

**A COMPARATIVE STUDY OF THE SCHOLASTIC PERFORMANCE OF
E-SCHOOLERS AND NON-PRESCHOOLERS IN EARLY PRIMARY SCHOOL**

By

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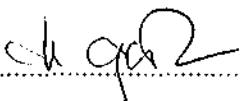
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Requirements for Degree of Master of Education

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Lusaka

DECLARATION

I declare that this dissertation has not previously been submitted even in part to this or any other University: where reference is made to other work, acknowledgements have been given.

Signature..... 

APPROVAL PAGE

This dissertation of Chileshe Lengalenga is approved as fulfilling part of the requirements
for the award of the degree of Masters of Education by the

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ABSTRACT

There has been a belief by a number of parents in Zambia, and literature has shown that children who go to preschool do perform better academically in early primary school than those who do not go to preschool.

The purpose of this study was to find out the extent to which preschool experience in Zambia created differential scholastic performance amongst primary school pupils. It was hypothesized that early primary pupils with a preschool experience significantly do better in English and Mathematics than those without this background.

A sample of 44 boys, 30 girls and 12 teachers from 6 primary schools in Lusaka were involved in the study. The boys and girls were given English and Mathematics tests. These tests were prepared by the researcher based on the government syllabus that is followed in all schools. The teachers were interviewed and asked to fill in a questionnaire about the academic performance of each student dating back to grade one

The results showed a difference in performance between non-preschoolers in all the sampled schools. Those who went to preschool performed better in academic work than those who had no preschool background. In terms of behaviour in class, teachers also noticed a difference between the two groups. Those who went to preschool behaved better according to school regulations than those who never went to preschool.

CHAPTER ONE

INTRODUCTION

Background to the problem

Research findings on human development provide evidence that a child's earliest years are by far the most important in shaping personality characteristics, social, emotional, physical and intellectual development (GoodKontz et al., 1947).

From the day a child is born it moves through a growth period and whatever is done during each developmental stage ties in with the past and the future (Anderson,1947). This makes learning in early childhood an important foundation on which later learning can occur (Gray,1947).

The matter of early Childhood Education is not at all a new subject. In fact, Hilderbrand (1981), points out that between the time of the Greeks and today there have been more than two thousand years of ideas and experience relating to the subject. Initially early childhood education served as a social service rather than as an education function. It was away of helping out mothers who had to go to work in order to support their families during upheavals such as the Industrial Revolution, the Great Depression and the Second World War (Lancaster and Grant,1975). But as the knowledge of child development grew, the objectives of nursery schools and kindergarten changed from baby sitting to catering for the total child. The administrators of nursery school began to design programmes to cover, deal with and sharpen the

emotional, social, intellectual, aesthetic and physical aspects of the growing child. In doing so, these programmes prepared the child for the school experience which the home community did not give.

This is not to say children do not need a home environment. As a matter of fact, the best climate for the growing child is the home. But this is not just any home; it ought to be a home that provides affection, security, a sense of belonging and a sense of personal worth. Because many homes are unable to provide all these components, preschools have been established to supplant and complement the home (Lewanika, 1983). The idea here is not to replace the home or to take over the responsibility of the parents, but preschools are designed to pick-up where the homes left off and provide opportunities and materials that some homes are unable to provide. For example, language development can be enhanced at preschool.

Even though education at home, especially in a rural setting, has its own advantages the child is often left in a situation where he/she is unable to make the most of his/her latter educational opportunities. This is because even when a home is happy and satisfying, it has been found that children who have had educational experiences outside their homes are advanced in social response, motor co-ordination, health habits and more adaptable to new situations than those who do not have the early childhood educational experience (Goodkontz, 1947).

In Zambia, early childhood education has existed since the colonial era and has gained momentum since independence in 1964. This has been so, especially in the major towns where several such institutions have been established.

Preschools in Zambia may be grouped into two main categories, that of Day Nurseries and Community Preschools. Day Nurseries exist in low density residential areas and are run by private individuals, parent co-operatives, volunteer and church groups. The fees charged at the nurseries vary considerably. Most of these nurseries are well organised and managed. They usually have a good supply of play equipment, books, paints, toys etc. The staff that is employed in these places have the necessary qualifications and usually have considerable experience working with children. Although there is no curriculum available, children in some of the Day Nurseries are taught number and language work. In fact the medium of instruction is English and children easily pick up this language.

The main types of Day Nurseries are Day Care Centres, Creches and Play groups. The Day Care Centres and Creches run all day in order to free working mothers from full time care. Their main objective is to provide physical care, meals and organised play, or educational activities depending on the age group. Play groups operate in private homes. They are small and informally organised. They are run by parents who have no room for their children in nurseries. No fees are paid and no teachers are employed.

Community preschools are found mainly in high density areas. These are people institutions, organised, managed and administered on a self help basis by parents or the Local Authorities through Ward Development Committees. The Local Authorities provide community halls or centres for use. Sometimes, they even provide personnel to assist in the teaching. Furniture, learning and teaching materials are limited and of very poor quality in all community preschools. The majority of the staff employed are untrained and poorly paid. The job is insecure and so unattractive to well qualified staff. The classes are usually too big and some of the children too old to be in preschool. The medium of instruction is a mixture of Zambian languages and English. In most of the places the sanitation is often inadequate, unsuitable and unsafe. In spite of the increased number of preschools in Zambia there is still a large population of children, especially in the urbanised high density and rural areas, who do not attend preschool.

Bearing in mind that some studies done in this area suggest that preschool attendance lays the foundation on which academic skills can be based (Pilling and Pringle, 1978), one wonders if the children who do not attend these preschools in Zambia are at an academic disadvantage when they start school.

Purpose of the Study

The major purpose of this study was to find out the extent to which preschool experience in Zambia created differential scholastic performance amongst the early primary school pupil. The main question asked was: Do primary school children who have had preschool experience perform, in scholastic terms, significantly better than those without this experience?

Hypothesis

It was hypothesized that early primary school children (i.e. those in grades one, two and three) who had been to preschool significantly perform better in English and Mathematics than those without this experience. This was based on the assumption that children who were exposed to preschool education obtained pre-requisite academic skills. Because of this, differences in early primary school academic performance between the two should be expected.

Significance of the Study

The significance of the study was twofold; firstly, it was felt that it would provide research information on which teachers could base decisions regarding remedial instruction and streaming of students according to the presence or absence of pre-requisite skills for entry into primary school. Moreover, the findings are expected to inform early primary school teachers of the danger of assuming that all differences in academic performance displayed by their pupils were due to normal differences in intellectual ability.

In fact the results were anticipated to indicate that the difference in academic performance amongst pupils could be attributed to preschool and non-preschool experience.

Secondly, on an educational policy level, the research findings were expected to support the view that preschool education formed an important foundation on which to base primary school education. In recognition of this the findings were to form part of the basis for extending preschool provisions to children not catered for currently.

Scope and Rationale of the Study

The study dealt with the English and Mathematics subjects only. The selection of English and Mathematics was due to the fact that these were taught informally at preschool. In addition language is considered as the most useful attribute in concept formation and verbal articulation. In the later school years this is most important single index of a child's potential for handling academic tasks.

Limitations of the Study

Due to time constraints the study was limited to academic achievement with regard to English and Mathematics. This study was only conducted in Lusaka because there were more subjects that the study could be done. But, because of the representative nature of the sample one can say that it is applicable to the Zambian situation. On the whole what is happening in the preschools in Lusaka may be happening in other places because the conditions in the preschools are similar.

Definitions of Terms

Preschool

The term preschool in this study was used to mean educational institutions attended prior to primary school.

Scholastic Performance

This will refer to academic performance in primary school subjects such as English and Mathematics.

Number Facility

This means one's ability to work with numbers, solve quantitative problems, understanding and recognise quantitative difference.

Structured Preschools

Those preschools that have specific children's cognitive developmental and linguistic goals

Traditional Preschool

Those preschools whose emphasis is on free play and child directed activities.

Organisation of the Study

The study comprises six chapters. The first chapter deals with the introduction which gives a background to the problem and goes on to state the problem, hypothesis, significance and Limitations of the study and the definition of terms.

The second chapter deals with review of the relevant literature, comparing the performance of preschoolers with that of non-preschoolers. Most of the literature review involves studies done in Britain and America.

Chapter three deals with the data collecting procedures, research instruments used and the analysis of the data. The fourth chapter looks at the results obtained from the analysis of the data.

Chapter five deals with the discussion of results. It also deals with the summary, conclusions, recommendations and suggestions for further studies.

CHAPTER TWO

LITERATURE REVIEW

There have been numerous studies done in other countries that support the view that children who have been to a preschool significantly perform better in English and Mathematics than those without this experience. For example, according to Douglas and Ross (1964), children who had spent at least two hours a day in nursery school when they were four years old, had higher scores on test of intelligence and education attained than children of similar social class without nursery school experience. This advantage was gradually lost by the time the children were eleven years old but as they tended to have poorer home circumstances than the children who had not attended nursery school, the results suggest that preschool is beneficial.

Cohen and Bagshaw (1973), also carried out a similar study in Britain and found that the attendance of two and a half hours a day at a British nursery school appeared to result in children attaining greater improvement in language proficiency and concept formation than those of a similar social economic background who had not attended nursery school.

The findings of the Educational Priority Areas Project in Britain were compatible with that of Cohen and Bagshaw (1973). Gains in relation to national norms on standardised test attributable to nursery school attendance, whether or not a special programme had been introduced were found in several

of the preschool projects carried out by the EPA.

Findings from the West Riding preschool projects (Smith, 1975) are compatible with those of Douglas and Ross(1964). According to Pringle and Pilling(1978)these contain some of the strongest evidence for the educational benefits of nursery school attendance. In the year following the preschool programme, when the nursery school children entered the reception classes of the Denaby Infants Schools, gains continued to be made with some of the groups reaching scores above the age norms both on the Educational Priority Verbal Tests and Reynell Language Scales.The gains of the Denaby children were often larger than those of the children who had not attended nursery school.Although the differences between nursery attenders and non attenders are likely to be "washed out" in the second or third year, they seem to have been maintained better in West Riding Project than in most of the American studies.

Deutsch(1962) and Gray(1966) did studies on the effects of nursery school attendance on the culturally deprived. Hodges et al(1966) concentrated on these effects on five year olds.Deutsch (1962) and Gray(1965) worked with both parents and children. All three studies were aimed at increasing IQ, improving language, and upgrading social skills amongst target children. Findings from these studies showed more intial gains in the skills investigated in the experimental group than in the control group.This difference however, tended to lessen by second grade..

Klaus and Gray(1972),investigated the effect of early childhood education. Their results indicated that short term IQ was significantly different for the treated and control groups, though the difference lasted only for one year. In terms of readiness for reading,language personality characteristics the experimental group excelled the control group for two years.Similar results were observed by other researchers(Weikart,1972;Heber,1979).

Later comparative studies (Baruth and Duff,1980) have shown that recipients of early education compared with those without indicate (a) greater interest for the alphabet , vocabulary,numberwork,being read to as well as interacting with books;(b)score higher in reading skills;(c)learn faster, show greater auditory discrimination and superior motor co-ordination in first grade; (d) perform better in music,social science,language and Arithmetic. These differences however, diminish in or at the end of second grade.

Harold and Temple (1960) considered some children from four different schools against some children who had been at home and had been admitted straight to grade one.The conclusion was that children who attended Nursery School were better in every respect except in painting and manipulative control.

Other studies by Goldstein and Chorost (1960) analysed the school success of children of the low socio-economic class of grade one,two and three. This was done according to whether or not they had preschool or kindergarten experience

The final conclusion was that the preschool or Kindergarten experience helps the school performance of the children from the low socio-economic status.

Although the studies cited above have results that support what was expected, there have been other studies which do not show a clear cut distinction between the two groups in comparison. For instance, in the United Kingdom, the National Foundation of Educational Research Study (NFER, 1975) failed to find academic attainments in second year of Infants School that could be attributed to preschool experience. Children from the experimental group performed no better on the tests Reading and Mathematics than children without any preschool experience. Similarly, Widlake (1973), found that when compared to those who had not attended nursery school, the six to seven year old socially disadvantaged who attended nursery school were not superior in performance on tests of linguistic achievement.

Gray and Klaus (1970) and Gray (1974), provide evidence that first grade children who have been in a structured preschool programme are found to have some advantages in academic attainments over children without any preschool experience. This difference however, generally diminishes in second grade. The results from NFER studies and the Widlake study do not carry much weight because for one, the NFER study had been concerned with evaluating the effectiveness of special programmes introduced for pre-existing preschools, classes and play groups run generally on traditional

free-play lines.

The studies were not designed to find out whether nursery school attendance gives advantages to one group over the other. The NFER did not include a control group of children remaining at home. What these studies were concerned with was an effectiveness of traditional preschool programmes. They were not primarily concerned with a comparison between those children who went to preschool and those who did not (Pilling and Pringle, 1978).

Another point worth mentioning is that the extent to which gains in preschool are built upon depends on the characteristics of a particular primary school. For instance in a descriptive report of West Riding Educational Priority Area project (Smith, 1975) indicated that the school which maintained better gains was one which enjoyed stable staffing and a good relationship with the community. The other primary schools experienced persistent staffing difficulties and the teachers were new to the school at the beginning of the project period. Because of this the results were not positive.

In summary, the evidence shows that children who have been to preschools make significant gains in intellectual and educational attainments as compared to those who have not been to preschool. Although the question of long term effect of early childhood education is still not settled, there is still some indication that the effect of such programmes lasts longer than most people have been led to believe, (Mwamwenda, 1985). What is more is that the influence

of early childhood education does not stop with the child's intellectual development but extends to other domains such as the social, emotional and physical aspects. There is evidence that this early education also influences the child's non-intellectual development as well (Eyken, 1971). But, what the findings suggest is that nursery school attendance is a worthwhile intellectual experience with children of all classes. The experience is good, but as Gray (1974) puts it, it cannot possibly be viewed as a form of inoculation whereby the child is immunised forever afterwards to the effects of inadequate and inappropriate home and school environments. Learning in early childhood is important as a foundation on which later learning will occur whatever the circumstances.

All the studies mentioned above were done in Britain or America. No study of this nature has been done in Zambia. This dearth of research information in the Zambian school system has partly necessitated the present research.

CHAPTER THREE

METHODOLOGY

This chapter deals with the methodology, the subjects in the sample, research instruments and the procedures used to collect data.

Subjects

The data presented in this chapter was collected from a sample of seventy-four primary schools children and twelve teachers. They were drawn from six primary schools in Lusaka. Two of these Nkwazi Trust School and Lake Road School are private schools whereas the other four Northmead Primary, St Patricks, Mumuni and Jacaranda Primary Schools are government schools.

Nkwazi Trust and Lake Road Schools are situated in low density areas that are inhabited by persons of high socio-economic status. These schools are therefore attended by pupils from the high socio-economic status group. Mumuni Primary and St Patricks Primary Schools are situated in high density areas of Lusaka. The people living here are of the low and middle socio-economic status group. So the pupils who attend these schools are of a mixed group. The last two schools Jacaranda and Northmead Primary Schools are situated in the medium density areas. The pupils at these schools are also from a mixed group of middle and low socio-economic status groups. All government schools are non fee paying.

Two classes were selected from each school. The subjects were selected on the basis of whether they went to preschool

or not. This information is summarised in the table below.

TABLE I
Summary of the Subjects in the Schools

School	No. in class	Preschoolers		N/Preschoolers	
		No.	Sel.	No.	Sel.
Nkwazi Trust School	20	16	10	4	4
Lake Road School	25	15	7	10	7
Northmead School	45	24	7	21	7
Jacaranda P. School	48	30	5	18	5
Mumuni School	40	17	5	23	5
St. Patricks P. School	40	28	5	12	5

Note: No. means number Sel. means selected

Research Instruments

English and Mathematics Tests was used to collect data from the children whereas a questionnaire was used to get information from the teachers. The English and Maths Tests were based on the syllabus that were obtained from the Ministry of Higher Education. The English Test comprised of questions set to reflect upon the pupils general ability in language. The exercises were set to check whether or not pupils were able to use standard English Grammar in writing and whether they could read and understand instructions. The test had five sections; A - G. (Appendix II)

Section A and B dealt with the treatment of verbs in sentences. These verb forms either dealt with past and present tense, auxiliaries and subject and verb agreement.

Section C dealt with the study of form with special

attention given to the inflectional endings for plurals. Section D dealt with vocabulary whereas Section E dealt with comparative and superlative forms. The remaining sections dealt with noun substitutes.

The Mathematics test (Appendix III) comprised problems that tested sequencing, number value, notation, subtraction, addition, multiplication, division, time, shapes and fractions.

Sections 1, 2 and 3 tested the children's counting ability and whether or not they are able to follow proper sequencing of numbers.

Section 4 and 5 dealt with number value and notation. This involved numbers in standard form and expanded form.

Sections 6 and 7 tested the children's ability to add, subtract, multiply and divide.

Lastly section 8, 9 and 10 dealt with shapes, time and fractions.

The Questionnaire for teachers comprised of two sections. The first section dealt with the child's personal data, the second section was further divided into two, one part dealt with the Mathematics subject while the other part dealt with the English subject.

The Questionnaire was necessary because sometimes children tend to be nervous during tests and this causes them to perform badly. The teachers' general assessment in this paper helped give a true picture.

Procedure

The research was conducted in February 1989. On production of the introductory letter from the University of Zambia, permission was granted by the Headmasters of the schools to conduct the research. To begin with the researcher explained the purpose of the study to the teachers involved. She also had brief informal interviews with them on their expectations of the study and also on the academic performance of the pupils. The researcher left questionnaires for the teachers to fill in after they had consulted past records and reports of the pupils.

To select the children who were to take part in the study, the teachers asked children who had been to preschool to put up their hands. Seven children were chosen from those whose hands were put up. Then the other seven were chosen from those who did not put up their hands (nonpreschoolers).

When administering the test, instructions were read out aloud and explained carefully. The test started when it was clear that instructions had been understood and that the children knew what to do in the question. Children were free to ask questions on the print and words they did not understand.

CHAPTER FOUR

DATA ANALYSIS

The hypothesis that preschoolers would perform better than non-preschoolers in English and Mathematics in early primary school was statistically analysed using a t-test. The Statistical Package for Social Sciences was used to compute the t-test.

End of year English and Mathematics test results for preschoolers and non-preschoolers were compared at grades 1 and 2 levels . Since the year had just begun one could not look at end of year results for grade 3, so the results of the test given by the researcher were used at this level. The results at this level were also compared.

The Teacher Answered Questionnaire was given numerical value by linking statements to a scale of 1 - 4.e.g 1 - stood for poorly, 2 - Fairly well, 3 - well, 4 - very well. The results between the preschoolers and non-preschoolers were also compared. The comparison was first done at each individual school and then the performance of all preschoolers was compared with that of all non-preschoolers. The results are presented in the tables that follow.

TABLE II

THE COMPARISON OF MATHS SCORES BETWEEN PRESCHOOLERS AND NON-PRESCHOOLERS AT MUMUNI PRIMARY SCHOOL.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	5	64.00	11.4			
		NPS	5	54.00	11.4	-1.39	8	.203
End of Term	2	PS	5	56.00	25.1			
		NPS	5	48.00	32.7	.48	8	.676
Self Set	3	PS	5	53.40	5.8			
		NPS	5	55.80	11.3	-.42	8	.648
Teacher Answered Questionnaire		PS	5	50.20	5.7			
		NPS	5	53.20	4.6	-.91	8	.392

PS =Preschool NPS = Non-Preschool prob.= probability

When the Mathematics scores at Mumuni Primary School were compared between the children who had been to preschool and those who had not been, the results at grade one and two levels did not indicate a statistical significance at $P < .05$. This can be seen in Table II.

The comparison of the English scores in Table III between the two groups shows a statistical significance in grade 1 at $t(8) = -2.35$, $P < .047$. But there was no statistical significance in grades 2, 3 and for the Teacher Answered Questionnaire

TABLE III
THE COMPARISON OF THE ENGLISH SCORES BETWEEN PRESCHOOLERS AND NON-PRESCHOOLERS AT MUMUNI PRIMARY SCHOOL.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	5	38.6	10.55			
		NPS	5	61.6	19.19	-2.35	8	0.49
End of Term	2	PS	5	60.00	21.5			
		NPS	5	74.00	14.7	-1.20	8	.264
Self Set	3	PS	5	56.80	14.72			
		NPS	5	53.00	24.64	.30	8	.773
Teacher Answered Questionnaire		PS	5	47.80	4.0			
		NPS	5	49.00	5.4	-.39	8	.703

PS = Preschoolers NPS = Nonpreschoolers prob.=probability

TABLE IV

THE COMPARISON OF MATHS SCORES BETWEEN PRESCHOOLERS AND NON-PRESCHOOLERS AT NORTHMEAD PRIMARY SCHOOL.

Test	Grades	Group	No. of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	7	57.71	8.5			
		NPS	7	48.85	8.96	2.20	12	.049
End of Term	2	PS	7	84.71	14.78			
		NPS	7	87.42	10.50	-.40	12	.699
Self Set	3	PS	7	93.29	10.7			
		NPS	7	89.59	10.2	.66	12	.520
Teacher Answered Questionnaire		PS	7	52.00	6.24			
		NPS	7	47.29	3.68	7.12	12	.111

PS= Preschoolers NPS=Non-preschoolers prob.=probability

The table above shows the "t" test results of the comparison of the Mathematics scores between the two groups at Northmead Primary School. The examination of the results shows a significant difference in grade 1 at $P < .05$. $t(12) = 2.56$, $P < .025$. Whereas the results of grades 2, 3 and in the Teacher Answered Questionnaire showed no difference in performance at all.

TABLE V
THE COMPRISON OF ENGLISH SCORES BETWEEN THE PRESCHOOLERS AND
NON-PRESCHOOLERS AT NORTHMEAD PRIMARY SCHOOL.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	7	94.71	10.73			
		NPS	7	84.71	10.21	2.56	12	.025
End of Term	2	PS	7	89.28	17.66			
		NPS	7	87.86	8.56	.19	12	.851
Self Set	3	PS	7	32.7	20.2			
		NPS	7	28.00	11.73	.52	12	.603
Teacher Answered Questionnaire		PS	7	59.71	6.60			
		NPS	7	55.71	5.46	1.2	12	.241

PS=Preschoolers NPS=Non-preschoolers prob.=probability

Table V presents the comparison of the English scores at Northmead Primary School. The difference reaches a statistical significance at $P < .05$ in grade 1. But this is not the case in grades 2,3 and in the Teacher Answered Questionnaire.

TABLE VI
THE COMPARISON OF MATHEMATICS SCORES BETWEEN PRESCHOOLERS
AND NON-PRESCHOOLERS AT NKWAZI TRUST SCHOOL.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
Aptitude Test		PS	10	67.20	2.7			
		NPS	4	54.75	1.5	8.45	12	.000
Self Set	3	PS	10	76.80	1.2			
		NPS	4	67.75	3.7	2.54	12	.026
Teacher Answered Questionnaire		PS	10	83.20	6.8			
		NPS	4	72.00	4.7	3.48	12	.008

PS=Preschoolers NPS=Nonpreschoolers prob.=probability

TABLE VII
THE COMPARISON OF ENGLISH SCORES BETWEEN THE PRESCHOOLERS
AND NON-PRESCHOOLERS AT NKWAZI TRUST SCHOOL.

Type of Test	Grade	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
Aptitude Test		PS	10	62.00	5.1	-.06	12	.054
		NPS	4	62.00	1.7			
Self Set	3	PS	10	92.8	2.7	3.54	12	.004
		NPS	4	79.50	11.8			
Teacher Answered Questionnaire		PS	10	87.20	5.3	3.42	12	.009
		NPS	4	78.00	3.7			

PS=Preschoolers NPS=Non-preschoolers prob.=probability

Tables VI and VII summarise the t test results of the Mathematics and English scores at Nkwazi Trust School. Unlike all the other schools Nkwazi Trust School does not give test to the children in grades 1 and 2 .The first test given to them is the Aptitude Test which determines whether or not they can be taken into school.Their next test is a mid year exam in grade 3.

However, when the Mathematics scores from the Aptitude Test are compared between the two groups there is a statistical significance at $P<.05, t(12)=3.45$ $P<.000$, whereas the scores in grade three do not reach statistical significance.The results for the questionnaire do indicate a difference at $P<.05$ $t(12)=3.48$, $P<.008$

The English scores form the Aptitude Test did indicate a difference and so did the results for the Self Set test and the questionnaire at $P<.05$, grade 3 $t(12)= 3.54, P<.004$, quetionnaire $t(12)= 3.42$, $P<.009$.

TABLE VIII

THE COMPARISON OF THE MATHEMATICS SCORES BETWEEN PRESCHOOLERS AND NON-PRESCHOOLERS AT JACARANDA PRIMARY SCHOOL

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	5	93.80	6.1			
		NPS	5	95.00	3.5	-.38	8	.715
End of Term	2	PS	5	97.40	5.8			
		NPS	5	94.00	4.8	1.00	8	.347
Self Set	3	PS	5	58.80	4.2			
		NPS	5	52.00	15.2	.96	8	.365
Teacher Answered Questionnaire		PS	5	50.80	9.8			
		NPS	5	50.00	6.2	0.4	8	.970

PS=Preschoolers NPS=Non-preschoolers prob.=probability

Tables VIII and IX present results of the Mathematics scores and English scores at Jacaranda Primary School. The results obtained at this school did not reach a statistical significance at any of the grade levels.

TABLE IX

THE COMPARISON OF ENGLISH SCORES BETWEEN PRESCHOOLERS AND NON-PRESCHOOLERS AT JACARANDA.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	5	90.00	10.00			
		NPS	5	80.00	8.3	.34	8	.740
End of Term	2	PS	5	92.00	8.3			
		NPS	5	80.00	8.3	-.19	8	.855
Self Set	3	PS	5	77.40	9.5			
		NPS	5	67.20	19.4	1.05	8	.324
Teacher Answered Questionnaire		PS	5	56.6	7.5			
		NPS	5	44.20	3.4	3.33	8	.010

PS=Preschoolers NPS=Non-preschoolers prob.=probability

Tables X and XI summarise the results at Lake Road School in the Mathematics and English tests.

The Mathematics test results did not indicate a difference that reached statistical significance at all the grade levels and in the questionnaire.

The English results recorded a difference in Grade 1 $t(14)=5.18$, $P<.000$. There was, however, no difference in performance between preschoolers and non-preschoolers in grades 2 and 3.

TABLE X

THE COMPARISON OF MATHEMATICS SCORES BETWEEN PRESCHOOLERS AND NON-PRESCHOOLERS AT LAKE ROAD PRIMARY SCHOOL.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	8	90.87	7.3			
		NPS	8	78.00	16.9	1.97	14	.069
End of Term	2	PS	8	91.25	6.6			
		NPS	8	81.62	15.26	1.63	14	.125
Self Set	3	PS	8	65.62	9.7			
		NPS	8	51.00	17.0	2.10	14	.054
Teacher Answered Questionnaire		PS	8	94.64	3.7			
		NPS	8	81.62	23.2	1.56	14	.141

PS=Preschoolers NPS=Non-preschoolers prob.=probability

TABLE XI
THE COMPARISON OF ENGLISH SCORES BETWEEN PRESCHOOLERS AND
NON-PRESCHOOLERS AT LAKE ROAD PRIMARY SCHOOL.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	8	84.62	10.7			
		NPS	8	42.12	20.5	5.18	14	.000
End of Term	2	PS	8	89.87	5.6			
		NPS	8	78.00	20.5	1.57	14	.140
Self Set	3	PS	8	89.0	10.26			
		NPS	8	75.62	17.0	1.90	14	.078
Teacher Answered Questionnaire		PS	8	98.12	2.5			
		NPS	8	81.62	27.6	5.18	14	.114

PS=Preschoolers NPS=Non-preschoolers prob.=probability

Tables XII and XIII show the results in Mathematics and English at St.Patrick's. None of the results in Mathematics indicates a difference that is statistically significant. In English the scores do not reach a statistical significance at any of the grade levels.

TABLE XII
THE COMPARISON OF MATHEMATICS SCORES BETWEEN PRESCHOOLERS AND
NON-PRESCHOOLERS AT ST.PATRICKS.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	5	87.00	5.7		8	
		NPS	5	85.00	7.9	.46	8	.659
End of Term	2	PS	5	59.80	4.6		8	
		NPS	5	68.40	5.5	.43	8	.677
Self Set	3	PS	5	65.60	11.9			
		NPS	5	69.00	3.9	-.61	8	.561
Teacher Answered Questionnaire		PS	5	67.40	11.7			
		NPS	5	60.00	13.8	8.4	8	.426

TABLE XIII
THE COMPARISON OF ENGLISH SCORES BETWEEN PRESCHOOLERS AND
NON-PRESCHOOLERS AT ST. PATRICKS.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	5	60.00	5.5			
		NPS	5	63.20	6.4	-.69	8	.513
End of Term	2	PS	5	54.80	4.5			
		NPS	5	55.40	3.9	-.22	8	.829
Self Set	3	PS	5	67.40	11.7			
		NPS	5	60.60	13.8	.84	8	.426
Teacher Answered Questionnaire		PS	5	58.00	7.0			
		NPS	5	58.60	5.8	-.15	8	.887

PS=Preschoolers NPS=Non-preschoolers prob.=probability

Table XIV shows us the "t" test results for all schools in Mathematics. The results in grade 1 did reach a statistical significance at $P < .05$, $t(72) = 3.02$, $P < .003$. But the results obtained in grades 2 and 3 did not indicate any difference at all. This was also the case in the questionnaire.

Table XV shows the "t" test results for all the schools in English. The results obtained in grade 1 reached statistical significance at $P < .05$, $t(72) = 2.75$, $P < .007$. However, the results obtained in grades 2 and 3 do not indicate a difference. This was also the case in the questionnaire.

TABLE XIV
THE COMPARISON OF MATHEMATICS SCORES BETWEEN PRESCHOOLER AND NON-PRESCHOOLERS IN ALL SCHOOLS.

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	40	80.65	7.5			
		NPS	34	79.11	2.8	.40	72	.691
End of Term	2	PS	40	79.63	20.3			
		NPS	34	75.56	22.7	.72	72	.468
Self Set	3	PS	40	64.65	11.0			
		NPS	34	56.02	13.5	3.02	72	.003
Teacher Answered Questionnaire		PS	40	67.70	20.1			
		NPS	34	59.70	18.3	1.77	72	.081

PS=Preschoolers NPS=Non-preschoolers prob.=probability

TABLE XV
THE COMPARISON OF ENGLISH SCORES BETWEEN PRESCHOOLERS AND NON-PRESCHOOLERS IN ALL SCHOOLS

Type of Test	Grades	Group	No of Cases	Mean	S.D	t value	D.F	2 tailed prob.
End of Term	1	PS	40	68.77	26.00			
		NPS	34	52.85	23.1	2.75	72	.007
End of Term	2	PS	40	79.26	19.9			
		NPS	34	78.36	17.7	.18	72	.854
Self Set	3	PS	40	75.82	17.5			
		NPS	34	72.58	17.6	.078	72	.437
Teacher Answered Questionnaire		PS	40	72.17	19.6			
		NPS	34	62.23	19.6	2.17	72	.034

PS=Preschoolers NPS=Non-preschoolers prob.=probability

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The results of this study showed that there was a difference in the performance between preschoolers in English and Maths in early primary school. The difference was not as outstanding as expected, but it was significant enough to warrant support for the hypothesis that, early primary school children who had been to a preschool would significantly perform better in English and Mathematics than those without this experience.

When the results between the two groups in each school were examined there was a strong support for the hypothesis regarding the English subject. Those children with a preschool educational background did better in English than those without this background. But the difference in performance in Mathematics was not so big. The results on the whole are consistent with those of Douglas and Ross (1964), Cohen and Bagshaw and Baruth (1973), Duff (1980), Bronfenbrenner (1974), Smith (1975), Klaus and Gray (1972) and the findings of the British Educational Priority Areas Project. One major difference is that in this study, unlike in the studies just mentioned, the difference was stronger in the English subject than in the Mathematics subject. The difference in the latter subject was only evident in two schools (Nkwazi Trust and Northmead Primary Schools). Whereas four schools indicated a significant difference in English. (Lake Road, Nkwazi Trust, Mumuni and Northmead Primary Schools).

One reason that could justify the difference in English at these four schools is the type of preschool that the children attended. The children at these schools attended structured preschools such as Longford Nursery, Little Big Horn, Lake Road Preschool and St Pauls Nursery (run by the UCZ Church). Structured preschools emphasize cognitive and scholastic development and their medium of instruction is English unlike the other preschools with a Traditional approach whose emphasis is physical development and free play. The latter preschools are encouraged to use the language that the children understand most. Another reason that could be said for Nkwazi and Lake Road having good results in English is that the children that go to these schools come from upper class families whose first language is English or those who use English as a medium of communication in their homes. According to Holt (1967) children will learn to speak the language that most people speak around them.

The reasons for the minimal difference in the Mathematics results could be attributed to the child rearing practices in Zambian culture. A child brought up in the village or in an urban area is exposed to mathematical concepts such as those of counting adding and subtracting. This is done through games and the chores they do. For example, in games such as "Chiyenga" and to be a good "Sherpherd" the children are required to know how to count their stones, goats, sheep and cows. Without this basic mathematical concept they would not know when one goes missing. Those children with this kind of

exposure cannot be expected to be at a disadvantage in mathematics even if they have not been to a preschool.

The fact that the difference in performance between the preschoolers and non-preschoolers in both subjects is not large could further be attributed to a number of factors. A few of these could fall under the categories : a) the type of preschool attended

b) lack of continuity

c) conditions of schools

We shall comment on each one of these in turn.

Type of Preschool Attended

The type of preschool attended by the child has a lot of bearing on his or her academic performance in primary school. Some use the traditional approach which emphasizes the physical development of the child, free play and child directed activities. Others use the structured approach which emphasizes the cognitive and scholastic development of the child. Taking this into consideration not all children who go to preschool should be expected to have an academic advantage over those who do not attend preschool. The situation in Lusaka is such that about two-thirds of the preschools are community schools which are based on the traditional approach and are run by the local authorities. As indicated earlier we cannot expect children from these preschools to have academic advantage over non-preschoolers.

Preschools in Zambia as mentioned earlier can be divided

into categories of Day Nurseries, Community Preschools, Day Care Centres and Creches. Each of these offers different services to the children (Zimba & Mumba, 1989). Community preschools and some of the day nurseries were established for the mere purpose of making money, they do not offer much in terms of social, emotional and educational skills. They provide few (if any) experiences that prepare children for learning. This is so because they use unqualified and poorly paid teachers who are not aware of early childhood development and education (Zimba & Mumba, 1989). These preschools usually have grossly insufficient equipment in terms of furniture, learning and teaching materials. The facilities and premises they use tend to be overcrowded, open and unprotected. When community and welfare halls are used larger intakes are encouraged at the expense of quality.

1 Chiyenga- This is a Zambian game played by young children. It is played using stones, it requires the children to count, add, subtract and multiply.

2 Sherpherd- The sherpherd is expected to count his sheep, goats and cows before he takes them to the pastures. He is also expected to count them before returning.

The organisation, management and administration of these preschools are also quite unsatisfactory. The language used is a mixture of Zambian languages and English because the language of instruction is not decided upon. This implies that even though some children spend a lot of time in these schools they do not acquire academic advantage over non-preschoolers.

Lack of Continuity

Most of the government primary schools that the children go to after attending a well structured preschool do not build on the foundation that has already been laid.

There are differences in the degree and kind of mental stimulation offered by these primary schools. Sometimes even though a child is well equipped with pre-requisite academic skills, the repetition of work done before may bring about frustration and negative attitudes towards school. Such children may eventually forget what they learnt. This is because the subjects in the curricula are not planned to respond to individual differences in ability. They are planned in such a way that all children are expected to attain the same narrowly defined skills within the same time limit. For instance, if the syllabus stipulates that children should be taught to count from one to twenty and if some of the children can already count upto one hundred, their teachers continue to teach them how to count up to twenty. The syllabus does not make provision to teach those who are advanced something more stimulating and challenging. According to Tizard (1976 a,b) if a child is not challenged to master difficulties, to explore and to discover, he will have a narrow range of experience. This means that he will not have the necessary information needed for concept formation. He will develop fewer problem solving skills and thus operate at a very simple level. In short, his normal growth will not be nurtured. This could account for the lack of difference in

performance for some preschoolers who went to structured preschools.

Conditions of the Schools

The deteriorating conditions of some of the government schools visited could be an attributing factor to the results. Most of the government schools in the sample were characterised by poor physical conditions and lack of instructional materials. Due to lack of maintenance most of the school buildings were in disrepair despite rehabilitation by the World Bank-funded project Zambia Education Implementation Project Unit. This was shown by broken windows, leaking roofs, broken cisterns and dry unused swimming pools. At Northmead Primary School there were hardly any desks and chairs for pupils to sit on. This was because people from nearby shanty compounds had vandalised the school and stolen from it. In fact, this problem of thefts and vandalism in the schools is a nation-wide one. In a Zambia Daily Mail article of July 11 1990, Beenwell Mwale discussed the issue of thefts and vandalism in the schools all over the country. He pointed out that teachers and students spent a lot of time removing human excreta from classrooms when they reported for school. In addition he reported that window panes, toilet cisterns and pans, doors, water pipes and taps had either been stolen or smashed by vandals in most schools. The students whose desks and chairs were stolen were forced to sit on the floor. Such an atmosphere was not conducive to learning. Children need an environment that is comfortable, safe and

stable every day of the year. Besides the deteriorating physical conditions of the government schools is a problem of overcrowding. Classes in some of the schools in the sample had as many as sixty pupils in one room. In cases such as these, it was difficult for the teacher to give individual attention to pupils who need it. It even became difficult to notice those who needed it. Moreover, there was a shortage of textbooks in the government schools visited. Children huddled together to share the few books that were available. In such situations it was difficult for the teacher to give homework because there were not enough textbooks to go around.

Teacher absentism was another problem observed. When teachers were absent for a number of days and there was no substitute, two classes were put together making 120 pupils in one room. This type of atmosphere may only contribute to the lowering of standards previously acquired.

Conclusion:

From the results of the present study one can conclude that early childhood education does have substantive social and academic influence upon those who go through it. It would seem that it is not a waste of time for parents to send their children to preschool, for even if results may not be evident in early primary they may be there in latter grades. The question of the long term effect of early childhood education has not been settled, but there is indication that the effect of such programmes last longer than many people have been led to believe. Early childhood education in Zambia must be given greater attention as a priority in education of the child than at present moment. A good beginning could be the answer to numerous educational problems encountered later on by the children.

Recommendations

In view of the results of the study and what has been discussed the following recommendations are made for considerations.

1. There is need to expand early childhood programs to cater for those who are presently not served. Such a program should include a curriculum that emphasizes cognitive and scholastic development.
2. Qualified teachers should be employed to enhance the quality of preschool programs. In the absence of appropriate qualifications preschool staff should be closely supervised by experienced early childhood education experts.
3. The streaming of grade ones should be based on whether or not the children have pre-requisite academic skills. This would enable a teacher to build on the foundation that has already been laid at preschool.
4. For further research on preschool education, especially in regard to its sociocultural and socioeconomic aspect

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SECTION B:

This section deals with the academic performance of the child:

Part I

Mathematics

1. Is the child able to count and write numerals from

- (a) 1 - 100? (b) 1 - 500? (c) 1 - 1000? (d) 1 - over
1000?

2. How well is the child able to sort objects into sets according to some criterion such as size, colour and shape?

- (a) Very well
(b) Well
(c) Fairly well
(d) Poorly

3. Is the Child able to add and subtract numbers within the range of.....

- (a) 1 - 100?
(b) 1 - 500?
(c) 1 - 1000?
(d) 1 - over 1000?

4. How would you rate the child's ability to compare mass length and capacity?

- (a) good
(b) fair
(c) poor

5. How would you rate the child's ability to relate events with various times of the day such as morning, noon, afternoon and night?

- (a) very good

(c) fair (d) poor

6. Which multiplication tables has the child built up to add? Is the child able to apply them.

- a) 2 to 4 times table
- b) 2 to 6 times table
- c) 2 to 8 times table
- d) 2 to 10 times table
- e) 2 to 12 times table

7. How well does the child solve problem involving addition, subtraction and multiplications?

- a) Very well
- b) well
- c) fair
- d) poor

8. Would you say the child is good at dividing whole numbers in the range of.....:

- a) 1 to 100?
 - b) 1 to 500?
 - c) 1 to 1000?
 - d) 1 to over 1000?
- by 2,3,4,5,6,10,20,50,100.

9. How good is the child at carrying out practical shopping and marketing activities using the Kwacha and Ngwee.

- a) not good
- b) good
- c) very good
- d) excellent

10. Is the child able to tell time in

- a) Full hours?
- b) Full and half Hours?
- c) Full, half and quarter hours?
- d) Full, half quarter hours and five minutes

PART TWO

English

1. How would you rate the pupil's ability to speak English

- a) Poor
- b) Fair
- c) Good
- d) Very Good

2. How would you rate the pupils ability to write in English

- a) poor
- b) fair
- c) good
- d) very good

3. How would you rate the pupil's ability to understand English

- a) poor
- b) fair
- d) good
- d) very good

4. Would you describe the pupil's vocabulary as

a) Limited

47

b) average

c) above average

d) Excellent

5. How well is the child able to write the names of the different parts of the body?

a) Very well

b) well

c) fairly

d) poorly

6. Would you rate the child's ability to form sentences in present tense, and present continuous tense as

a) good

b) fair

c) poor

7. Is the child able to read?

a) words

b) phrases

c) sentences

d) paragraphs

8. At what level would you rate the child's reading and comprehension ability?

a) beginners' b) intermediate c) advanced

9. How well is the child able to describe activities that take place at home?

a) Very well

b) well

c) fairly

d) poorly

10. Is the child able to unscramble short sentences.

a) very able

b) able

c) fairly

d) not able

ENGLISH TEST

A. Write these sentences in present continuous. Look at the example given.

e.g. My brothermy leg (break)

My brother is breaking my leg.

1. My Mothera cake (make)

2. We.....to school (run)

3. The mena house (build)

4. The boya bicycle (ride)

5. The girlthe window (open)

6. The teacherEnglish (teach)

7. The woman.....cabbage (cut)

8. Wein a classroom (sit)

9. The childrenin the garden (play)

10. The old mana cup of tea (drink)

B. Choose the correct word to put in the space.

1. Maryto school everyday (walk, walks)

2. Ito my friend everyday (speak, speaks)

3. Wetea every morning (drink, drinks)

4. My motherbread everyday. (buy, buys)

5. My fathera newspaper every morning (read, reads)

6. My fatherme pocket money (give, gives)

7. Hefootball every Saturday. (play, plays)

8. Ito church every Sunday (go, goes)

c. Write the plural of the words given below:

Singular	Plural
1. boy	boys
2. toot	
3. leaf	
4. brush	
5. tomato	
6. sheep	
7. man	
8. woman	
9. orange	
10. toy	

D. Write down the opposites of the words given below:

1. e.g. Dry wet
2. up
3. come
4. short
5. small
6. soft
7. thin
8. night
9. slow
10. clean

E. Complete as shown in the example:

1. thin thinner thinnest
2. small
3. big
4. short

5. long
6. hard
7. tail

F Use either of these words:

mine, their, ours, his, hers

1. This is my pencil. It is mine
2. This is our classroom. It is
3. These belong to Mary. They are
4. This ball belongs to Peter. It is.....
5. This car belongs to the Mwales. It is

G Write the sentences using either, always or never?

1. I go to church on Sunday.
e.g. I always go to Church on Sunday.

2. I play with bad boys
3. We come to school on Saturday.
4. The sun shines at night.
5. I bath everyday

COUNTING : Write the next number in the blank

1. [A] 29, 30 [D] 429, _____ [G] 99, _____ [J] 3429, _____
 [B] 59, _____ [E] 259, _____ [H] 199, _____ [K] 6199, _____
 [C] 73, _____ [F] 673, _____ [I] 999, _____ [L] 5999, _____

2. Pretend you are counting. Fill the blanks.

[A] 26, 27, 28, _____, _____, _____, _____, 33, 34, _____

[B] 53, 54, 55, 56, _____, _____, _____, _____, _____

[C] 95, 96, 97, _____, _____, _____, _____, 102, 103

[D] 526, 527, 528, _____, _____, _____, _____, 533, 534, _____

[E] 853, 854, 855, 856, _____, _____, _____, _____, _____

[F] 295, 296, 297, _____, _____, _____, _____, 302, 303

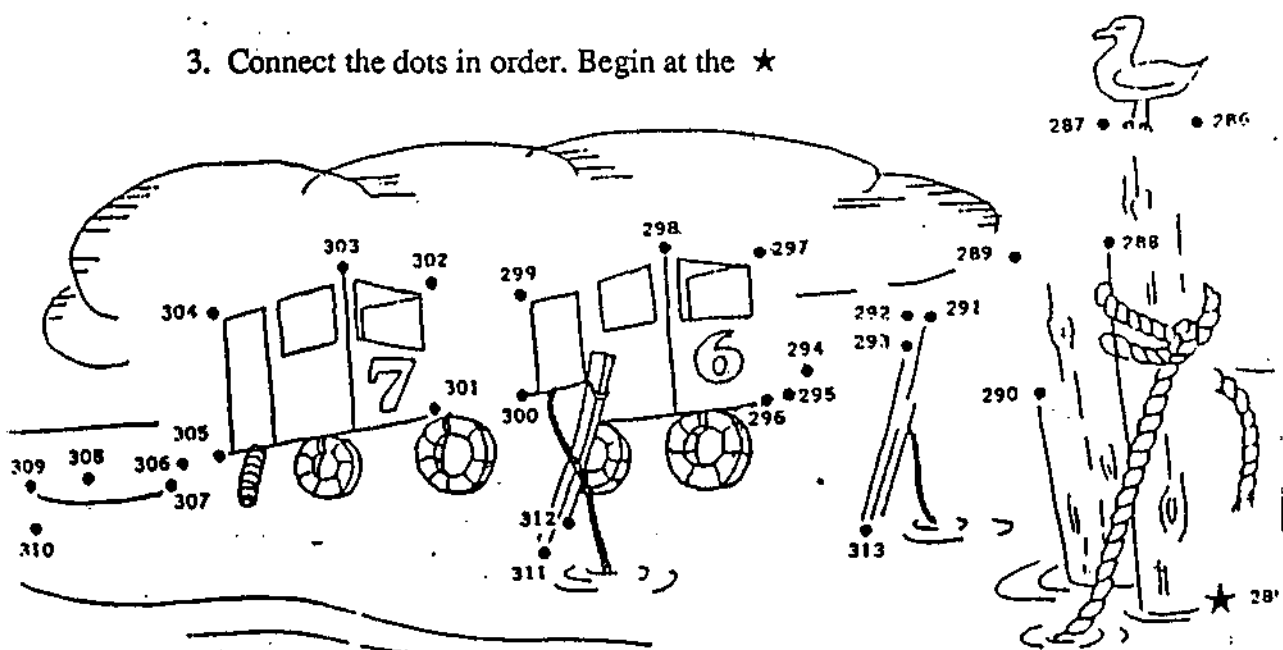
[G] 495, 496, 497, 498, _____, _____, _____, _____, _____

[H] 994, 995, 996, 997, _____, _____, _____, _____, 1002

[I] 1994, 1995, 1996, 1997, 1998, _____, _____, _____, _____

[J] 4295, 4296, 4297, _____, _____, _____, _____, 4302, 4303

3. Connect the dots in order. Begin at the ★



4. Write the correct numeral above each _____.

Look at the example given

459 means _____ hundreds plus _____ tens plus _____

817 means _____ hundreds plus _____ tens plus _____

306 means _____ hundreds plus _____ tens plus _____

542 = _____ H + _____ T + _____

923 = _____ H + _____ T + _____

170 = _____ H + _____ T + _____

5. Write the correct numeral above each _____.

Write the numbers in expanded form.

185 = _____ + _____ + _____

302 = _____ + _____ + _____

451 = _____ + _____ + _____

715 = _____ + _____ + _____

682 = _____ + _____ + _____

359 = _____ + _____ + _____

943 = _____ + _____ + _____

860 = _____ + _____ + _____

Solve

SUBTRACT

$$6. \quad \begin{array}{r} 87 \\ - 34 \\ \hline \end{array} \quad \begin{array}{r} 74 \\ - 50 \\ \hline \end{array} \quad \begin{array}{r} 95 \\ - 41 \\ \hline \end{array} \quad \begin{array}{r} 72 \\ - 61 \\ \hline \end{array} \quad \begin{array}{r} 86 \\ - 44 \\ \hline \end{array} \quad \begin{array}{r} 97 \\ - 55 \\ \hline \end{array}$$

ADD

$$\begin{array}{r} 32 \\ + 5 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ + 21 \\ \hline \end{array} \quad \begin{array}{r} 40 \\ + 40 \\ \hline \end{array} \quad \begin{array}{r} 38 \\ + 20 \\ \hline \end{array} \quad \begin{array}{r} 33 \\ + 25 \\ \hline \end{array} \quad \begin{array}{r} 41 \\ + 13 \\ \hline \end{array}$$

MULTIPLY

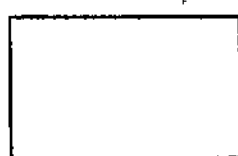
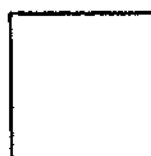
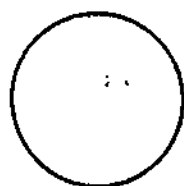
$$7. \quad \begin{array}{l} 4 \times 4 = \\ 5 \times 5 = \\ 3 \times 4 = \\ 2 \times 5 = \\ 3 \times 2 = \\ 4 \times 1 = \end{array}$$

$$\begin{array}{l} 2 \times 4 = \\ 3 \times 5 = \\ 4 \times 3 = \\ 5 \times 2 = \\ 4 \times 5 = \\ 5 \times 1 = \end{array}$$

DIVIDE

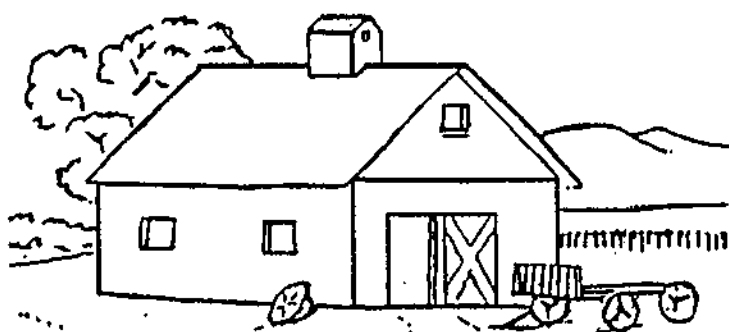
$$\begin{array}{l} 12 \div 4 = \\ 9 \div 3 = \\ 12 \div 3 = \\ 6 \div 2 = \\ 8 \div 4 = \\ 10 \div 2 = \end{array}$$

8. A CHANGE OF PLACE

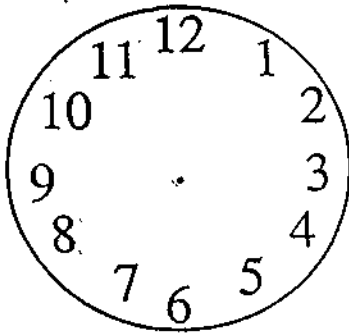


Circle Triangle Square Parallelogram Rectangle

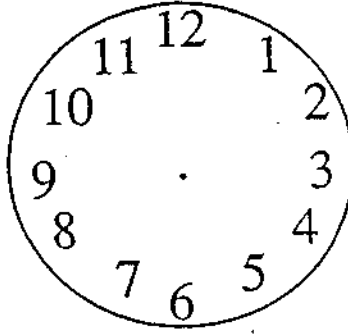
Each of the geometric figures above appears in the picture. Find them make them darker with your pencil, and write the name of the figure beside the figure.



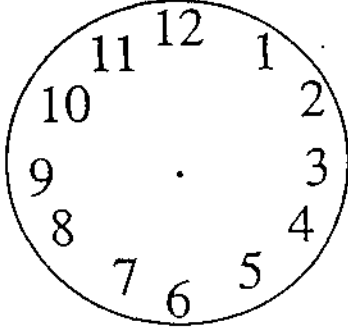
9. Draw both hands on each clockface to show the time given.



12:10

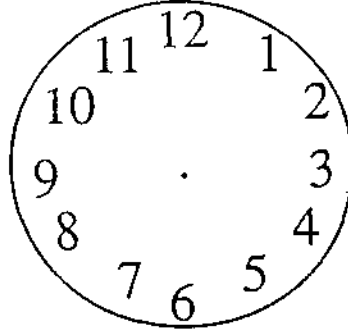
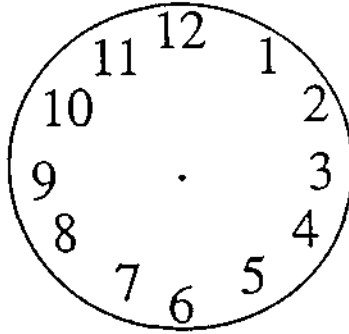
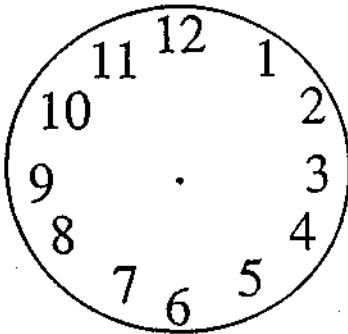


half past 3

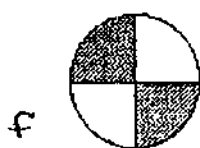
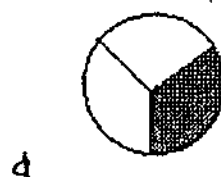
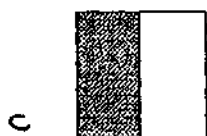
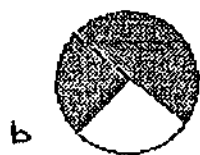


a quarter to eight

Write the time shown on each clockface



10. Write a fraction to name the shaded part of each figure.



A ring is drawn around some of the objects in each set.
Write a fraction for those objects inside the ring.

