your present age ☐ years

4. What are your qualification's ☐ Primary six ☐ Modern

☐ Grade II ☐ WASC ☐ Diploma

☐ Any other (Please specify)

5. Are you married? ☐ Yes ☐ No

6. How many children have you? ☐

APPENDIX B**OBSERVATION**

OBSERVATION OF TEACHER

(A) Role Definition	1. Teacher to discuss the situation
	2. Identify the characters
	3. Identify their roles
(B) Play participation	4. Teacher picks a role
	5. Verbalises activity
	6. Uses materials
(C) Motivate Pupils activities	7. Make pupils enact roles
	8. Encourage verbalisation
	9. Encourage volunteers
	10. Give cues
Verbal Cues	11. Ask questions
	12. Talks about activities
	13. Compare

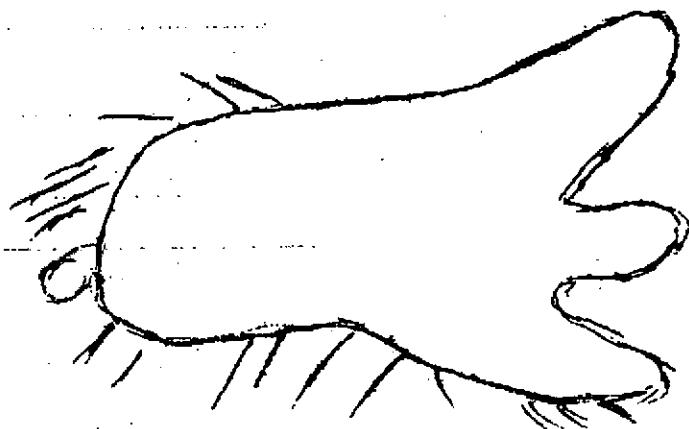
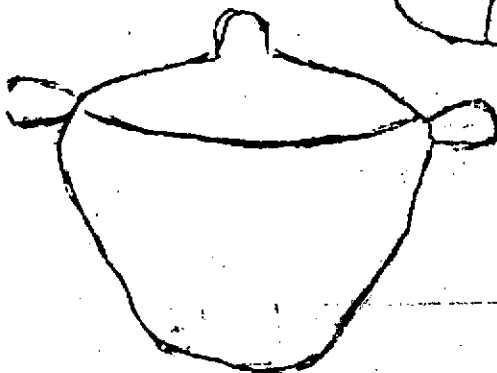
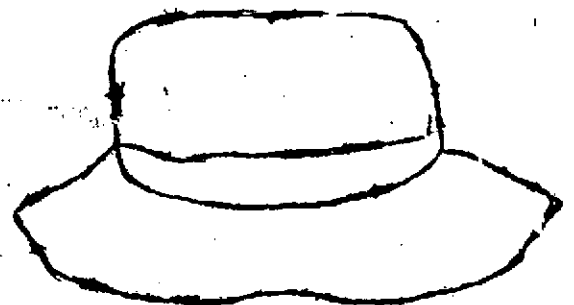
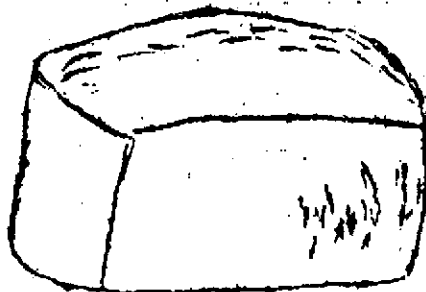
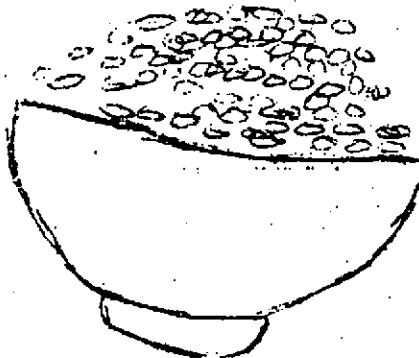
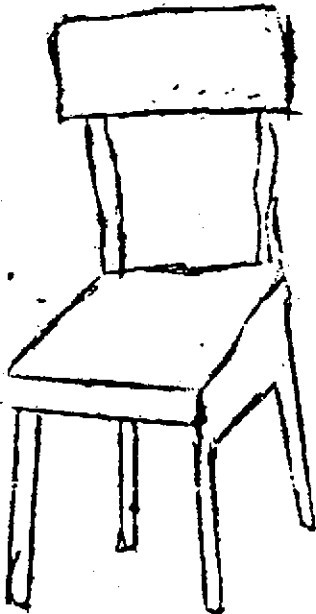
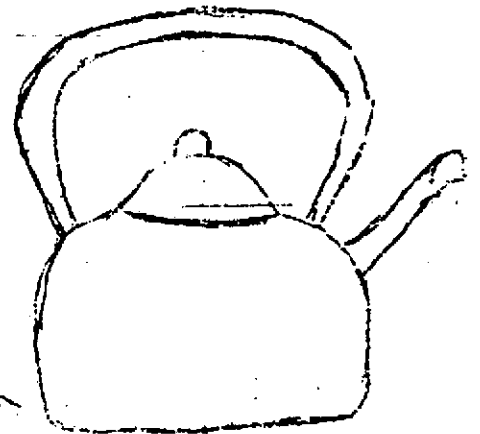
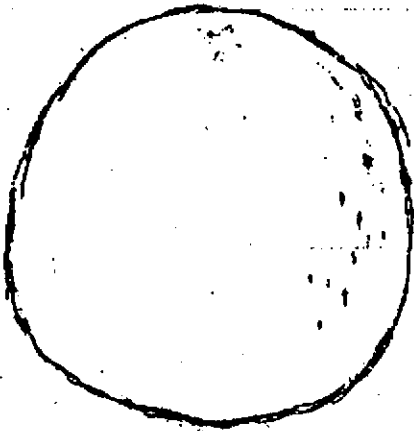
OBSERVATION OF PUPILS

Pupil Volunteers	1. Withdrawn
	2. Shy
	3. Confident
	4. Willing
Pupil Participates	5. Comprehending
	6. Rigid
	7. Distracted
	8. Spontaneous
Pupil Verbalises	9. Intelligible
	10. Meaningless
	11. Shy
	12. Describes Activities
	13. Uses Objects
Tolerance	14. Friendly
	15. Defensive
	16. Irritable
	17. Agreeable

APPENDIX C1

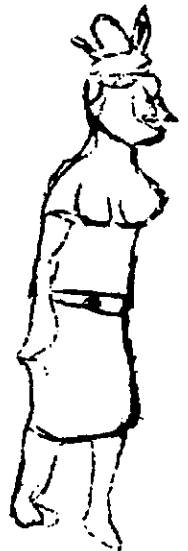
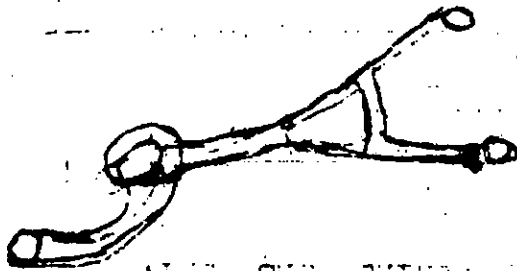
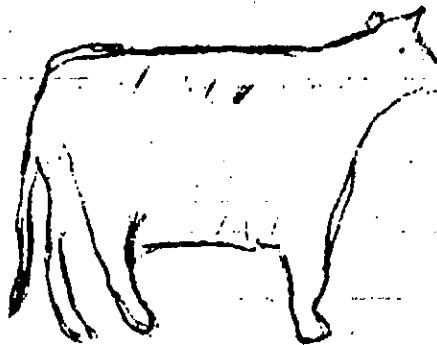
TEST

WHAT CAN YOU EAT IN THESE PICTURES ?
PAINT THEM .

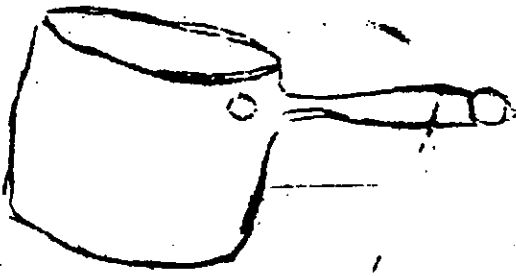
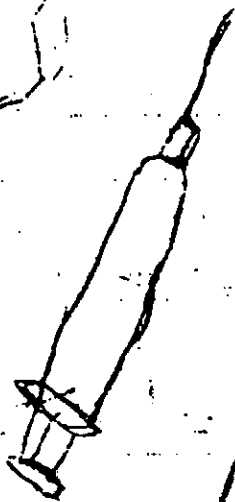
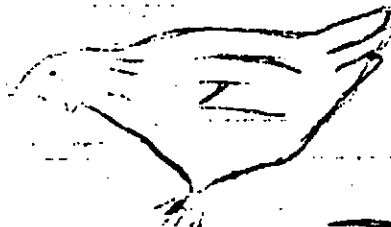
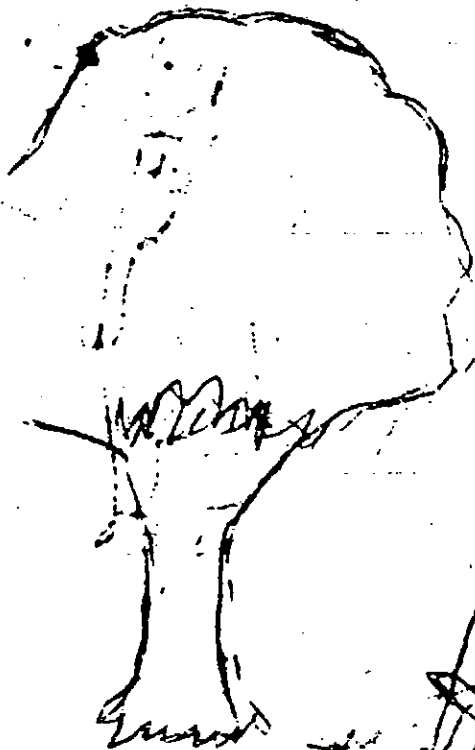


APPENDIX C2

PAINT THE THINGS YOU CAN FIND IN THE
HOSPITAL

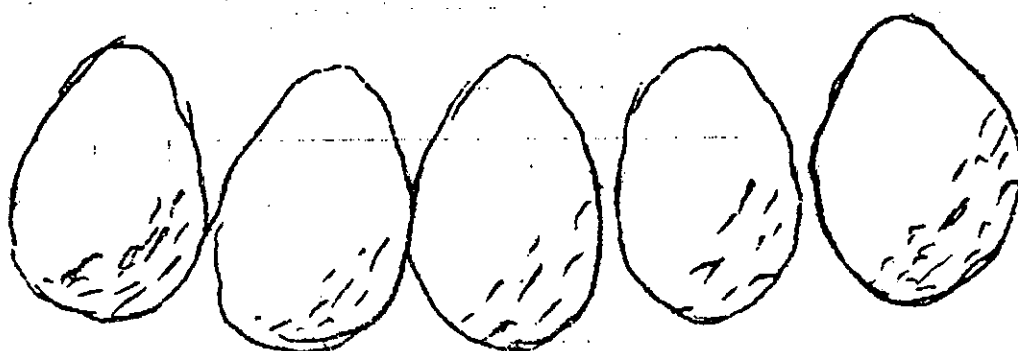
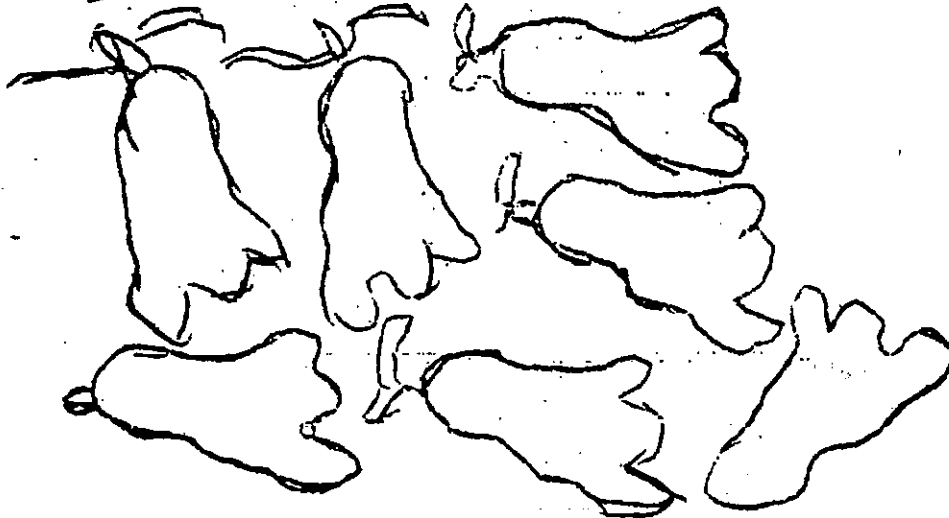
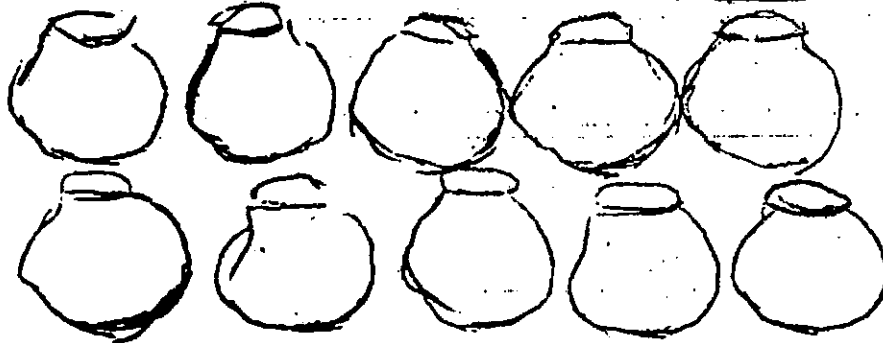
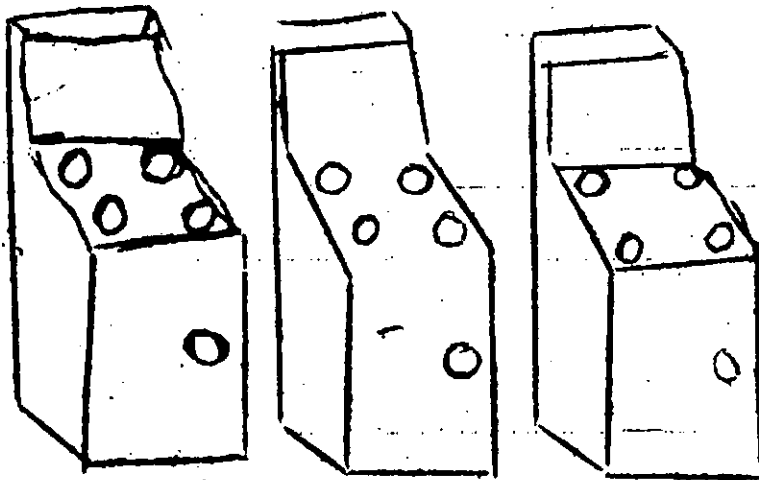


PAINT THE THINGS YOU CAN FIND IN THE
HOSPITAL



APPENDIX C3

DRAW A LINE TO THE CORRECT NUMBER

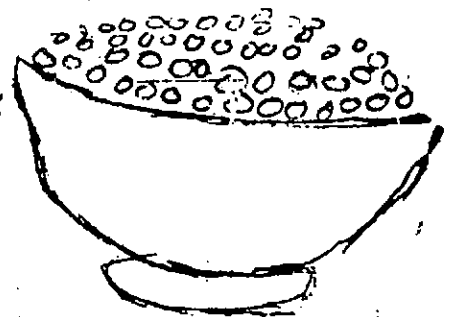
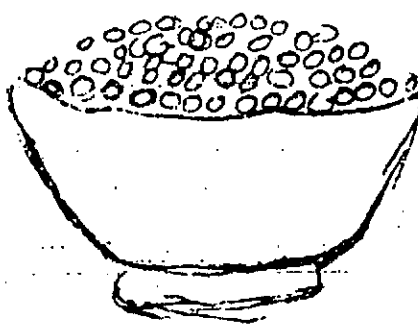
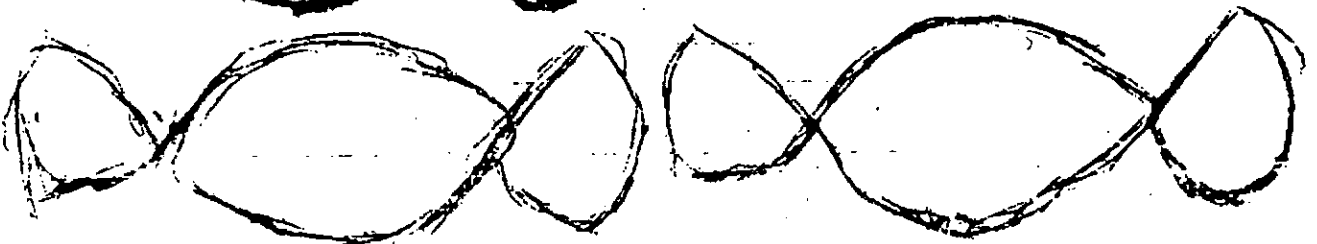
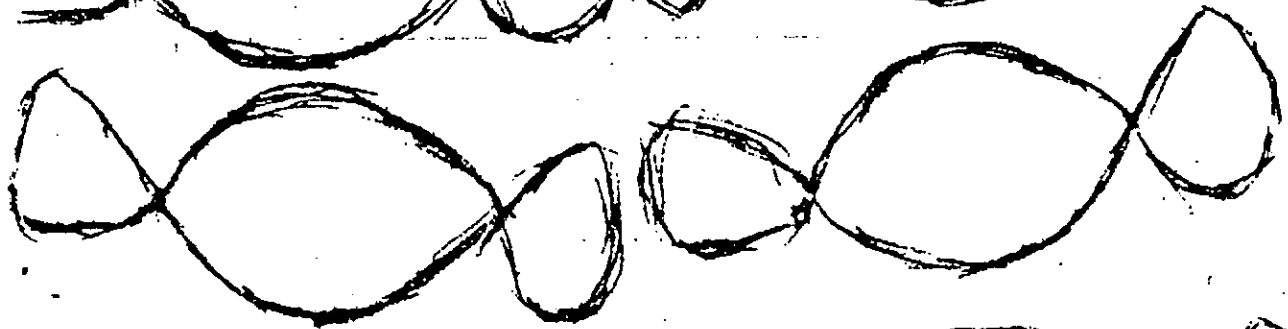
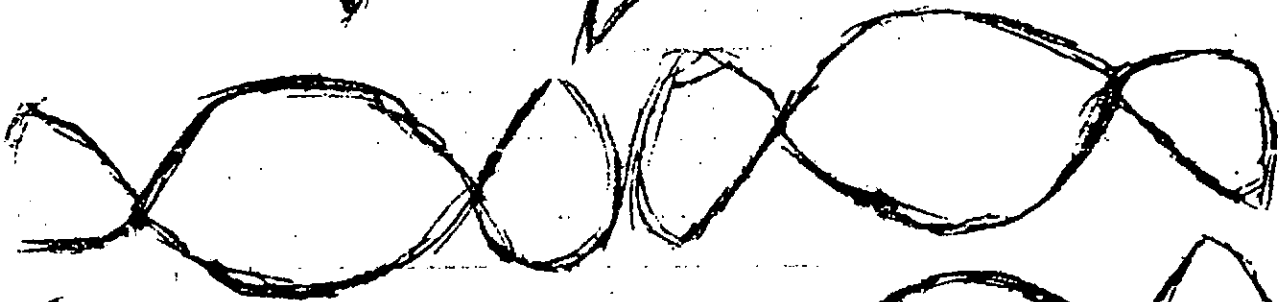
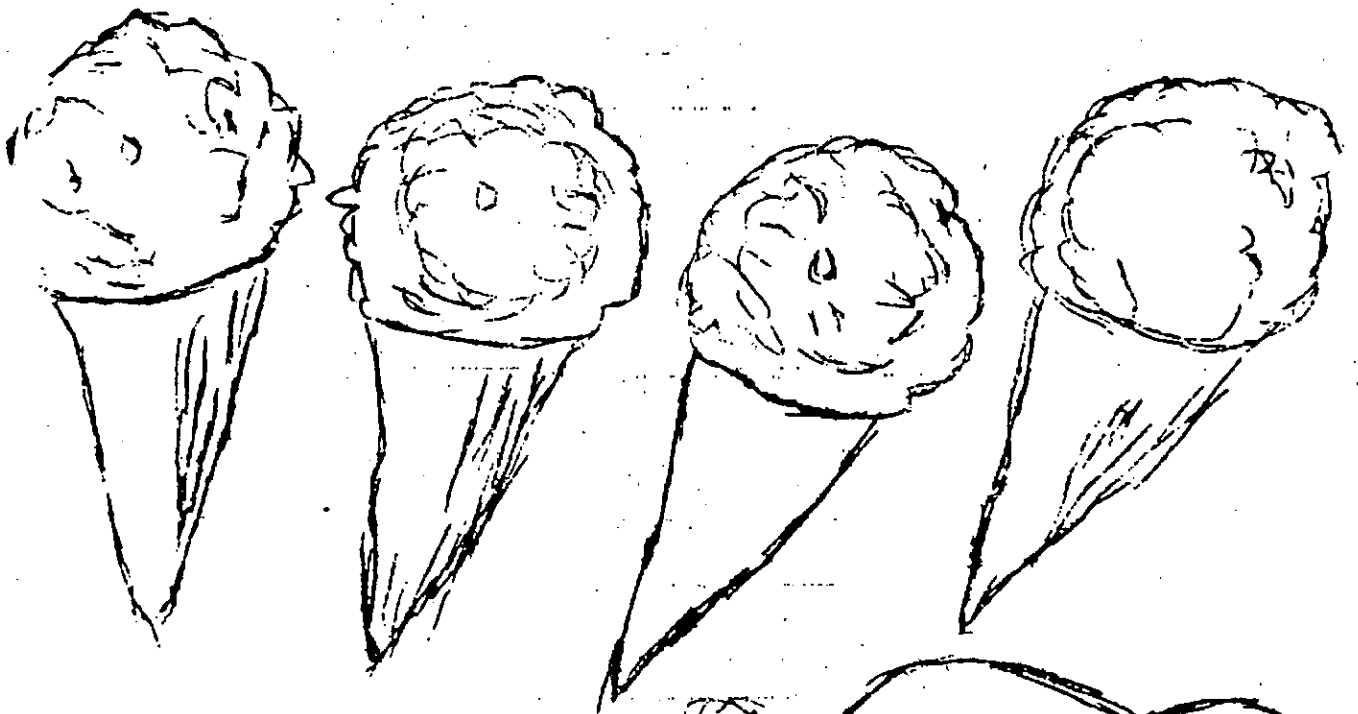


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APPENDIX

C4

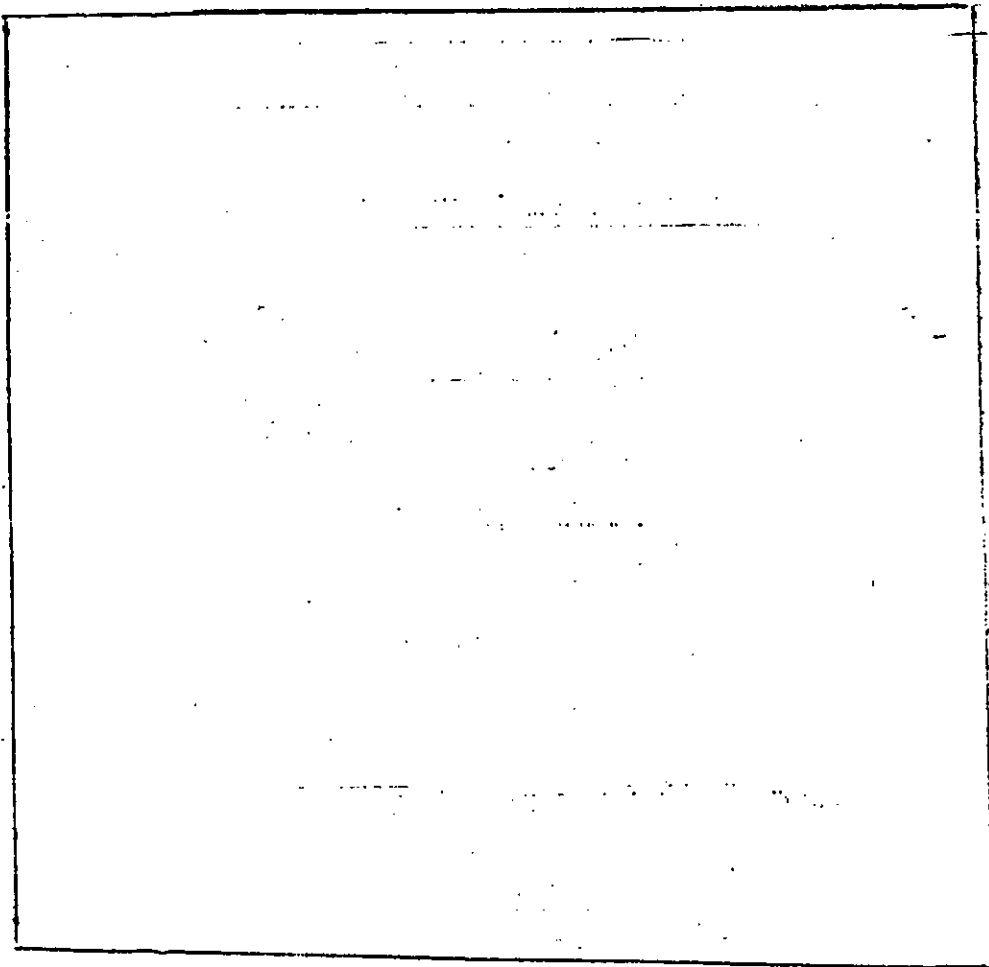
COUNT AND WRITE THE NUMBER



APPENDIX

C5

DRAW EIGHT BALLS IN THE BOX



APPENDIX C6

APPENDIX D

A TYPICAL DAY IN SOCIO-DRAMATIC PLAY

CLASSROOM

TOPIC: STORY TELLING

CLASSES: NURSERY IIOBJECTIVES: At the end of the lesson, pupils should;

- (1) Narrate the story.
- (2) Enact the sequence of the story.
- (3) Supply dialogue.
- (4) Mention the characters in the story.
- (5) Dramatise the story.

DEVELOPMENTAL LEVEL: Children were already familiar with family set up in the classroom. They were able to identify and label some materials found in the home and the market. They have already visited a market.

PROCEDURE: Teacher sings "who will buy my toys" while carrying a tray of toys in the market corner. She leads the song. She asks if any of the children have been to a market? To do what? with whom? What were the things they saw in the market? Was the market like the one visited by the pupils?

The pupils are made to name and identify the various things sold in the market. She asks for what people do in the market. Volunteer as sellers in the market are made to sit by their wares.

The teacher then narrates the story of a family. In the family, the father went on to work. The mother and her children were at home. She sent the children to the market to buy yams. The children did and on their way home, they met a friend. They put the yam under a tree and went to play. Goats came and ate all the yams. Teacher calls on the pupils to relate the story. She encourages let's pretend play in the enactment of the story by each family.

Teacher guides with questions and suggestions to supply dialogue and elaborate the story line:

What did mummy ask her children to buy ?

Let her say it to her children

What did she give them ? (Money)

Why ? (To buy the yam from the market)

Where is the market ? Is it far away from their house ?

Who is the children's friend ?

What did he/she say to the children ?

What did they say ?

Where was the yam ? What happened to it ? Where were the children and what were they doing ? Show me.

When the children discovered that goats have eaten the yam, how did they feel ? Show me.

LETTER WORK:

WORDS BEGINNING WITH 'P'

OBJECTIVES: At the end of the lesson the pupils should be able to:

- (i) Name objects beginning with letter 'P'
- (ii) Match objects to the correct word _____
- (iii) Sort letter 'P' from the other letters.

DEVELOPMENTAL: The children were able to recite the alphabets

Aa - Oo.

PROCEDURE: Teacher tells pupils that the name of one of the members of the family begins with the letter 'P'. Requests the pupils to recite the alphabets. They sing the song A. B. "I know A.B.C." Teacher tells them that the child's name is Peju. Today is her birthday. Peju decided to call all children whose names begin with the letter 'P'. Teacher aids pupils to say names that begin with letter 'P' - Poju, Peter, Popoola, Philip, Pelumi, Peri. All the children invited to Peju's birthday brought presents beginning with the letter 'P' - Purse, pail, pot, pictures, pen, pencil, plates, plastics pails, pan and pants. Now lets pretend to be at Peju's birthday. Teacher helps pupils to set up the party as in the Family at meal. The food served had pepper, Pawpaw, Pineapple and fried plantains were served too.

Teacher shows cut out letter 'P'. Pupils match the letter to the pictures. They are divided into 3 groups to sort, match and fill in the missing letter 'P'.

NUMBER WORK:

TOPIC: MATCHING OF NUMBERS WITH OBJECTS:

OBJECTIVES: At the end of the lesson pupils should be able to:

- (i) Match given objects with corresponding number symbols.
- (ii) Count objects 1 - 15
- (iii) Sort figures 1 - 15

DEVELOPMENTAL LEVEL: Children have been able to count orally 1 - 25.

They can identify figures 1 - 10, they are able to sort figures 1 - 10

PROCEDURE: How many children are in each family ? Let us count them. How many things have the sellers in their stall ? She leads children to count out the various things on display in the market corner. How many packets of Gmo, sugar, biscuits, and matches, do we have ? How many tins of milk, cups, etc. Children count them and pick figures that correspond ^{to} the objects.

Lets pretend that the family is at meal. The family has some visitors, mother now wants her children to set the table for 15 people altogether. She makes children identify all the things, needed for serving - They count out 15 plates, forks, cups, spoons, knives, chairs and table mats. Each group dramatises a family at meal. Teacher gives out objects to pupils to count and sort. They matched objects counted to figures.

ASSIGNMENT: Pupils should bring an empty tin of milk or tomato ketchup to the class tomorrow.

APPENDIX E

A TYPICAL DAY IN THE CONVENTIONAL CLASSROOM

TIME: 30 Mins.

SUBJECT: Story telling

TOPIC: The Yam

OBJECTIVES: At the end of the lesson, pupils

Tell the sequence

Narrate the story.

PROCEDURE: Teacher tells the story of a family in which the parents are out. Children were instructed to buy pieces of yams from the market on their way back from school.

They bought the yams and on their way, met friends and went off to play; leaving the yams under a tree in the basket. Goats ate the yams. The children became unhappy and cried. Teacher calls on the children to relate the story. Teacher encourages children to relate the sequence of the story. Teacher guides with questions to supply the missing points in the story.

TIME: 30 Mins.

SUBJECT: Number Work

TOPIC: Matching of Numbers with objects

OBJECTIVES: At the end of the lesson pupils should be able to:

(i) Match given objects with corresponding number symbols.

(ii) Count objects 1 - 15

(iii) Sort figures 1 - 15

DEVELOPMENT LEVEL: Children have been able to count orally 1 - 25. They can identify figures 1 - 10.

PROCEDURE: Teacher shows flash cards of figures 1 - 10. She calls out the figures and makes them say the figures after her. Shows drawings of various objects and makes the pupils to count them. Teacher introduces figures 11 - 15. Makes children read out the figures. Demonstrates writing the figures. Calls on some pupils to write on the Black Board. Teacher pastes on the blackboard drawings of objects and asks pupils to count them. Teacher gives out exercises to pupils.

TIME 30 Mins.

SUBJECT: English Language

TOPIC : Words beginning with letter P.

OBJECTIVES: At the end of the lesson, the pupils should be able to:

- (i) Name objects beginning with P
- (ii) Match objects to the correct word
- (iii) Sort letter 'P' from the other letters.

APPARATUS: Some cut out letters A - Z.
Diagrams of Pails, Pot, Pencil, Pineapple etc.

PRE-KNOWLEDGE: The Children have been reading the alphabet orally.

PROCEDURE: Let the teacher write the letter boldly on the board for the children to see.

The teacher teaches the children the correct pronounciation of the letter that is; she pronounces the letter after her.

Show the children the diagrams;

Let them identify the objects with the letter and call out the names e.g. pail, pot, pencil, pineapple etc. Let the children suggest some other objects that start with letter 'P'. Let them sort out the letter from the cut out letters in Samco containers.

While thez carry out the activities. let the teacher go round to supervise and correct the children.

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COMPUTER PRINT OUT

ANOVA PRE AND POST NUMERIC AND VERBAL APTITUDE ANALYSIS

FILE HNAME (CREATION DATE = 14/01/88)

VAR01 PRE-NUMERIC

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE	ADJUSTED	CUM
			FREQ (PCT)	FREQ (PCT)	FREQ (PCT)
	0.	0	1.3	1.3	1.3
	1.	2	0.3	0.3	1.6
	2.	5	0.8	0.8	2.4
	3.	4	0.6	0.6	3.0
	4.	30	4.8	4.8	7.8
	5.	36	5.7	5.7	13.5
	6.	152	24.1	24.1	37.6
	7.	49	7.8	7.8	45.4
	8.	189	30.1	30.0	75.4
	9.	24	3.8	3.8	79.2
	10.	106	16.8	16.3	95.6
	11.	2	0.3	0.3	96.0
	12.	22	3.5	3.5	99.8
	14.	1	0.2	0.2	100.0
TOTAL		633	100.0	100.0	
MEAN	7.408	STD DEV	0.087	MEDIAN	7.552
MODE	8.000	STD DEV	2.173	VARIANCE	4.744
KURTOSIS	0.904	SKEWNESS	-0.392	RANGE	14.000
MINIMUM	0.0	MAXIMUM	14.000		
VALID CASES	630	MISSING CASES	0		

ANOVA PRE AND POST NUMERIC AND VERBAL-APTITUDE ANALYSIS

FILE N0NAME (CREATION DATE = 14/01/83)

VAR02 PRE-VERBAL

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
	0.	99	15.7	15.7	15.7
	1.	57	7.9	7.9	23.7
	2.	71	11.3	11.3	34.9
	3.	80	12.7	12.7	47.6
	4.	112	17.6	17.6	65.2
	5.	99	15.6	15.6	80.8
	6.	63	10.1	10.1	90.8
	7.	27	4.3	4.3	95.1
	8.	16	2.5	2.5	97.6
	9.	12	1.9	1.9	99.5
	10.	2	0.3	0.3	99.8
	64.	1	0.2	0.2	100.0
TOTAL		630	100.0	100.0	

MEAN	3.576	STD DEV	3.134	MEDIAN	3.635
MODE	4.000	STD DEV	3.361	VARIANCE	11.297
KURTOSIS	165.199	SKEWNESS	9.294	RANGE	64.000
MINIMUM	0.0	MAXIMUM	64.000		

VALID CASES	630	MISSING CASES	0
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ANOVA PRE AND POST NUMERIC AND VERBAL ABILITY ANALYSIS

FILE N0NAME (CREATION DATE = 14/01/88)

VAR03 TOTAL PRETEST

CATEGORY LABEL	CODE	ABSOLUTE	RELATIVE	ADJUSTED	CUM
		FREQ	FREQ (PCT)	FREQ (PCT)	FREQ (PCT)
	0.	5	0.8	0.8	0.8
	1.	3	0.5	1.5	1.3
	2.	2	0.3	1.8	1.6
	3.	4	0.6	2.4	2.2
	4.	9	1.4	3.8	3.7
	5.	22	3.5	7.3	7.1
	6.	13	2.9	10.2	13.0
	7.	48	7.6	17.8	17.6
	8.	45	7.1	24.9	24.8
	9.	68	10.8	35.7	35.6
	10.	66	10.5	46.2	46.0
	11.	77	11.1	57.3	57.1
	12.	59	9.4	66.7	66.5
	13.	66	10.5	77.2	77.0
	14.	43	6.8	84.0	83.8
	15.	36	5.7	89.7	89.5
	16.	24	3.8	93.5	93.3
	17.	18	2.9	96.4	96.2
	18.	9	1.4	97.8	97.6
	19.	11	1.6	99.4	99.2
	20.	4	0.6	100.0	99.8
	21.	1	0.2	100.0	100.0

ANOVA PRE AND POST NUMERIC AND VERBAL APTITUDE ANALYSIS

FILE NONAME (CREATION DATE = 14/11/83)

VAR04 POST NUMERIC

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE		CUM ¹ FREQ (PCT)
			FREQ (PCT)	ADJUSTED FREQ (PCT)	
	0.	1	0.2	0.2	0.2
	4.	3	0.5	0.5	0.6
	5.	6	1.0	1.0	1.6
	6.	62	9.8	9.8	11.4
	7.	24	3.8	3.8	15.2
	8.	143	23.5	23.5	38.7
	9.	30	4.8	4.8	43.5
	10.	153	24.3	24.3	67.8
	11.	15	2.4	2.4	70.2
	12.	59	9.4	9.4	79.5
	13.	10	1.6	1.6	81.1
	14.	56	8.9	8.9	90.0
	15.	59	9.4	9.4	99.4
	64.	1	0.2	0.2	99.5
	68.	2	0.3	0.3	99.8
	70.	1	0.2	0.2	100.0
TOTAL		630	100.0	100.0	

MEAN	10.330	STD. ERR	0.214	MEDIAN	9.768
MODE	10.330	STD. DEV.	5.361	VARIANCE	28.737
KURTOSIS	80.924	SKENESS	2.757	RANGE	70.
MINIMUM	0.00	MAXIMUM	70.000		

VALID CASES 630 MISSING CASES 0

ANOVA PRE AND POST NUMERIC AND VERBAL APTITUDE ANALYSIS

FILE NONAME (CREATION DATE = 14/11/88)

VAR05 POST VERBAL

CATEGORY LABEL	CODE	ABSOLUTE	RELATIVE	ADJUSTED	CUM
		FREQ	FREQ (PCT)	FREQ (PCT)	FREQ (PCT)
	0.	8	1.3	1.3	1.3
	1.	3	0.5	0.5	1.7
	2.	20	3.2	3.2	4.6
	3.	33	5.2	5.2	10.2
	4.	80	12.7	12.7	22.9
	5.	77	12.2	12.2	35.1
	6.	125	19.8	19.8	54.9
	7.	76	12.1	12.1	67.0
	8.	78	12.4	12.4	79.4
	9.	46	7.3	7.3	86.7
	10.	52	8.3	8.3	94.9
	11.	9	1.4	1.4	96.3
	12.	4	0.6	0.6	97.0
	13.	5	0.8	0.8	97.8
	14.	9	1.4	1.4	99.2
	15.	5	0.8	0.8	100.0
TOTAL		630	100.0	100.0	

MEAN	6.558	STD. DEV.	0.106	MEDIAN	6.252
MODE	6.000	STD. DEV.	2.653	VARIANCE	7.064
KURTOSIS	3.004	SKENNESS	0.457	RANGE	15.000
MINIMUM	0.0	MAXIMUM	15.000		

VALID CASES 630 MISSING CASES 0

ANOVA PRE AND POST NUMERIC AND VERBAL APTITUDE ANALYSIS

FILE N0NAME (CREATION DATE = 14/01/98)

26. 7 1.1 1.1 97.5

27. 4 0.6 0.6 93.1

28. 4 0.6 0.6 93.7

29. 4 0.6 0.6 99.4

30. 4 0.6 0.6 111.6

TOTAL 630 100.1 100.1

MEAN	16.443	STD DEV	0.190	MEDIAN	15.750
MODE	16.000	STD DEV	4.773	VARIANCE	22.779
KURTOSIS	-0.059	SKEWNESS	0.456	RANGE	31.000
MINIMUM	0.0	MAXIMUM	30.000		

VALID CASES 630 MISSING CASES 0

ANOVA PRE AND POST NUMERIC AND VERBAL ABILITY ANALYSIS

FILE NINAME (CREATION DATE = 14/01/93)

26. 7 1.1 1.1 97.5

27. 4 0.6 0.6 93.1

28. 4 0.6 0.6 93.7

29. 4 0.6 0.6 92.4

30. 4 0.6 0.6 91.6

TOTAL 630 100.0 100.0

MEAN 16.443 STD DEV 0.193 MEDIAN 15.750

MODE 16.000 STD DEV 4.773 VARIANCE 22.779

KURTOSIS -0.039 SKEWNESS 0.456 RANGE 30.000

MINIMUM 0.0 MAXIMUM 30.000

VALID CASES 630 MISSING CASES 0

ANOVA PRE AND POST NUMERIC AND VERBAL ABILITY ANALYSIS

FILE NONAME (CREATION DATE = 11/1/88)

VAR07 METHOD 1,2

CATEGORY LABEL	CORRESPONDING ABSOLUTE FREQ	RELATIVE	ADJUSTED	SUM
		FREQ (PCT)	FREQ (PCT)	FREQ (PCT)
0.	3	6.5	6.5	6.5
1.	312	49.5	49.5	51.0
2.	315	50.0	50.0	101.0
TOTAL	630	100.0	100.0	

MEAN	1.495	STD. DEV.	0.927	MEDIAN	1.500
MODE	2.000	STD. DEV.	0.519	VARIANCE	0.260
KURTOSIS	-1.726	SKEWNESS	-0.889	RANGE	2.000
MINIMUM	0.0	MAXIMUM	2.000		

VALID CASES 630 MISSING CASES 0

ANOVA PRE AND POST NUMERIC AND VERBAL ADDITION ANALYSIS

FILE: NONAME (ORIENTATION DATE = 27/01/86)

ANALYSIS OF VARIANCE
 VAR05 POST VERBAL
 BY VAR07 METHOD 1,2
 WITH VAR02 PRE-VERBAL

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIG.
COVARIATES	369.222	1	369.222	72.817	.000
VAR02	369.222	1	369.222	72.817	.000
MAIN EFFECTS	888.527	1	888.527	175.177	.000
VAR07	888.527	1	888.527	175.177	.000
EXPLAINED	1257.817	2	628.908	123.992	.000
RESIDUAL	2175.183	626	5.472		
TOTAL	4433.000	628	7.059		

ANALYSIS OF PRE AND POST NUMERIC AND VERBAL ADDITION ANALYSIS

FILE NONAME (CREATION DATE = 27/01/86)

ANALYSIS OF VARIANCE

VAR04 POST-NUMERIC

BY VAR07 METHOD 1,2

WITH VAR01 PRE-NUMERIC

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNI OF
COVARIATES	341.427	1	341.427	12.975	0.00
VAR01	341.427	1	341.427	12.975	0.00
MAIN EFFECTS	1210.481	1	1210.481	46.004	0.00
VAR07	1210.481	1	1210.481	46.004	0.00
EXPLAINED	1551.891	2	775.945	29.490	0.00
RESIDUAL	16471.500	626	26.312		
TOTAL	18023.391	628	28.701		

ANOVA PRE AND POST NUMERIC AND VERBAL ABILITY ANALYSIS

FILE NONAME (CREATION DATE = 2/23/84)

TABLE VII

ANALYSIS OF VARIANCE

VAR06 TOTAL POST TEST

BY VAR07 METHOD 1,2

WITH VAR03 TOTAL PRETEST

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGN. OF F
COVARIATES	2645.756	1	2645.756	222.656	0.000
VAR03	2645.756	1	2645.756	222.656	0.000
MAIN EFFECTS	4134.300	1	4134.300	347.926	0.000
VAR07	4134.313	1	4134.313	347.926	0.000
EXPLAINED	6730.066	2	3392.233	285.291	0.000
RESIDUAL	7428.582	626	11.833		
TOTAL	14218.648	628	22.641		

t-test OF OBSERVATION OF PUPILS INVOLVEMENT IN
THE CLASSROOM ACTIVITIES.

N=630

GROUP 1 - EXPERIMENTAL		GROUP 2 - CONTROL		POOLED VARIANCE ESTIMATE		
VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T-VALUE	DEGREES OF FREEDOM	2-TAIL PROB
SCORE						
EXP GROUP 1	315	7.1524	2.441			
CON GROUP 2	315	5.1296	1.279	25.97	628	0.01

t-test OF OBSERVATION OF TEACHER QUALITY.

N=20

10	VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.	10
12	VAR01	EXPERIMENTAL RATING	7.6000	1.536				12
14		20			13.27	18	0.0001	
16	VAR02	CONTROL RATING	2.7000	0.979				
18								

t-test OF QUESTIONNAIRE ON TEACHER QUALITY

N-20

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
VAR01	TEACHERS' ATT. EXPERIMENTAL	38.9000	11.938	4.51	18	0.000
	20	27.3500	2.183			
VAR02	TRS' ATT. CONTROL					

25