

https://dspace.org/

# Preschool year and improved school attainment : study of Birth-to-Twenty cohort.

**Luxomo, Viwe Gift**

**2010-03-12T10:25:04Z**
http://hdl.handle.net/10539/7661

Downloaded from a DSpace repository. https://dspace.org/

# PRESCHOOL YEAR AND IMPROVED SCHOOL ATTAINMENT: STUDY OF BIRTH-TO-TWENTY COHORT

**Viwe Gift Luxomo**

**Research report submitted to the School of Education,**
**Faculty of the Humanities,**
**University of the Witwatersrand, Johannesburg,**
**in partial fulfillment of the requirements**
**for the Masters degree in Education**
**(Policy, Planning and Management)**

**Johannesburg, 2009**

**ABSTRACT**

The demand for access to education for all children has in recent years become a focus for many countries, including South Africa. In this context, preschool attendance has also gained prominence, tagged conspicuously to attempts for improving the system's internal efficiency. There is, however, little empirically based work done in South Africa that has made a case for quantifiable educational benefits of early childhood development (ECD).

This study has made use of the largest and longest longitudinal birth cohort study dataset on the continent of Africa (Birth to Twenty), to measure statistically significant correlations between attendance at preschool and grade repetition. Although preschool attendance made a statistical significant point difference of 6.6%, in-depth analysis of the data show that this difference is arguably too little for effecting systemic changes.

The study recommends that further research is required to identify those factors affecting preschool effectiveness. It also recommends the need for strategies that can be used to manage the transition from preschool to grade 1.

## Declaration

I declare that this research report is my own unaided work. It is submitted for the degree of Masters in Education (Policy, Planning, and Management) at the University of the Witwatersrand, in Johannesburg. It has not been submitted before for any degree or examination at any other university.

_____

(Name of candidate

_____ day of _____, 2009

**ACKNOWLEDGEMENTS**

I wish to express my sincere appreciation and gratitude to the following:

This study would not have been possible without the guidance, supervision, mentoring, and support of Professor Brahm Fleisch.

I am particularly grateful to the Birth to Twenty Research Programme for allowing me to use their dataset providing South African based evidence on preschool benefits.

I would also like to thank:

The National Research Foundation (NRF) for financial assistance and Wits Foundation for awarding me the Peter Hunter Bursary.

Elaine Unterhalter for her useful comments.

Mario Pillay for the technical support on the use of Excel for graphs and tables.

Helen Perry for assistance with statistical insights.

Finally I wish to express my gratitude to my mother and father for their prayers, support and encouraging words giving me strength to study further.

This report is dedicated to my nephew, Inganathi Luxomo to inspire him to go beyond what I have achieved.

**TABLE OF CONTENTS**


| | | Pages |
|---|---|---|
| | Abstract | 2 |
| | Declaration | 3 |
| | Acknowledgments | 4 |
| | Table of contents | 5 |
| | List of Tables | 7 |
| | List of Graphs | 7 |
| | Abbreviations | 9 |
| CHAPTER ONE | Introduction | 10 |
| 1.2 | Research Questions | 14 |
| 1.3 | Rationale | 14 |
| CHAPTER TWO | The Literature | 16 |
| 2.1 | Introduction | 16 |
| 2.2 | Review of the Longitudinal Studies | 16 |
| 2.3 | African Research | 25 |
| 2.4 | Analysis and Critique | 29 |
| CHAPTER THREE | Research Design | 32 |
| 3.1 | Introduction | 32 |
| 3.2 | Study Objective | 32 |
| 3.3 | Study Context | 32 |
| 3.4 | Data Collection | 33 |
| 3.5 | Data Analysis and Limitations | 35 |
| CHAPTER FOUR | Analysis and Finding | |
| 4.1 | Profile of Bt20 | 36 |

| | | |
|---|---|---|
| 4.2 | Enrolled in ECD Programmes | 49 |
| 4.2.1 | New grade 0 Entrants | 53 |
| 4.2.2 | Grade 0 Analysis | 54 |
| 4.3 | Gender, Race, Maternal Education and Place of Birth | 57 |
| 4.3.1 | Gender | 57 |
| 4.3.2 | Race and Gender | 58 |
| 4.3.3 | Maternal Education | 60 |
| 4.3.4 | Place of Birth | 63 |
| 4.3.5 | House Ownership | 65 |
| 4.4 | Impact/consequences of preschool attendance | 67 |
| CHAPTER FIVE | Conclusion | 75 |
| 5.1 | Introduction | 75 |
| 5.2 | Summary of the Major Findings | 79 |
| 5.3 | Future Research | 82 |
| | References and Bibliography | 83 |
| Appendix 1 | | 89 |
| Appendix 2 | | 90 |

## List of Tables


| | |
|---|---|
| Table 1: | Percentage for the number of South African children between ages 0-7+ enrolled in ECD sites per province |
| Table 2: | Statistically significant benefits of the Perry Preschool Project |
| Table 3: | Racial Profile of Bt20 cohort |
| Table 4: | Repetition distribution by race, in the Bt20 cohort |
| Table 5: | Gendered enrolment and repetition in the Bt20 cohort |
| Table 6: | Maternal Education and Repetition |
| Table 7: | Place of birth profile in the Bt20 cohort |
| Table 8: | Accommodation type and repetition in the Bt20 cohort, 2005 |
| Table 9: | Household types without basic household assets in the Bt20 Cohort |
| Table 10: | Preschool and Non-Preschool Enrolment in the Bt20 cohort |
| Table 11: | Grade 0 Attendance profile in the Bt20 cohort |
| Table 12: | Comparison of children attending grade 0 and those that do not attend |
| Table 13: | First enrolment in grade 1 |
| Table 14: | Shows preschool attendance and non-attendance by gender |
| Table 15: | Preschool attendance and non-attendance by race |
| Table 16: | Preschool attendance, non-attendance and repetition rates by maternal education |
| Table 17: | Place of birth and preschool attendance |
| Table 18: | Household ownership and preschool attendance |
| Table 19: | Preschool enrolment (PS) and non-enrolment (NPS) and repetition |


**LIST OF GRAPHS**


| | |
|---|---|
| Figure 1: | Opportunity Cost Graph |
| Figure 2: | Comparison of mother's educational level |
| Figure 3: | Comparison of the Accommodation and Repetition in the Bt20 cohort, 2005 |

Figure 4: Grade 0 repetition trend in the first three years of enrolment

Figure 5: Maternal education, preschool attendance and grade repetition

Figure 6: Place of birth, preschool attendance and repetition

Figure 7: Number of repeating learners per grade

Figure 8: Comparison of overall repetition for the children that attended preschool and those who did not

**ABBREVIATIONS**

| | |
|---|---|
| ABET | Adult Basic Education and Training |
| Bt20 | Birth-to-Twenty |
| CBC | Community-Based Centres |
| CREATE | Consortium for Research on Education, Access, Transitions and Equity |
| DoE | Department of Education |
| DoSD | Department of Social Development |
| ECD | Early Childhood Development |
| EFA | Education for All |
| FET | Further Education and Training |
| GET | General Education and Training |
| GPI | Gender Parity Index |
| HET | Higher Education and Training |
| MDG | Millennium Development Goals |
| NEPI | National Education Policy Investigation |
| NGO | Non Government Organisation |
| NQF | National Qualifications Framework |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| UPE | Universal Primary Education |
| SBC | School-Based Centre |
| SFA | Schooling for All |
| SSA | Sub-Saharan Africa |

## CHAPTER ONE

Introduction

---

The demand for education to be accessible to all children has become the buzzword in the developing world in recent years. Practices seeking to limit educational opportunities to a minority group, typical in South African history, can no longer be sustained. Resurgence of education in the global developmental agenda has prioritised the lower level of schooling (preschool and primary). Of the six goals listed in a policy statement signed by 189 countries in Jomtien (1990), promoting Education for All (EFA), expansion of early childhood care and education took first place. Following the widely held notions that young children develop psychological and social aptitudes that will inform their adulthood, active learning and stimulation at a young age are seen as essential in preparing children to benefit more from the schooling programme (UNESCO, 2007).

Incidentally, emphasis on education at a globally landscape collided opportunistically with the dawn and later post-independence fever in South Africa in which education was identified as central for human development. Therefore ECD recognition in the country took place at the same time as the worldwide recognition of the importance of this sector. In South Africa, however, ECD is premised on politics of equity and equality, aimed at giving fair life chances to all. It epitomises human rights and centrality of childhood in human and societal development (Williams and Samuels, 2001). During the transitional years National Education Policy Investigation (NEPI) tabled a report in 1993 for the ECD sector. Among other things, the report recommended state funding and called for increased equitable expenditure on

ECD, a service that was welcomed by the leading liberation movements at the time (Rule, 2005:125).

The challenge confronting the forthcoming government was and remains establishing quality ECD programmes that can be extended to all South Africans, including those confronted by the scourge of poverty. *Impilo project* was launched in Gauteng along with similar pilot projects nationally, to take stock of the state of ECD. The aim was particularly to provide new ECD understanding, using an inter-departmental provisioning approach as a workable solution for achieving much with manageable fiscal strain on the education department. In 1999, enrolment from children from birth to seven years reached 26% in Gauteng, as shown in *Table 1*. This table excludes those children from centres that were not registered with the government departments at the time when the audit was conducted. Over 75% of the children in these ECD programmes were privately funded, thus children from poor households may have had difficulties in accessing such programmes. It is noteworthy that male and female children had equal access; however, this was not the case for children with physical disabilities (Biersteker, 2001).

**Table 1: Percentage for the number of South African children between ages 0-7+ enrolled in ECD sites per province.**

| Table 1: Enrolment of children 0 - 7+ (as at May/June 2000) as a percentage of the provincial child population | |
|---|---|
| Province | % enrolled for ECD |
| Eastern Cape | 13% |
| Free State | 20% |
| Gauteng | 26% |
| Kwazulu-Natal | 15% |
| Mpumalanga | 11% |
| Northern Cape | 16% |
| Limpopo | 8% |
| North West | 10% |
| Western Cape | 25% |
| Total | 16% |

Source: Williams, Samuels et al (2001).

Growing public awareness of ECD benefits led to the drawing up of White Paper 5 on Early Childhood Development in 2001. The paper promotes the development of ECD practitioners in terms of career paths and site management. Other initiatives that sought to accelerate the process included the development of norms and standards, implementation of Grade R, new funding models for ECD, and attempts to integrate ECD provisioning among government departments. While there has been considerable policy activism, research has not always kept pace with these developments. More robust research based on empirical evidence on educational benefits of ECD within South Africa has not been rigorously tapped.

South Africa prides itself on high enrolment rates in primary schooling years. Access to primary school is conceived as a right enshrined in section 29 of its Constitution. However, there have been concerns on whether increased access improved educational attainment. It is has been argued extensively in the literature that most South African children are in school

but learn very little (Taylor and Vinjevold, 1990; Fleisch, 2008; Crouch, 2005 and others). Critics cite the quality of teaching and learning, low achievement, under-preparedness and other household-related factors as causes for concern. Poor quality of learning or lack of what is termed meaningful access can manifest in many forms: one of the consequences is grade repetition. Efficient schooling, which would enable learners to progress from grade to grade at a suitable age with fewer repetitions, remains an unfulfilled desire. Literature has evidence that repetition is more harmful than beneficial, and is very expensive financially (Jimerson et al, 2002; Lam et al, 2007; Motala, 1995).

The rate of repetition in the country has been estimated at seven percent and is particularly reflected among the African youth. In a study conducted in Western Cape, Anderson, et al (2003) estimated that by age 20, African children on an average would have failed grades 1.5 times. The most vulnerable are those who do not live with both parents. Adherents of ECD (Porteus, 2004; Evans, 1996; Biekerster, 2007) believe that the early schooling context best explains vulnerability to repetition in later years, and that the best corrective measure is therefore to invest more time and fiscal resources on the early years of child development. In South Africa, it is hoped that a preschool year in a grade R class could compensate somewhat for many of the cognitive vulnerabilities.

Although a number of scholars, among them Padayachee et al, 1994; Evans, 1996; Porteus, 2004; Biersteker, 2001; and Myers, 2006, have contributed to the policy development and policy debates, little work has been done on the relationship between ECD and improved performance in the primary schools. Countrywide research has focused largely on the state of ECD, while the impact of ECD attendance on educational attainment and repetition remains underresearched. The focus of this study is restricted to demonstrating the statistical link

between attending a pre-school programme and Grade 0/R, and the rate of grade-to-grade repetition for children in primary school and the early years of secondary school.

## RESEARCH QUESTION

This research is concerned with the impact of preschool participation on internal efficiency of primary schooling. Using the Birth-to-Twenty cohort study data; the study asks the following question:

To what extent does attending a preschool programme and a grade 0 reduce the repetition rate for children in grade 1-9 (compulsory schooling years)?

## 1.3 RATIONALE

This research has the potential to add new evidence concerning the impact of attending preschool programmes, and to add to our understanding of the factors that may contribute to meaningful schooling access. In addition, it may help to assess the extent to which an initial investment in early childhood programmes may improve children's educational experiences through ensuring that children progress through the basic education phase. It is therefore hoped that this study may contribute to cross-national debates on the benefits of ECD programmes. Given the international debate on the effects of preschooling, with the policy direction favouring attendance at preschools as a means to address backlogs in the internal efficiency of primary schooling, the lack of empirical evidence generated in the South African context means that policy makers often rely on international rather than South African research. It is precisely this gap in the literature that this study seeks to address.

Throughout this study, the terms ‘preschool’ and ‘ECD’ are used interchangeably, to avoid repetition of words and also to locate the study within current debates in the field. The former term is favored as it focuses attention on educational interests, while the term ‘ECD’ is generally broader in scope since it includes broader social and health-related factors.

# CHAPTER TWO

## Literature Review

### 2.1 Introduction

The question about the relationship between preschooling and improved educational, social, and economic outcomes emerged as an aspect of the struggle against poverty in the United States (US) during the 1960s. The two most famous initiatives and related studies were the High/Scope Perry Preschool and Head Start programmes. At the time, little was known about widespread benefits of early childhood learning. Since the 1970s there has been a proliferation of longitudinal studies that demonstrated the benefits of preschool participation, but research of this nature is not yet well-established in developing countries. Drawing on questions raised by earlier studies, this research examines the impact on grade repetition of attending preprimary school programmes.

The literature review therefore begins by examining the research on the impact of ECD; it then turns to the studies on the impact of ECD on grade repetition in particular. The literature review takes into account studies from developed as well as developing countries, with specific attention to the work that has been published on the topic in South Africa.

### 2.2 Review of Longitudinal Studies

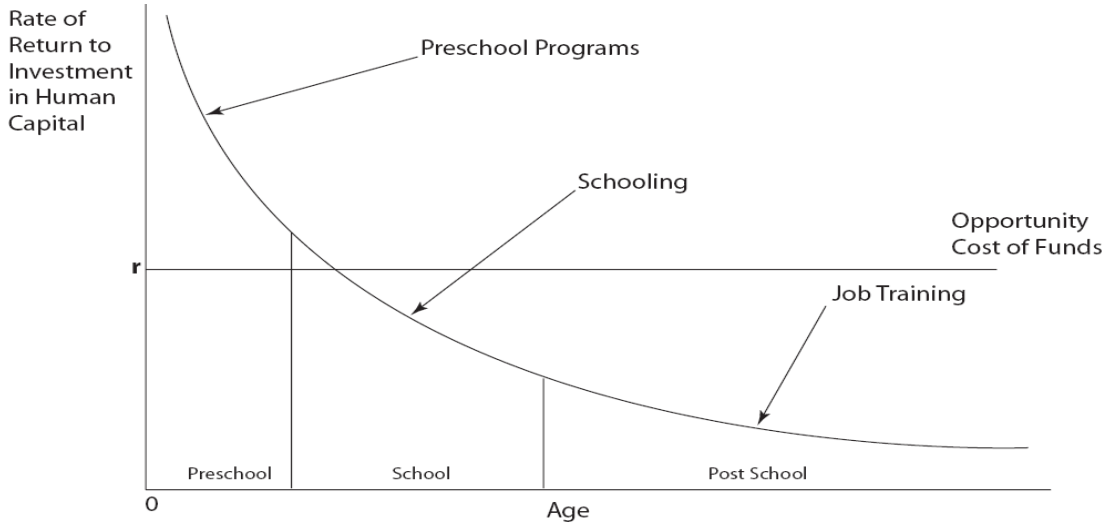
Although the literature on this subject is replete with studies on the benefits of preschool participation with relation to educational attainment in the later years of schooling, there is

little research work that addresses this question in South Africa. Nevertheless, in recent years, preschooling has received priority among different government departments as well as the private sector. According to education budget analysis by province in South Africa, ECD expenditure is projected to grow at an average of 44.2% from R932 million in 2007/08 to R3.2 billion in 2010/11, as provinces attempt to reach universal Grade R by 2010. Wildeman and Lefko-Everett (2008), however, caution that huge budgetary allocations do not necessarily imply certainty of improved quality for Grade R. Developing quality centres that can impact positively on the learning experience in the later school career requires much more dedication among ECD stakeholders. Proponents of preschooling consistently, harmoniously and unambiguously cite evidence that preschool attendance by poor children improved school achievement (Magnuson, Ruhm, and Waldfogel, 2007; Ruhm, and Waldfogel, 2006; Davison, 2004; Infobrief, 2006), school enrolment (Magnuson and Waldfogel, 2005), reduced drop-out (Schargel and Smink, 2001), and improved social adjustment in school (Rimm-Kaufman, Pianta, 2000).

Longitudinal studies suggested that pre-schooling had both economic and social benefits into adulthood, including reducing criminal activities and increasing employment opportunities (Barnett, 1995; 1992). Of the ten large-scale studies reviewed by Barnett, eight consistently recorded that there were statistically significant relationships between grade repetition and preschool attendance. The failure to establish this relationship in the remaining two is accounted for perhaps by low repetition rates. Heckman (2006) locates the debate on investing in disadvantaged children on two levels: equity and economic efficiency. He asserts that fairness and social justice is promoted together with productivity in the economy. It has been claimed persuasively in the literature on ECD benefits that early interventions promote meaningful experience of schooling by increasing school performance both individually and

collectively and raising the quality of the workforce. Figure 1 shows that economic returns received after investing in a preschool programme are far higher than the initial investments. Such investments reduce cost incurred in schooling and post-schooling years, since the preschoolers are likely to fare much better through the schooling process. The opportunity cost graphs in Figure 1 show a constant, meaning that preschool always proves beneficial to the participants.

***Figure 1: Opportunity Cost Graph***




Rates of Return to Human Capital Investment Initially Setting Investment to be Equal Across all Ages

*Source:* Carneiro & Heckman, 2003.

In addition to the benefits discussed above, reduction is seen in crime and teenage pregnancy as well as in welfare dependency. Pre-schooling is perceived as contributing positively to higher earnings and social attachment. Children growing up without early cognitive stimulation may have cumulative cognitive deficits polarising educational attainment. The consequences of the deficit can be starkly shown by the widening achievement gap between

the disadvantaged and advantaged children as they move from grade to grade (Heckman, 2006).

Children from poor households are particularly vulnerable to poor performance at school. It is likely that they receive little cognitive stimulation from home, and may be exposed to few resources that promote development. Heckman further lists other non-cognitive factors as equally important in explaining success at school (2008). These factors include motivation, sociability, ability to work with others and focus on tasks, self-regulation and esteem, time preference and health. This perspective is supported by Li and Poirier (2003) who claim that "family child-rearing environment has both structural and predictive effects on early childhood outcomes, it has a sizeable negative and positive effects on behavioral problems index and math/reading test score".

Working in the United States, Davidson et al (2004) argue that without addressing cognitive deficits in early childhood it would be almost impossible to close the achievement gap between the poor black children and their wealthier white peers. Ignoring the problem in hope of attending to it in later years (through tutoring, after-school programmes, Saturday school or summer school) is often unsuccessful. Davidson illustrates this point by using the analogy of a journey: He says that education is like a journey. Those who fall behind in academic attainment may find it difficult to catch up as those ahead do not wait for them. Accordingly, drilling children with learning deficits or cognitive gaps through extra curricular programmes could be ineffectual. Thus, the best catch-up strategy is to invest in young children through preventative measures rather than in those programmes perceived as having 'therapeutic' effects on learning backlogs. In this line of thinking, wisdom from the past suggests that prevention is better than cure.

Lynch (2004:6) reviewed the cost benefits in four longitudinal studies, in which it was found that the benefit ratio varied from 3.78:1 to a high of 8.74:1. While it may be very costly to invest in early learning, high benefits justify high costs. Consistently, the estimates show that high quality preschool programmes may cost a significant amount of money, but in turn they save money spent on remedial and special education, criminal justice and welfare. They may also increase income earned and taxes paid (Lynch, 2004:21). *Table 2* lists a series of preschool benefits from the Perry Preschool Project, which revealed a statistically significant disparity in repetition between children attending preschool and those who did not attend. The repetition rate is less for preschoolers (17%) than the non-preschool children (38%), preschool also increased the chances of graduating in high school, other benefits are related to social mobility including the increase of employment rate by 12% point difference, more ($453) monthly earnings, and the reduction welfare dependency and public assistance confirming the argument advanced by Heckman (2006).

**Table 2: Statistically significant benefits of the Perry Preschool Project**

| | Preschoolers | Non-Preschoolers |
|---|---|---|
| Grade retention or Special education, age 10 | 17% | 38% |
| High School graduation, age 27 | 71% | 54% |
| Arrested five or more times | 7% | 35% |
| Arrested for drug-related offenses | 7% | 25% |
| Arrested, age 27 | 57% | 69% |
| Average number of arrests, age 27 | 2.3% | 4.6% |
| Earn $2,000 or more per month, age 27 | 29% | 7% |
| Employment rate | 71% | 59% |
| Average monthly earning, age 27 | $1,219 | $766 |
| Homeownership | 36% | 13% |
| Own second car | 30% | 13% |
| Receive Welfare or social services | 59% | 80% |
| Receive public assistance, age 27 | 15% | 32% |
| Single mothers | 57% | 83% |

Source: Barnett (1993); Lynch, (2004)

The longitudinal studies, namely the Carolina Abecedarian Study, the High/Scope Perry Preschool Study and Chicago Child-Parent Center Study, have shown that quality preschool programmes have lasting effects on participants for intellectual performance and academic achievement that stretch to later schooling years. According to Schweinhart and Fulcher--Dawson (2006:5), research work from diverse orientations, including neuroscience, consistently shows that children's experiences before the age of five have a profound influence upon the rest of their lives. Neuroscience research shows that children raised in dysfunctional homes get exposed to stress at a young age due to emotional abuse or neglect, which leads to the impairment of brain development. Children growing under such conditions begin school with a huge disadvantage and are thus more prone to failure (Schweinhart & Fulcher-Dawson, 2006).

Brain researchers (Shaklee, 2002; Shonkoff and Phillips, 2006) also argue that the most critical period for human development is between birth and the age of three. It is said that brain cells build up synapses between each cell, causing rich interconnected neural networks. These connections are believed to be prompted by daily experiences. According to this research, at the age of two, synaptic networks are as rich as those of adults; by age three they are twice as dense as those of adults. In teenage years, unused dormant synapses are eliminated, in the process weakening the cerebral organising structure, with resultant implications for cognition. These studies are cited by ECD researchers in their case for preschool attendance, suggesting that these programmes could not only reverse cognitively related risk factors among the young children, but could also raise capacity of the workforce, thus reducing unemployment and welfare dependency, criminal justice costs and teenage pregnancy.

Loeb et al (2007) examined the intensiveness of preschool programmes in terms of time. Their argument indicates that there are certain stages in child development where cognitive tools are more rapidly developed. This study found that the best time to send a child in a preschool is between the ages of two and three, as greatest academic benefits can be garnered during this period. Children who entered preschool before reaching the age of two did not display greater pre-reading or math skills; instead their scores were lower than those who started between ages of two and three. Entering the ECD programmes earlier was also associated with behavioral problems for those coming from both low- and high-income households. Most importantly the study found that increased time on task benefited children from poorer households more than it did the middle class children. In conclusion, Loeb et al (2007) caution, however, that even though they may be noticeable cognitive benefits for most children, universal preschool access may not contribute in a dramatic way to closing early gaps in learning. Non-cognitive household based factors could detract significantly from preschool investments.

While it recognizes other benefits of preschool participation, the current study is concerned primarily with educational outcomes. It therefore reviews two of the longitudinal studies, the High/Scope Perry preschool and Head Start programmes. The Perry Preschool is an ongoing longitudinal study that began in 1962 in Michigan, providing a 2½ hours weekday classroom experience to 3-4 year old children, and 1½ hours of home visit to mother and child. The programme conducted a study of a group of 123 'high-risk' African American children, of whom fifty-eight were assigned to a high-quality preschool programme, and sixty-five to a control group that did not attend the programme. Participants were from low socioeconomic status, had low IQ scores (between 70 and 85, said to be the borderline for mental impairment), with no organic deficiencies, and were at high risk of failing school (Parks,

2000). Project staff collected data annually on both groups, from age 3 through 11, and again at ages 14, 15, 19, and 40, with only 6 percent missing. When the two groups were compared, the programme group outperformed the non-programme group on several intellectual and language tests between preschool years and age 7. The disparities in achievement were also evident in later years (9, 10, and 14) and in literacy when tested at age 19 and 27. It was observed that fewer individuals in the non-programme group graduated from high school, at ages 15 and 19. It was also the programme group that had a positive attitude towards schooling. Employment opportunities were more available to programme participants, whose earnings were up to 20 percent higher. At age 27, earnings of participants were higher, as shown in *table 2*, while at age 40, disparities in earning were up to 27 and 35 percent (Schweinhart and Fulcher-Dawson, 2006; Lynch, 2004). Such findings came to guide and influence decisions on the part of policy makers to support preschool participation for all learners.

Perry Preschool placed the emphasis on quality, that is, teachers were required to obtain a bachelor's degree or equivalent. In addition, small class sizes of 5-6 children were advocated in order for the programme to be effective and sustainable. The Perry study showed that a quality programme could compensate for perceived at-risk factors, reduce achievement gaps and reduce academic failure. This programme was heavily funded at $6, 000 per child, a factor often cited as a limitation in the model. Publicly funded programmes, even in developed countries, can hardly afford the amount of money expended in the Perry Study. This model is best suited to private provisioning of pre-school programmes in South Africa. Already the country is making progress in turning around lower publicly funded (17%) and higher privately owned community and home-based centres (49% and 34% respectively) to 85% publicly funded ECD centres by 2010. While Perry's study is useful for purposes of

drawing lessons for 'best' practices,, adapting US or UK evidence in Africa ought to be done with much caution as there are significant variations in context including economic strength for such high quality programmes (Penn, 2004).

Head Start is a federal programme aiming at improving learning skills, social skills and health status of the poor, so that they can begin schooling at a similar level to more advantaged children (Currie and Duncan, 1995:341). Unlike Perry's Study, Head Start is publicly funded and has covered a broader population. Ever since the programme was formed, it has served more than 20 million children. Head Start began in 1964 as a part of 'war' against poverty, and aimed to reach as many children as possible. It served to provide preschool children from low-income families with emotional, social, health, nutritional, and psychological support. Early Head Start results revealed, among other things, that children exhibited “significant changes at age 3 on standardized assessments of cognitive development and receptive language”, were “more attentive to objects”, and displayed “less negative behavior towards parents and less aggression towards peers" (Richter, 2006). The programme also helped parents to change their parenting style in the home environment, so that this became 'conducive' for stimulating children's cognitive development. There was less physical punishment by fathers (Richter, 2006).

Criticisms have been levied that cognitive gains made in Head Start programmes fade out over time due to lower quality primary schooling. It would be difficult to separate Head Start benefits from those of high (or par) quality primary schools and may be interesting to know how do non-Head Start children attending high (or par) quality primary schools perform. Such may be the preoccupation of those who seek to ascribe early learning to a broader

community or villages, wherein range of elders provide educational support and care, thus broadening child rearing scope (Porteus, 2004).

## 2.3 African Research

In sub-Saharan Africa, there has been a steady increase in pre-primary education enrolment, from 5.1 million in 1999 to 7.4 million in 2004. This increase is partly attributable to the influence of the Millennium Development Goals (MDGs) and EFA (Garcia et al, 2008). While it would appear that many countries in the region (SSA) are committed to establishing ECD programmes, only 12 percent of preschool age children (between 3 and 6) were enrolled in preschool in 2004 (ibid).

In an important study that links preschool attendance to repetition, Jaramillo and Mingat (2006; 2008) estimated that 50% coverage of pre-school for at least two years in a typical African country could imply 6.2% reduction in repetition rate. It is estimated that the frequency of grade repetition can be reduced from 20.4% - 14.2% and that retention rate may improve from 65% - 80%. These researchers suggest that this may result in a gain of 20% in the primary school resource expenditure and also improvement of the school efficiency as the grade progression norm would improve.

A brief history is useful to provide context on how ECD provisioning evolved. In South Africa the first advent of early childhood development (ECD) can be traced to the fight to lessen infant mortality rates in the 20$^{th}$ century; however, formalised centres only began in 1930s (Porteus, 2004:346). This was followed by initiatives geared towards providing care and education outside home: in day-care centres and nursery schools. By 1940, there was

willingness to integrate preschool programmes into the national education system, albeit differentiated as nursery schools and crèches. The latter were largely construed as providing custodial care while the former were envisioned as providing educational functions, with limited accessibility due to high costs. Trained teachers gradually became a privilege of the middle class children whose parents could afford increased fees (Williams and Samuels, 2001). Given South Africa's apartheid history, access was skewed according to population group, with a higher percentage of white children having access to quality services as compared to black children (Biersteker, 2001).

The ECD responsibilities at the time were shared between two government departments. The Department of Social Welfare catered more for day care centres, which were extended across racial divides, while the Education Department provided for nursery schools, rarely accessible to black children. Similarly, the current provisioning for ECD divides its tasks in the same way. Ages 0-5 are the responsibility of the Department of Social Development whereas the Department of Education is largely concerned with the 6-9-year-old cohort, covering the grade R class in the reception year.

Training courses for African teachers were restricted from 1958, while those of whites continued. Starkly differing investments in teacher training characterised this period. The state would not invest in preschool education for black Africans until the 1980s, due to high drop-out and failure rates of learners. The De Lange report of 1981 emphasised the importance of pre-primary education in preparing children for entry into formal education. While the recommendations of the report were welcomed in principle, the state actually thinned its involvement in early childhood education. By 1990, lower level teacher training provided by provincial education departments was phased out completely, opening up an

opportunity for NGOs to flourish in this area. This short history shows that preschool provisioning was inequitable both in terms of facilities and content posing challenges of reform in transition years.

In the years preceding the democratic elections of 1994, ECD received a new meaning, premised on integrating nurturing, educative and supportive environments for the majority of South African children. Educare was adopted as a strategy to ameliorate inadequate, segregated, fragmented uncoordinated and disorganised provisioning in both educative and physical care features of ECD. It was during this critical time in South African history that the children in the Birth-to-Twenty study cohort were in their preschool years.

Within the specifically South African context, Garcia et al (2008) recorded that the gross enrolment rate for preprimary programme was 33% in 2004, with a repetition rate of 7% (1998-2002) of the total enrolment. The DoE (2005) data show that in primary schooling years, repetition is highest in grades 1 and 7. Extending the argument first advanced by Porteus (2004), Richter (2006) argues that by increasing preschool attendance through instituting grade R, it is too late to reap the benefits associated with preschooling. While grade R is better than no preschool, it is uncertain whether the frequency of repetition during primary school years and the high dropout rate in secondary school could be curbed by a reception year.

Beginning school at ages of 5 or 6 is perceived as appropriate as it is assumed that most children begin to learn to read around this age. But some are inclined to think that a great deal of learning happens before formal schooling. Schweinhart and Fucher-Dawson (2006:5), for example, argue that the abilities to listen and speak precede abilities to read and write. It is

held that quality preschool programmes are fundamental to all other educational endeavours and that they provide solid foundation for later learning. In some informal conversations, teachers identify lack of academic skills as a major obstacle children face when they enter school. There are myriads of factors that may compromise school readiness, including academic weaknesses, problems with social skills, difficulty in following instructions, and problems with independent and group work (Heckman, 2008).

A UNICEF report (2006) attributes the high level of non-participation in ECD programs in South Africa to poverty. The report claims that many families cannot afford to pay for ECD services for their children. This rationale has led to an integrated system of ECD provisioning among the three government departments (social development, health and education), in an attempt to forge quality early childhood services that are accessible and affordable to all, with a clear vision to cater for the children's basic needs. The shared responsibility, however, may not always impact effectively on its targeted population, as imperatives among departments may differ. Ages 0-4 years are known as pre-grade R, and private providers largely offer services in this cohort. The last year of pre-schooling has been incorporated into mainline schooling. Even though, in principle, the Department of Education (DoE) is part of the integrated plan for provision in the 0-4 year old cohort, the leading department is in fact Social Development (DoSD). This may cause the nature of provision to be more welfare orientated than educational.

Biersteker and Dawes (2008) deduce that poor schooling outcome is indicative of the fact that South African schools are unable to uproot entrenched learning deficits. However, there is some evidence, though very minimal, indicating that early childhood education has significant benefits. Short and Biersteker (1984) observed school progress of a group of

South African children who had participated in Early Learning Centres (ELC), until they were 15 and 17 years old. The writers found that participation in ELC compensated for social-class differences in school readiness. The earlier studies conducted in South Africa were consistent with international literature, but only three articles cited by Biersteker and Dawes (2008) looked at the relationship between preschool attendance and repetition.[1]

## 2.4 Analysis and Critique

While the majority of studies of preschool programmes have shown positive results, these studies have not been without criticism. The earliest critics for literature on early childhood development emerged in 1930s, questioning the cost-effectiveness of the programmes. They alleged that early education programmes required resources beyond those that parents could provide (White and Buka, 1987). In South Africa, it is held that such concerns could be ameliorated through an integrated approach of provisioning, involving more stakeholders, such as NGOs, the private sector and the government. This approach could help to address the cost problems. Other concerns deal with the question of quality. While preschool relevance is acknowledged, it is often cautioned that inadequate programmes may fail to impact as expected (Myers, 2006; Evans, 1996). There are disagreements, however, on the notion of preschool quality. Some assert that it is the quality of the preschool that has modest long-term effects on children's patterns of cognitive and socio-economic development. A Swedish study demonstrated that child and family characteristics tended to moderate the influence of the quality of the preschool (Hagekull and Bohlin in Peisner, Feinberg et al, 2001).

[1] These articles are difficult to find.

Campbell (1995) claimed that effects of deprivation may still persist, notwithstanding relatively good programmes. While participants could be declared school-ready in terms of the ability to read and write they may however be retained in the same grade due to behaviour problems. None of the critics reviewed refute the significance of preschool, but merely caution against the utopian view that such programmes could solve poverty, bad behaviour, and economic backlogs all at once.

Early years of life are seen as critical since they afford opportunity for both growth and vulnerability to harm. The old wise counsel: *"train a child in a way he should go and when he is old he will not depart from it"* seems to be consistent with the literature on early childhood. Anderson et al (2003:32) assert that the cumulative experience is the determiner of children's developmental well-being. Self-regulation, establishing early relationships and the development of specific skills are seen as critical dimensions in the development of a child. In modern times comprehensive preschool programmes were designed to respond positively to children's cognition and school readiness needs. Whereas preschool influence transcends its primary educative aim to other socio-economic, the former must always take precedence. Hence, Porteus (2004:341) cautioned against warehousing where children are caged in classes without ventilations, seated still in rows, hesitant to play, in less stimulating environment that is suppressive of curiosity or inquisitive mind. Too much emphasis on physical/emotional care (safety, nutrition, and/or love), to the disregard of intellectual care is not satisfactory.

The literature shows a consistent relationship between attending preschool programmes and later school achievement. It is however doubtful if this relationship remains the same on all circumstances and contexts. One of the features of the extant literature is that it assumes a

fairly uniform basic quality in the provision of early childhood services. While it may be so elsewhere in South Africa the quality of services provided tend to differ perceptibly according to geographical location (urban and rural, or suburb and township) and class.

# CHAPTER THREE

## Research Design

### 3.1 Introduction

This chapter outlines the methodology of the study. This is done by describing objectives, the research approach to the study, and Bt20 dataset and lastly acknowledges the limitations.

### 3.2 Study Objective

The objective of this study is to test the hypothesis about the relationship between preschool attendance and improved educational attainment. The study makes use of the quantitative research method to analyse a sample of 2093 participants. In this study, the plan is to address the question: Does pre-schooling improve school internal efficiency? The question examines the extent to which there is a statistical correlation between preschool attendance and reduced repetition rates in the Birth-to-Twenty study cohort using Jaramillo and Mingat (2006) study as a benchmark.

### 3.3 Study Context

On his release from prison on February 11 1990, Nelson Mandela urged the youth of South Africa to go back to school, as the country's future was bleak without education. Years of political turmoil had caused instabilities in township schools and had brought an end to the school career of some young children. This situation had to end. About seventy-one days

following Mandela's release, the School of Health Sciences based at the University of the Witwatersrand in Johannesburg began a longitudinal cohort study in Johannesburg metropolitan public hospitals. Children born within a period of forty-eight days were recorded in a long term study which would follow them up to the age of twenty. The study documented socio-economic, socio-political, demographic and nutritional circumstances and the manner in which these impacted on South African children and their families.

In order to undertake a quantitative study on effects of enrolment in a preschool year, the study uses data from the Bt20 cohort study dataset. The Bt20 study is prized as the largest and longest longitudinal birth cohort study in the continent. The population in the Bt20 study comprises children born in public hospitals in the Greater Johannesburg region between 23 April and 8 June of 1990. The city of Johannesburg is the largest of the six municipalities in Gauteng, registering 36.5 percent of the province's residents (Stats, 2005). For the purpose of this particular study, data from the various waves of data collection from years 4-5 to 16 years are used, in addition to the data from a survey conducted of participants in year 12 of the study. The focus is on analysis of attendance in a preschool programme or Grade 0, patterns of initial enrolment in Grade 1, annual promotion, and repetition.

### 3.4 Data Collection

The pilot studies, research goals, and enrolment methods of Bt20 have been documented in detail in several publications (Yach et al., 1991; Richter et al, 1995; Richter et al, 2004; Richter et al, 2007). The Bt20 cohort was defined by the timing of a singleton birth within a defined period (from 23rd April to 8th June 1990), as well as continued residence for at least six months after the birth of the child within Soweto-Johannesburg. This area covered

approximately 200km$^2$ at that time, and included close to 3.5 million people, with about 400,000 informal houses or shacks. Data collection waves began in the third trimester of pregnancy, and continued through delivery, 6 months after delivery, and child years 1, 2, 3,-4,5,7-8,9-10,11-12,13,14,15, and, currently, 17 years of age. From 13 years onwards, data was collected every 6 months, once at a Bt20 data collection office in Soweto or Johannesburg and once at the family's home.

Data was collected from parents and children, using a wide range of indicators: socio-economic status, community, household and family circumstances; parental health; child growth, health, well-being and education; biomarkers of growth, nutrition, substance use; and more recently, sexual and reproductive health (Richter et al., 2007). The original cohort consisted of 3,273 children and their families. There were up to 5,000 notified births in the area at the time of enrolment. However, infants born to rural women who had come to Johannesburg to give birth and subsequently returned to their rural homesteads were excluded (Norris et al, 2007).

Attrition rates from the original 3,273 children have been around 3% per annum, contrary to expectation based on similar cohort studies in North America and Europe. Richter et al (2004) note that there has been no discernible loss of identifiable vulnerable families or children. On the contrary, better-off families are more likely to have dropped out of the study. A related bias was introduced in the recruitment phase, as the small group of predominantly white children born in private hospitals was excluded from the study. As such, the Bt20 cohort is representative of African and Coloured children who were born in the metropolis in 1990, and continued to live there and in the surrounding environment. Given the high level of

in-migration, the sample does not necessarily represent the population currently resident in the city.

When the demographic characteristics between the in-contact group and those either lost to follow-up in the first year of the study (1990) or lost in subsequent years was compared, no statistically significant difference was found for gender, gestation period, births at a public or private facility and birth weight. Birth in public and private institution is seen as a socio-economic proxy (Norris, Richter and Fleetwood, 2007).

The Bt20 has made it possible for the researcher to observe the patterns of attendance both in preschool and school and the number of times repeated. This has enabled the researcher to test the hypothesis on benefits of preschools specifically on grade repetition; since the study is longitudinal, trends can be observable.

### 3.5 Data Analysis and Limitations

In an analysis of the data, the study will calculate central tendency and distributions (spread) for the dependent (initial entry and repetition rates) and independent variables (preschool attendance and Grade 0) (McMillan and Schumacher, 2006:488). Value for attendance is obtainable and patterns of repetition can be measured to estimate the relationship through correlational statistics. It is however, cautioned that the preoccupation with relationships between variables has a limitation, in that, “causation can never be determined from knowing that a relationship exist” (Stein and Thorkildsen, 1999:26). This study however sought to analyse pattern of attendance than causation (neither do findings permit it) and educational attainment in terms of grade progression.

# CHAPTER FOUR

## Analysis and Findings

Does ECD make a difference? The longstanding research on preschooling, emerging from local and international experience, brought forward claims that there are enormous benefits gained from well-organised preschool programmes, providing appropriate stimulation, nutrition, care and health services. The listed benefits include increasing primary school enrolment, enhancement of school performance, lowering of repetition and drop-out rates, reduction of juvenile crimes, reduction of remedial, medical and welfare costs and improved social and economical productivity indicators. For the purposes of the current research, only repetition is considered; it is, however, by no means ranked as more salient than others but is the focus of the study.

Based on the quantitative analysis of the Bt20 dataset, the above question is explored in greater detail. This chapter begins with providing a statistical profile of the children in the Bt20 study, with the focus on repetition, then moves to exploring the patterns of the attendance at ECD both preschool (0-5) and Grade 0. The third section examines the patterns and then the relationship between ECD attendance and school success, as measured progressively through schooling. The researcher shows that there is but a modest positive statistical relationship between attending preschool and rapid progression. Repetition rates are reduced slightly rather than drastically for the preschoolers in this study.

### 4.1 Profile of Bt20

In this section, the researcher provides a profile of learners in the Bt20 study. This is done by analyzing the new entrants, racial composition of the study population, gender balance of the children, maternal education, the place of residence, home/house type, whether the parents own the house, and basic household assets like television and refrigerator. In the absence of other reliable information, the place of residence and household assets are useful indicators of the socio-economic status of the children in the study, **e**specially since both locally and international studies show that children from poorer homes tended to perform lower than their peers from well-to-do households.

**Table 3: Racial Profile of Bt20, 2005 - comparison of the Bt20 cohort in 2005 with total births in geographic area in 1990**

| Race | Number | % of total | % of total births in 1990 (N=5449) |
|---|---|---|---|
| White | 135 | 6.5 | 12 |
| African | 1682 | 80.4 | 74 |
| Coloured | 241 | 11.5 | 10 |
| Indian | 35 | 1.7 | 4 |
| Total | 2093 | 100 | 100 |

*Source: Bt20*

*Table 3* reveals significantly that the study population is more or less racially representative of the Gauteng population. As noted in other Bt20 study sources, African and Coloured children are slightly over-represented. According to the figure presented by Statistics South Africa (StatSA) in the 2001 Census, the racial composition in the province is Africans 73.81%, White 19.9%, Coloured 3.82% and Indian 2.47%. It is also important to note that no statistical inferences can be made for white and Indian children, given the small sample size and under-representation, both in provincial demographics and birth that occurred in the area

at the time. This can be attributable to attrition by well-to-do families and the fact that the study consisted mainly of children born in public hospitals.

**Table 4: Repetition distributed by race in the Bt20 cohort study**

| *Race* | *Repeat* | *Not Repeat* | *% Repeat* | *% Non-Repeat* | *Grand Total* |
|---|---|---|---|---|---|
| White | 14 | 121 | 2 | 8.7 | 135 |
| African | 587 | 1095 | 83 | 79 | 1682 |
| Coloured | 100 | 141 | 14.1 | 10.2 | 241 |
| Indian | 6 | 29 | 0.8 | 2.1 | 35 |
| **Total** | **707** | **1386** | **100** | **100** | **2093** |

*Source: Bt20*

Repetition is entrenched among the Coloured and African children. When combined, the two racial groups account for 97.2% of the total repetition in the study. The percentage of repetition for African children is the highest, due to their demographic profile, but their rate of repetition (34%) is less than that of their Coloured peers (39%). This is contrary to the findings of other studies conducted in the Western Cape, in which the rate of repetition was higher for African children than for Coloureds (Lam et al, 2007). It has been argued that racial differences in achievement are inextricably intertwined with the human capital that children bring to school. While it may be so, it is not certain whether household factors, including parents' income, are similar in Gauteng and Western Cape for Coloureds and Africans. It may even be that Coloured schools in the Western Cape are better-off that those based in Johannesburg. Whereas race is a useful indicator for the grade repetition and progression in the post-apartheid South Africa, the percentage point difference is only 5%. Analysis based on gender offers a more nuanced interpretation.

**Table 5: Gendered enrolment and repetition in the Bt20 cohort**

| *Gender* | *Repeat* | *Not Repeat* | *% Repeat* | *% Non-Repeat* | *Grand Total* |
|---|---|---|---|---|---|
| Boys | 440 | 568 | 62.2 | 41 | 1008 |
| Girls | 267 | 818 | 37.8 | 59 | 1085 |
| Total | 707 | 1386 | 100 | 100 | 2093 |

*Source: Bt20*

Although racial disaggregation has limitations, valid inferences can be made about gendered patterns of repetition, given the relatively even distribution by gender. In some societies in the developing world, educational opportunities are prioritised more for boys than girls. It is however praiseworthy to affirm that in South Africa the enrolment of females is in similar proportions to their male peers (DoE, 2005). The gender parity index (GPI) in the Bt20 study cohort registered 1.08, slightly above the Gauteng's GPI (1.05) in 2005. The figures for boys (48.2%) and girls (51.8%) approximate 50 percent with a slight difference of about 3.7% higher for girls, contrary to the notion of gender biases and unequal access to schooling (*see table 5).* It is commendable to observe that 99.8% of the participants attended school at one point in their lives.

In Lewin's (2007) analytical outline, which uses zones of exclusion, zone 1 refers to those children that have never been to school. Evidence from the Bt20 cohort study shows that there is high rate of school participation for all children in South Africa, irrespective of their race, gender or place of abode. This finding is in line with earlier studies that have argued that the problem of access is very marginal in the country (Perry and Arends, 2004). The concern is rather what happens behind the classroom doors and whether enrolled children have what CREATE calls meaningful access.

While schooling access is high, repetitions in progression from one grade to the other continue to be prevalent, in spite of deracialised curriculum, increased budget, and policy interventions that discourage repetition, including age-grade norms. More than one-third (707) of the children in the Bt20 cohort study repeated some grade/s in their schooling years. Of this number, 62.2% were boys and 37.8% girls. About 43.6% of all boys repeated, whereas only 24.6% of the total number of girls repeated, meaning that for each repeating girl there are 1.8 boys likely to repeat. Many studies have shown that boys were more likely to repeat than girls but it has not yet been clarified as to what would be the suitable pedagogical interventions to ameliorate this well-known problem, without discriminating against the girls. Perhaps if the fathers could take a keen interest in their boys' education it might help to improve their startling repetition rates.

Most parents in this study had attained secondary education, but the majority (847) had not proceeded beyond what was known as Junior Certificate (JC) or Std 8. Post-matriculation education was the least attained level (222). The primary school or less category included parents with no formal education, those who had attained Std 3, and those that reached Std 4-5. There are about 19 (0.9%) parents without formal education. Either they never went to school or they did not progress beyond grade 1.

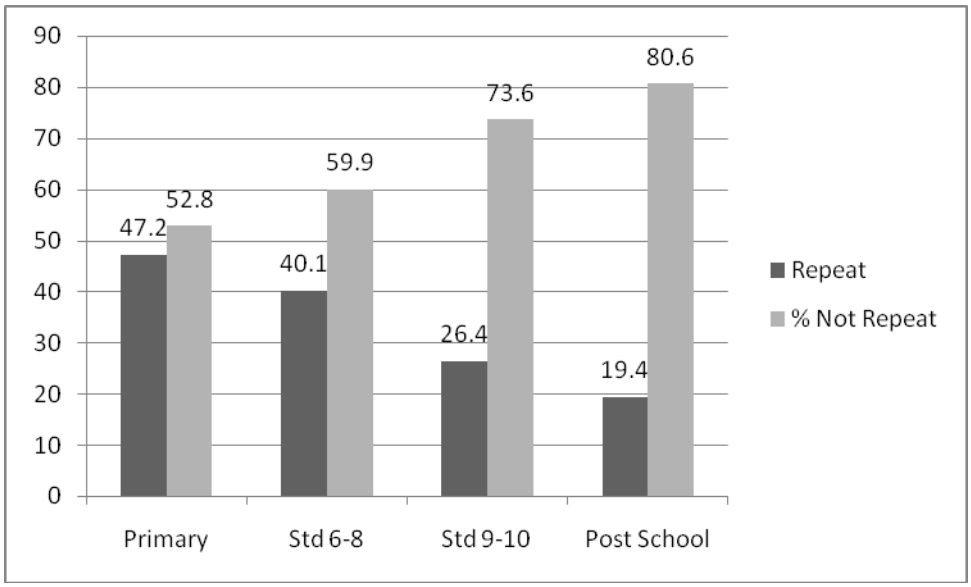
**Table 6: Maternal Education and Repetition**

| *Mother's Education* | *Repeat* | *Not Repeat* | *% Repeat* | *% Non-Repeat* | *Grand Total* |
|---|---|---|---|---|---|
| Primary or less | 108 | 121 | 15.3 | 8.7 | 229 |
| Std 6-8 | 340 | 507 | 48.1 | 36.6 | 847 |
| Std 9-10 | 165 | 460 | 23.3 | 33.2 | 625 |
| Post School | 43 | 179 | 6.1 | 12.9 | 222 |
| Missing Data | 51 | 119 | 7.2 | 8.6 | 170 |
| **Total** | **707** | **1386** | **100** | **100** | **2093** |

*Source: Bt20*

What this study shows is that home influence has a serious bearing on the child's educational attainment. As shown in *figure 2*, the higher the mother's education, the less repetition takes place. The influence of the mother is important as the number of children born to single parents is increasing. The repetition of children whose mothers did not attain more than primary school level ascended to 47%, but this was gradually lessened with the increase in parents' level of education. Children's repetition is lowered slightly, to 40%, among the parents who had been educated to lower secondary level and to 26% for those who had achieved higher secondary level and ultimately to 19% for the post-secondary school mothers.

**Figure 2: Comparison of mother's educational level**




*Source: Bt20*

The most obvious explanation of this phenomenon is that parents in possession of matriculation certificate or who have reached higher levels of secondary education stand a better chance to be employed and can thus afford to send their children to relatively well-functioning schools. Such a choice may be limited for the uneducated and poor parents, who may also be less competent in assisting their children with their school work. Adult Basic Education and Training (ABET) programmes, initially aimed to benefit older members of the society, may inadvertently help to reduce high levels of repetition.

In deepening our understanding of the conditions under which the children in the Bt20 study grew up, the place of birth, type of accommodation, and basic household facilities are included. The information contained in *table 7* is useful for two reasons. First, it provides us with a clear indication of the physical location in which children were born, and it reveals the extent to which the group areas act remained a key feature of children lives. It is very likely

that the vast majority Africans living in around Johannesburg were born in Soweto, since it is one of only two townships in the Johannesburg Metropolitan area. Similarly, Coloured and Indians resided in areas previously demarcated for them. This shows that the conciliatory vision of racial integration or *rainbow nation* had not been established in the 1990s.

**Table 7: Place of birth profile in the Bt20 cohort, 2005**

| *Place of Birth* | *Repeat* | *Not Repeat* | *% Repeat* | *% Non-Repeat* | *Total* |
|---|---|---|---|---|---|
| Soweto 1 | 453 | 805 | 64.1 | 58.1 | 1258 |
| Soweto 2 | 132 | 269 | 18.7 | 19.4 | 401 |
| Indian/Coloured | 94 | 150 | 13.3 | 10.8 | 244 |
| Inner City | 5 | 25 | 0.7 | 1.8 | 30 |
| Suburb | 22 | 132 | 3.1 | 9.5 | 154 |
| Missing | 1 | 5 | 0.1 | 4 | 6 |
| **Total** | **707** | **1386** | **100** | **100** | **2093** |

*Source: Bt20*

Children from homes based in Soweto 1 (presumable referring to the rest of Soweto excluding Soweto 2 areas) account for 64% of all repeats. Children from ex-Coloured areas accounted for only 13% of the total ranking, albeit with the highest repetition frequency of 38.5%, similar to the analysis by race. The term Diepmeadow/Soweto 2 (in this study) is a combination of two townships located in Soweto, Diepkloof and Meadowlands. It is not clear as to what made the data capturers decide to separate the two from the rest of Soweto, but Meadowlands is largely occupied by the former residents of Sophiatown (today known as Westdene), whereas Diepkloof consists of former Alexandra township dwellers. The frequency of repetition for Soweto 2 children is slightly less (33%) than that of children from former Coloured areas and Soweto 1. Diepkloof consists of houses similar to those of the neighboring suburbs (Mondeor) but the rest of the town is made out of *Verwoedian* four-

roomed houses. The reduced rates of repetition among Soweto 2 children in comparison with their peers from the rest of the township require further investigation.

The trend of repeats is least (14.3%) for suburban children. It must however, not be thought that all suburban children comprise only affluent families. Some parents could have been domestic workers. The sample is biased towards children born in public hospitals and excludes those born in private hospitals. A third of the African children residing in suburbia still attended school in the township and the remaining two-thirds were divided between inner-city and suburban schools. Over two-thirds of these children resided in backyard rooms and some lived in rented houses.

In recent demographic statistics, it has been estimated that 65% of Johannesburg's residents live in Soweto, but the 2001 Census placed Soweto's population at 896,995 or one-third of the city's population. The fact that 79.3% children sampled were born in Soweto suggests that 80% of the sample comprises Africans of whom the majority is likely to be poor. Fleisch (2008) has estimated that in South Africa there are 60% of children living in households with an income below R400 per child. The last 15% of these are regarded as poorest of the poor, spread across all type of accommodation, but with more concentration among those living in shacks. Although Johannesburg is the economic hub, not only of the province, but of the country as a whole, with positive GDP growth outpacing the national GDP growth rate, the growth in Soweto is negative (http://www.joburg.org.za/content/view/92/58/, date 12 December 2008 - Use this information cautiously, see *appendix 1).*

The type of accommodation is useful for delineating high rate of enrolment and repetition trends. *Table 8* shows that the study population consists mainly of people living in houses.

Although we do not know much about what 'house' signifies, we must assume that this would range from a two-room council house in Soweto to a large suburban house in the northern suburbs.

**Table 8: Accommodation type and repetition in the Bt20 cohort, 2005**

| *House Type* | *Repeat* | *Not Repeat* | *% Repeat* | *% Non-Repeat* | *Grand Total* |
|---|---|---|---|---|---|
| Shack | 46 | 75 | 6.5 | 5.4 | 121 |
| Flat | 23 | 47 | 3.3 | 3.4 | 70 |
| House | 456 | 904 | 64.5 | 65.2 | 1360 |
| Shared House | 65 | 74 | 9.2 | 5.3 | 139 |
| Other | 45 | 73 | 6.4 | 5.3 | 118 |
| Missing Data | 72 | 213 | 10.2 | 15.4 | 285 |
| **Total** | **707** | **1386** | **100** | **100** | **2093** |

*Source: Bt20*

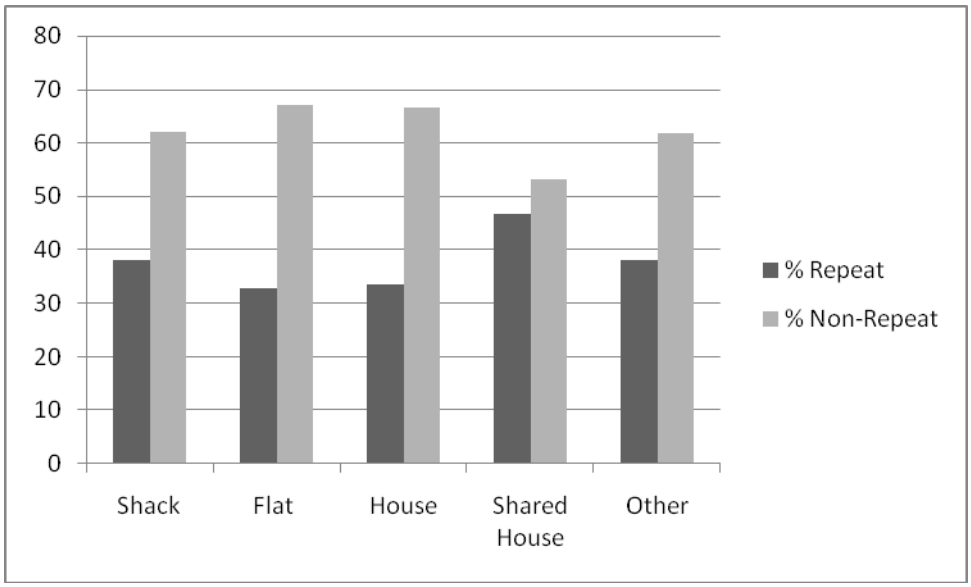
There are also small but significant percentages of children who lived in shacks (5.8%), shared houses (6.6%), or lived in a room (4.1%). There may be myriads of explanations for this distribution. At one level it could be attesting to the fact that the study population is not necessarily the poorest of the poor, as 65% report to be living in 'houses', or possibly shack dwellers borrowed addresses from well-established households. In the late 1980s there was a rapid increase of urban migration, following repeal of pass laws and abolition of the influx control. Johannesburg attracts many migrants from different parts of the country and neighbouring countries. Government's reaction was to prevent urbanisation through controlling access to urban space; this was done by allowing development in restricted areas. *The Prevention of Illegal Squatting Act* in 1989 was aimed at keeping the squatters on the

periphery of metropolitan areas (Schlotfeldt, 2000: 5). In the Boutek's Report, Schlotfeldt explains the state of affairs in housing at the time:

> *Many began to move towards the centre, to be near work and other economic opportunities and gain improved access to amenities and service. While vast majority of the black urban population remained in overcrowded conditions in townships many began to squat on vacant land within the former white urban areas or moved into the inner city areas of the former white cities.*

The Housing Department has made inroads towards improving the lives of the people. There remain, however, 182 informal settlements around the city, with about 350,000 people still living in shacks (http://www.joburg.org.za/content/view/1949/204/, 12 December 2008 - I use this information cautiously, see *appendix 1*). The mass quantity of the low-cost houses built for the poor South African compromised quality in a way no different from increased enrolment in educational institutions with low achievement returns. Improvements are evident at a policy level but implementation remains a challenge, negatively affecting the education of the urban poor in township schools.

**Figure 3: Comparison of Accommodation and Repetition in the Bt20 cohort, 2005**




*Source: Bt20*

Whereas children from homes mainly made of corrugated iron sheets are exposed to high levels of poverty, their living conditions may not be any qualitatively different to those of children living in shared houses. About 47% of the children living in shared homes repeat, the highest level in the study, followed by those from shacks (38%). Due to small numbers for hostel, garage, and the children living in rooms these were combined as 'other' with 38 percent of repeats.

At this point the begging question is what enables the 66% children, arguably coming from similar conditions, to avoid repeating? Since maternal education proved to be a strong determinant for progression it was noted that 68% of the parents from shared houses did not reach Std 9. Thus, high repetition relates to insufficient mothers' education. Opportunities for improved living conditions are likely to be available to those with slightly higher education.

This may be particularly true for those homes whose economic survival depends on employment.

Although 65% of the study population lived in houses, close to twenty percent of these had not acquired basic household assets like refrigerator and television. This is particularly revealing when considering the shack dwellers; 53.7% had no fridge and 45.5% households were without television. It is likely that these homes have few or no books or resources that might incite children's curiosity to learn. Educative programmes on the television may contribute to spoken language skills but are inadequate for teaching reading and writing or supplementing literacy skills without mediation. The children whose homes are without TV are likely to struggle with hearing and responding to instruction.

**Table 9: Household types without basic household assets in the Bt20 cohort.**

| Accommodation type | Number | % of total household type without fridge | % of total household type without TV |
|---|---|---|---|
| Shack | 121 | 53.7% | 45.5% |
| Flat | 70 | 21.4% | 17.1% |
| House | 1360 | 19.0% | 17.8% |
| Hostel | 22 | 18.2% | 22.7% |
| Shared house | 139 | 20.9% | 20.1% |
| Room | 85 | 54.1% | 35.3% |
| Garage | 10 | 40.0% | 40.0% |

*Source: Bt20*

Although ownership of these common household assets does not necessarily point to wealth, inability to purchase them is indicative of poverty.

Fleisch's definition of poverty is useful in explaining this situation:

> *At its most basic level, poverty is the inability to acquire the essential material means to maintain life. While poverty is not a simple phenomenon, people who are poor generally have low incomes and few assets. Poor adults tend to be caught in chronic unemployment and underemployment and, if working, employed in low-paid jobs. Poor people tend to have few household goods, regularly go hungry, and have inadequate housing and limited access to education and health care* (Fleisch, 2008:55).

There is a percentage point difference of 5% in repetition between children from the households with assets like television and refrigerator. This shows that children from poor households (when using non-ownership as a proxy for poverty) underperform slightly more, but it cannot be concluded that poverty is the strongest predictor for repetition and underperformance.

So far these findings indicate that gender, ethnicity, maternal education and socio-economic conditions are useful leverages for explaining entrenched repetition. What has not been explored are possible solutions. Existing literature unequivocally and convincingly esteems preschool enrolment above all other possible interventions aimed at reducing repetition. The following section focuses on preschool enrolment, non-enrolment, and comparison of patterns of repetition between these two groups of learners.

### 4.2 Enrolled in ECD Programmes

In the Bt20 cohort study there were 1413 or two thirds of children with some form of preschool education prior to entering primary school. Of this figure about 1271 participants

attended grade 0. When compared to national statistics (StatsSA, 2005) and ECD sector studies, 67% preschool attendance is relatively high. The fact that the study is located in an industrialised, densely urban subpopulation and in an area that is well resourced with ECD provision might explain why the number is relatively high. Gauteng registered the highest proportion of children in the 0-4 age cohort who attended preschool institution when compared with other provinces, with an official ratio of one in five (19.7 percent). This number is tripled in this study. The official number excludes some centres that have not been enrolled with the governments departments.

**Table 10: Preschool and Non-Preschool Enrolment in the Bt20 cohort**

| | *No of Learners* | *Percentage* |
|---|---|---|
| Preschool | 1413 | 67.5 |
| No Preschool | 680 | 32.5 |
| Grand Total | 2093 | 100 |

*Source: Bt20*

The Bt20 database includes information on whether children attended a preschool and the name of that preschool, as well as information on children's enrolment in Grade 0 classes. While most children indicated if they attended preschool, only a very small number recalled the name of that institution. Notwithstanding this limitation, information on attendance is pertinent to this particular study. The number of years spent in a preschool could be useful for analysis but there is clear information only on attendance and non-attendance. The analysis compares these two groups of children and controls other variables deemed relevant to the current study. Since the number of years enrolled in a pre-grade 0 year cannot be concretised, the analysis will look at attendance broadly (whether once or twice or thrice).

Analytically, it could be important to split distinct preschool categories into formal school-based pre-grade 1 year and non-school based programmes. In some instances, the children indicated that they attended a grade 0 in a self-contained non-primary school environment, whose name could not be recalled, which makes it difficult to trace the type. But given the absence of consistent and complete information, the primary concern for the current study has to do with attendance rather than the location of grade 0 per se (*see table 11).*

**Table 11: Grade 0 Attendance profile in the Bt20 cohort**

| ***Grade 0*** | ***1995*** | ***1996*** | ***1997*** | ***1998*** | ***1999*** | ***Grand Total*** |
|---|---|---|---|---|---|---|
| New Entrants | 898 | 293 | 71 | 8 | 1 | 1271 |
| Repeats | 0 | 370 | 62 | 14 | 1 | 447 |
| Total Enrolment | **898** | **663** | **133** | **22** | **2** | **1718** |

*Source: Bt20*

While very little can be said about the pre-grade 0 attendance, save for normal disaggregation, we know considerably more about grade 0. The rate of attendance (1271) was slightly lower than the total preschool attendance (1413), showing only 142 learners who proceeded to grade 1 without entering grade 0. Although grade 0 was well received, little is known about its ramifications for the period when most were enrolled in this grade, except for the brief provision in the *White Paper on Education* released in 1983 (Williams & Samuels, (2001). In the policy document, grade 0 served the function of a bridging course to prepare learners for entry into formal education.

Interim ECD policy was put in place in mid 1990s. At that time, the extent of ECD provision and the quality of services had not been fully grasped, as the nationwide audit would only take place in 2001, followed by the ECD policy in the same year. On its release, the *White Paper 5 on Early Childhood Development* (RSA, 2001) favored a school-based reception year, pushing pre-reception year services to the periphery (Porteus, 2004). The term for this level was changed from grade 0 to grade R. Grade R gained prominence among policy makers and also among those parents who were unable to send their children to community-based centres. It reduces significantly the number of children entering grade 1 without preschooling, although the grade itself offers rather little too late.

The full grasp of the impact of grade R will be in plain sight once it has been compulsory, from 2010 and beyond. The Bt20 cohort study is longitudinal and thereby provides space to observe if grade 0, construed similarly to the present grade R, has any influence on school success ahead of the 2010 target. Only 10% of preschoolers went straight to grade 1 and skipped grade 0 but the repetition trend between the two groups is not starkly different. It yields a percentage point difference of only 2%.

**Table 12: Comparison of preschool children without grade 0 with those that attended**

| | *Grade 0* | *Non-Grade 0* | *% Grade 0* | *% Non-Grade 0* | *Grand Total* |
|---|---|---|---|---|---|
| Repeat | 405 | 42 | 31.9 | 29.6 | 447 |
| Non Repeat | 866 | 100 | 68.1 | 70.4 | 966 |
| Total | 1271 | 142 | 100 | 100 | 1413 |

*Source: Bt20*

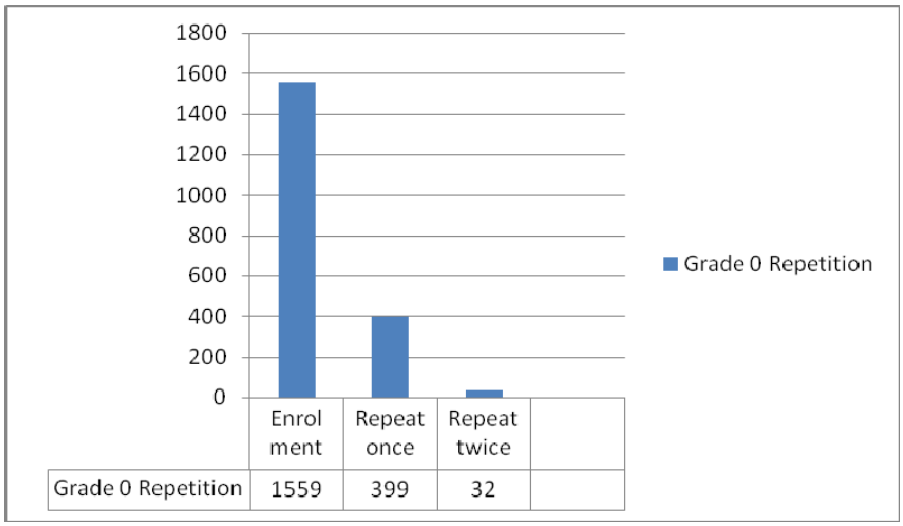
The benefits for attending grade 0 cannot be measured against those of straight preschool without a reception year. This measurement could have been possible if the numbers of learners who either went straight to grade 0 or started in 0 – 4 preschool programmes were clearer. It is envisaged that the practices of shying away from early education services and making early and late school starts will be relinquished with compulsory grade R.

### 4.2.1 New Entrants to Grade 0

Grade 0 was construed as a bridging course to prepare learners for entry into formal schooling. What is intriguing, however, is that a considerable number of the attendees repeated the grade. Entrance to grade 0 occurred in different years, with 898 children reporting that they attended a grade 0 when they were four turning five years old. Although grade 0 enrolment in the second year (1996) was 663, only 293 entered this grade for the first time, while more than half (55.8%) of the group attempted the grade for the second time, marking the highest repetition in the entire study (*see figure 4).*

The first two years (1995-96) encompass the time of highest enrolment and repetition in grade 0. About 403 repeated grade 0, with 399 repeating only once, but this number rises to 447 when considering those that repeated the grade more than once.

**Figure4: Grade 0 repetition trend in the first three years of enrolment**




*Source: Bt20*

### 4.2.2. Grade 0 Analysis

In the first three years, repetition can be best explained by age, as younger learners tended to repeat more frequently than the older ones. Only 20% repeated grade 0 from the cohort of children that entered grade 0 for the first time when they were six turning seven. The variances in rates of repetition show that the younger children were more likely than their older peers to be held back in grade 0 class for a year. This can be explained in three possible ways, first through conspiracy theory, secondly by using Piaget's stages of cognitive development, and lastly through policy.

Preschool provisioning during the early years of this study was largely offered by the community-based centres (CBCs), which depended mainly on fees to remunerate the employees, to pay water and electricity bills, and purchase food. High enrolment was necessary, not so much to increase access, but rather to boost up the coffers to meet demands

for the daily running of the programme. Weaker and younger learners could have been retained without a special programme in place to help them improve, especially since repetition was normative. Retained children may have increased enrolment rates. However, this explanation cannot account for 58.8% of the same age cohort that progressed to the next grade, especially since grade 0 was not yet compulsory.

Secondly, repetition of Grade 0 could be interpreted as suggesting that repeating younger learners have not developed the cognitive competence that characterises school readiness. Although Piaget's work classically argued for universality of the stages, he acknowledged the possibility of developmental delays in which some learners operate at a lower stage than their age-mates (Piaget, in Ripple and Rockcastle, 1964). While teachers are able to make judgments for retention and progression through assessment, they may be inadequately equipped to remedy learning deficits in children. This could be further exacerbated by overcrowded classes, making individual attention difficult or impossible. It may also be due to insufficient home interventions to compensate for preschool's inadequacies, resulting in children's inability to assimilate concepts taught at the centre.

Thirdly, age-grade norm policy was endorsed in 1998, following the country's high rate of repetition and clusters of dissimilar children age cohorts in different grades. The policy sought to appropriate the age and grade in a systematic manner. It is possible that automatic promotion had been a tacitly held practice in preschool even prior to the policy, as older children were more likely to progress without repeating grade 0. While promoting learners on the basis of age when they do not necessarily exhibit the baseline competence for the grade can have dire consequences, making a child repeat without plans in place to help them progress the following year may be immoral. It was an accepted practice, stipulated in the

policy, for younger children to attend grade 0 for a year or two, although the philosophical underpinnings for the second year were not as clearly stipulated, considering fiscal austerity. However, since the policy formulations were in the first place responding to the repetition crisis, it is safe to postulate that a second chance was probably envisioned as enabling the learner to be more thoroughly equipped for school.

**Table 13: First Enrolment in grade 1**

| *Attendance* | *1996* | *1997* | *1998* | *1999* |
|---|---|---|---|---|
| Preschool | 585 | 656 | 136 | 22 |
| No Preschool | 297 | 268 | 85 | 8 |
| **Total** | **882** | **924** | **221** | **30** |

*Source: Bt20*

Age-grade appropriation policies are an attempt to ensure that learners progress with similar cohorts. Over-age can be caused by either repetition or late entry. In this study, more learners with preschool education started school earlier or at an appropriate grade although the difference is not prominent. A total of 221 children started school a year later when they were seven turning eight, and 882 started school a year earlier. While the latter case could be due to parents insisting that their children were ready for school, the former can be problematic, as over-aged learners are likely to carry a stigma. There were no outstanding benefits in term of achievement for early starters; repetition rates were instead higher among younger learners than older ones, as already noted.

### 4.3 Gender, Race, Maternal Education and Place of birth

Who attends the preschool programmes? This question will be answered by looking at gender, race, maternal education and place of birth as significant variables for explaining the causes of attendance. While preschool education is well received by most participants, some contextual factors contribute to regular attendance. Place of birth is particularly useful in elucidating the major factors affecting preschool enrolment, as it helps to show socio-economic disparities.

#### 4.3.1 Gender

In his estimation, Lewin (2007:13) differentiates gender parity in lower and higher grades; he argued that in lower grades it is likely to be favorable to girls. While there are slightly more girls (732) than boys (681) enrolled in preschool programmes this is due to birth rates. When analyzing gender populations separately, the finding is that both girls (67.4%) and boys (67.6%) attend preschool equally (*see table 14*). There are, however, vast differences in repetition and progression. *Table* 5 revealed that 62.2% of all repeaters are boys, whereas 59.2% of non-repeating children are girls. It is alarming to observe that preschool attendance does not reduce the rate of repetition among both genders significantly. It is lowered only by 2.3% among boys from 43.7%. This percentage is however increased slightly by 4.6% among non-preschool boys to 48.3%. While access is equitable, boys, lag behind girls in attainment.

**Table14: Shows preschool attendance and non-attendance by gender**

| | *Attending Preschool* | | *Not attending Preschool* | |
|---|---|---|---|---|
| | Repeat | Not Repeat | Repeat | Not Repeat |
| Boys | 282 | 399 | 158 | 169 |
| Girls | 165 | 567 | 102 | 251 |
| Total | **447** | **966** | **260** | **420** |

*Source: Bt20*

The leveled playing field in term of access signifies a patriarchal shift, if it is maintained; more females are likely to be enacting roles which were previous reserved for males. This accentuates the argument advanced by Perry and Arends (2004), although they were not commenting on pre-primary education that in South Africa there is a tradition of going to school for both males and females, though quality may be low. What might be intriguing would be what accounts empirically for persistence in primary school attendance, when there is little learning, as shown by Fleisch (2008).

### 4.3.2 Race

In South Africa, race remains an important descriptive in mapping out variances in access to educational institutions, including pre-school.

**Table 15: Preschool attendance and non-attendance by race**

| *RACE* | *Attending Preschool* | | *Not attending Preschool* | |
|---|---|---|---|---|
| | Repeat | Not Repeat | Repeat | Not Repeat |
| White | 11 | 112 | 3 | 9 |
| African | 388 | 765 | 199 | 330 |
| Coloured | 45 | 64 | 55 | 77 |
| Indian | 3 | 25 | 3 | 4 |
| **Total** | **447** | **966** | **260** | **420** |

*Source: Bt20*

It can be seen from *table 15* that the growing recognition for preschool participation is spread across races with the exception of Coloureds. Although not statistically representative, the White and Indian children's preschool enrolment is satisfying. Unfortunately, apart from the fact that numerical values for preschool enrolment are high, very little can be said about the quality offered in the programmes.

The study consists of 1153 or 68.5% Africans enrolled in preschool and only 109 or 45.2% Coloured children. There are 245 or 63.1% African preschool boys repeating, in line with the total repeats for boys. There is no compensation for repetition attributable to preschool attendance among Coloured children, where the rate of repetition is 41% regardless of attendance in preschool programme, whereas an improvement of 3.9% is discernable among Africans.

### 4.3.3 Maternal Education

South African research (Anderson et al, 2001; Case and Deaton, 1999) has shown that maternal education is important in explaining school enrolment and attainment. *Figure 5* reveals a clear trend, that greater amount of parent education increases the chances of children of attending a preschool.

**Table 16: Shows preschool attendance, non-attendance and repetition rates by maternal education**

| ***Level of Education*** | ***Attending Preschool*** | | ***Not attending Preschool*** | |
|---|---|---|---|---|
| | Repeat | Not Repeat | Repeat | Not Repeat |
| Primary and Less | 56 | 64 | 52 | 57 |
| Std 6-8 | 209 | 321 | 131 | 186 |
| Std 9-10 | 119 | 355 | 46 | 105 |
| Post school | 34 | 149 | 9 | 30 |
| Missing Data | 29 | 77 | 22 | 42 |
| **Total** | **447** | **966** | **260** | **420** |

*Source: Bt20*

In this study, most parents of differing levels of education were able to send their children to preschool, with exception of the parents without formal education. About two thirds of the children whose parents were without formal education did not attend preschool. This is concealed in the table as they are included in the primary and less category. There were noticeable disparities in enrolment relative to parents' level of education, forming a positive slope from 52.4 among the primary to 82.4 percent for those with some post school education. Maternal education remains the strongest determinant for enrolment in a preschool programme.

This could be caused by a number of social factors, including financial mobility on the part of parents and level of appreciation of preschool education. If preschool is conceived merely as a baby-sitter programme, where working parents send their children while away, this could cause children to be absent on those preschool days when parents are at home. Borrowing the explanation used by Colclough and Lewin (1993:78), when writing for a different context, it can be extrapolated that supply of preschools may not be enough without appreciation and demand by the parent clientele.

Parents with higher levels of school education are likely to be employable, with better remuneration packages than those without schooling. This enables them to afford the preschool costs for their children. Three quarters of children whose parents had persevered until they reached the most senior grades of high school attended preschool. Maternal education post-matric registered a significant leap, approximating universal preschool; 82.4% of parents in this bracket sent their children to preschool.

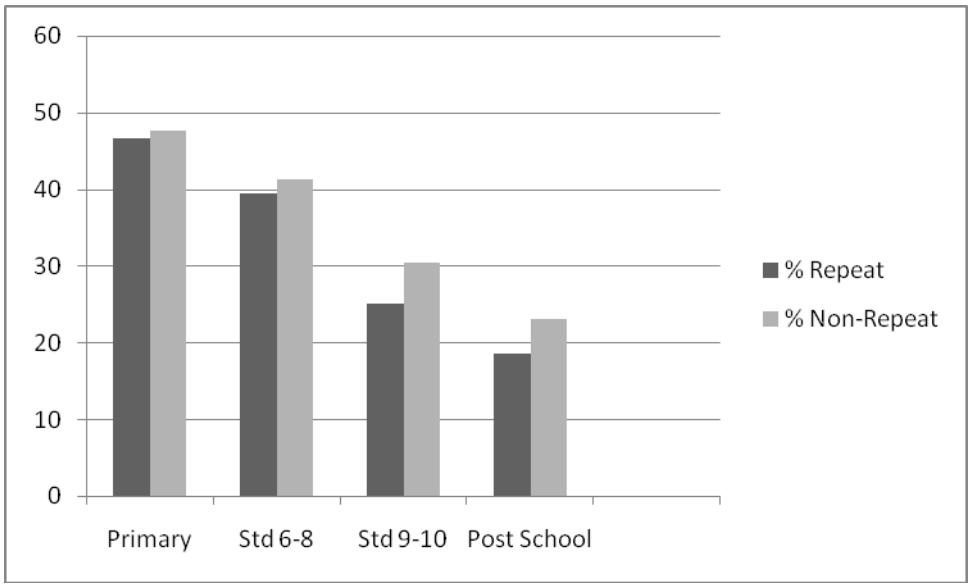
The preschool costs at the CBCs are more than the private cost expended by parents on their children's post-preschool education in townships and rural centres. This could lead to children being kept at home by those parents with little or no education, due to cost and demand. This section has shown that there is a strong relationship between parents' level of education and attending a preschool year. In the following sections we consider house-related determinants for preschool enrolment.

Other studies (Anderson et al, 2003) strongly suggest that maternal education has a positive impact on grade repetition and completion of school. It is further asserted that the quality of

education received by the parents plays a major role in influencing children's achievement. Children whose parents were enrolled in districts which were perceived to be 'good' tended to experience lesser rates of repetition (Anderson et al).

*Figure 5* shows that the level of education attained by parents is directly related to school progress. The total repetition was 47.2% for children whose parents were on the lower end educationally, 40.1% for children whose parents had Std 6-8, 26.4% for higher secondary, and 19.4% for children of more educated parents. Children whose parents had less education were more likely to repeat some grades at school. Although maternal education has influence on enrolment and repetition, as can be seen in the bar graph below (*Figure 5)*, there is very little perceptible impact due to preschool attendance, in that both preschoolers and non-preschool repeat in closely similar proportion, but more evident on lower categories of maternal education. Slightly higher repetition rate in instances where the mother obtained matric or post-matric is observable among children without preschool. We assume that matric can mean mere enrolling in an adult centre, or a school leaving certificate and post-matric includes anything from N4 certificate in FET colleges, or six months of computer training to very few university degrees. As such it must not be expected that the difference be any spectacular, as the quality of both ECD programmes and primary school was hardly glorious.

**Figure 5: Maternal Education and grade repetition**




*Source: Bt20*

Lower levels of Bantu educational attainment have little bearing on influencing children's achievement, whereas more educationally exposed parents are likely to have high expectations and assist their children with school work. Although the apartheid state was able to increase schools access for many African youths, there were no major leaps in literacy rates, *presumably due to low quality and high levels of political contention within schools.* Literacy was only raised among certain members of black ethnic groups (Bruce et al, 1996).

### 4.3.4 Place of Birth

The place of birth does not show any strikingly signifiers for preschool attendance among children born in Soweto (67.2% for Soweto 1 and 70.1 for Soweto 2). Only 48.4% of children from former Coloured and Indian communities enrolled in a preschool. This percentage is lower than 67.5% of the ECD attendance in the whole study, due to low preschool attendance

among Coloured children as shown in race distribution section. Preschool enrolment among suburban children was 89%. Parents in suburbia are likely to be part of the elite, with some basic knowledge of the importance of early child development. This can be attributed to a number of factors, including expected high rate of employment, affordability, and availability of programmes.

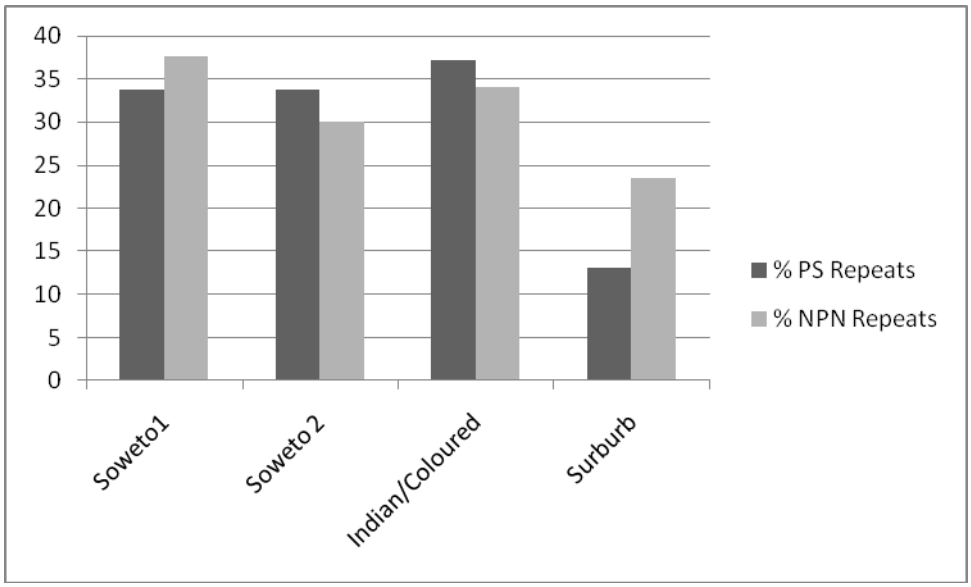
**Table 17: Place of birth and preschool attendance**

| | *Attending Preschool* | | *Not attending Preschool* | |
|---|---|---|---|---|
| Place | Repeat | Not Repeat | Repeat | Not Repeat |
| Soweto1 | 286 | 560 | 155 | 257 |
| Soweto 2 | 95 | 186 | 36 | 84 |
| Indian/Coloured | 44 | 74 | 43 | 83 |
| Inner City | 3 | 23 | 2 | 2 |
| Suburb | 18 | 119 | 4 | 13 |
| Missing Data | 1 | 4 | 0 | 1 |
| Total | 447 | 966 | 240 | 440 |

*Source: Bt20*

Figure 6 shows that preschool children from Soweto 2 and former Coloured areas repeat more than the non-preschool group. It may be precarious to conclude that more pronounced repetition rates in these areas is due to low quality of the programmes, as this is generally an overriding feature in all townships. There may be constellation of factors contributing to low school achievement. While low achievement is expected from township schools, higher repetition among preschool children is a misnomer, especially since preschool is deemed as a strategic intervention to ameliorate poor performance. However less qualitative it may be, even a little exposure to education ought to yield better results than absence of it. Non-attendance at preschool programmes is the main cause of repetition for suburban children.

**Figure 6: Repetition by place of birth**




*Source: Bt20*

### 4.3.5 Household Ownership

Household information is useful in indicating poverty levels. The bulk majority of children in this study, 1294, or 61.8% of the total population, came from rented houses, either from someone or local municipality. Non-preschool attendance in the study population is prevalent among those whose homes were rented either from municipality or persons, with 34% preschool non-enrolment, and was slightly less (27.5%) among house owners, as shown in *table 18.*

**Table 18: Household ownership and preschool attendance**

| | *Attending Preschool* | | *Not attending Preschool* | |
|---|---|---|---|---|
| Property | Repeat | Not Repeat | Repeat | Not Repeat |
| Own | 90 | 242 | 37 | 89 |
| Rent from Person | 76 | 174 | 46 | 85 |
| Rent from Municipality | 226 | 371 | 124 | 196 |
| Owner's Property | 12 | 16 | 3 | 7 |
| Missing Data | 43 | 163 | 30 | 63 |
| Total | 447 | 966 | 240 | 440 |

*Source: Bt20*

Most of the parents in the study rent their houses from the local authorities, following the apartheid legacy of control and segregation. Although the group areas act in 1950 separated land for occupation by Africans, Whites, Coloureds and Indians, by 1968 "Africans were forbidden from holding freehold property in townships, they had to be tenants of municipalities" However, they could freely exercise the right to own property in their respective homelands. The rise of urbanisation caused many to migrate to the cities, a plight which presented shortfalls in township accommodation, resulting in a rise in informal developments and some migrant male workers residing in hostels.

Non-white races in the 1970s also increasingly occupied flats in the cities (Goodlad, 1996: 1631). In the 1990s, which represent the preschool years of the children in this study, there is not a noticeable change in the residential devastation in black residential areas. Most of the children are likely to have been born in overcrowded homes with shacks, rooms and garages occupied by two or three other families attached to their houses. This could have constrained parental strategies to inculcate educational values in their children, as families differ. Where

children may have been left safely under the care of unemployed neighbors and relatives, this could have added to the reduced demand for preschool services.

### 4.4 Impact/ consequences of attendance

The total repetition for the entire Bt20 study between 1995, when only 23 children were enrolled in grade 1, and 2006, when some learners were in the FET band, is 816. The education budget prepared to cover 2093 children for ten years is increased to suit 2909 to cater for repeaters. It could be that some children are promoted undeservedly, especially the older ones, due to sympathy and pressure to adhere to those policies that seek to appropriate grade with age. It has been hoped that making preschool programmes available to all children could drastically reduce repetition rates and gradually obviate adverse education practices of promoting learners undeservedly.

What *table 19* indicates is that of the 680 children that did not attend preschool, 38% or 260 repeated at least one year. This was reduced by the percentage point difference of 6.6% for the preschool children to 31.6%. Slightly above two thirds of the total population or 1413 children progressed through school grades without repeating. It is alarming to observe that more than a third of the study population repeated grades and even further disturbing to learn that enrolling in a preschool has but moderate effects. In order to cater for repeaters, Bt20 evidence reveals that provincial government ought to increase the ten-year budget by 3.9% annually.

**Table 19: Preschool enrolment (PS) and non-enrolment (NPS) and repetition**

| *Children* | *PS* | *NPS* | *% PS* | *% NPS* |
|---|---|---|---|---|
| Repeat | 447 | 260 | 31.6 | 38.2 |
| Non-Repeat | 966 | 420 | 68.4 | 61.8 |
| Total | 1413 | 680 | 100 | 100 |

*Source: Bt20*

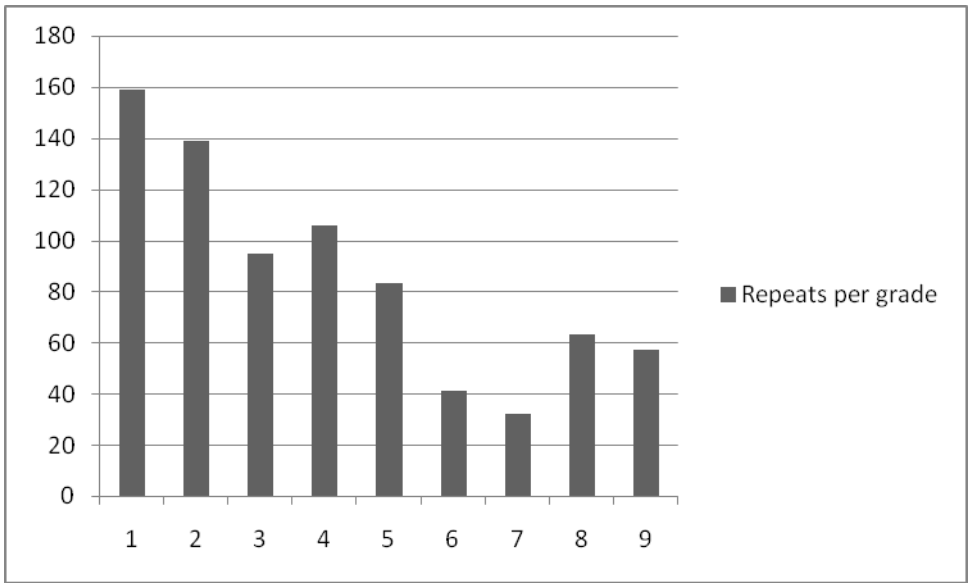
South Africa's National Qualification Framework (NQF) comprises the three broad bands of education: General Education and Training (GET: grades R-9), Further Education and Training (FET), and Higher Education (HET).

GET is further subdivided into three phases, Foundation (R-3), Intermediate (4-6), and Senior (7-9), but grade R will only be made compulsory in 2010. The interesting thing about *figure 9* is that it enables us to see specific grade phases in which repetition is widespread. Although the overall picture shows that repetition per grade is less than ten percent, except for the first two grades (1 & 2), these findings show that attempts to curb repetition ought to pay much more attention to where repetition is higher, at transitional entry points. Evidence from Bt20 reveals that learners are battling to make a transition from one phase to the other or from one HoD to the other.

High repetition, specifically at these strategic points, could be spawned by a number of factors, including educators' lack of planning as a phase. Phase and inter-phase planning could be useful for aligning the curriculum content covered in previous grade and also to reduce anxiety in the new entrants.

Grades 1, 2, 4, and 8 have highest repetition rates in their respective phases. The peculiarity of grade 2 is that is a non-entry point but has high repetition. Grade 7 is an entry point but has the lowest repetition rate. These phenomena need separate explanation, especially since DoE (2005) data showed that repetition was much higher in grade 7 than the rest of the grades in the phase. While grade 7 is the senior phase entry point in many provinces, including Gauteng, it is also the last grade of primary school, making grade 8 the transitional entry point from primary to high school. Most of the grade 2 repeaters are children without pre-primary education, but repetition for preschoolers also exceeds 5%, see *figure7.*

**Figure 7: Number of repeating learners per grade**




*Source: Bt20*

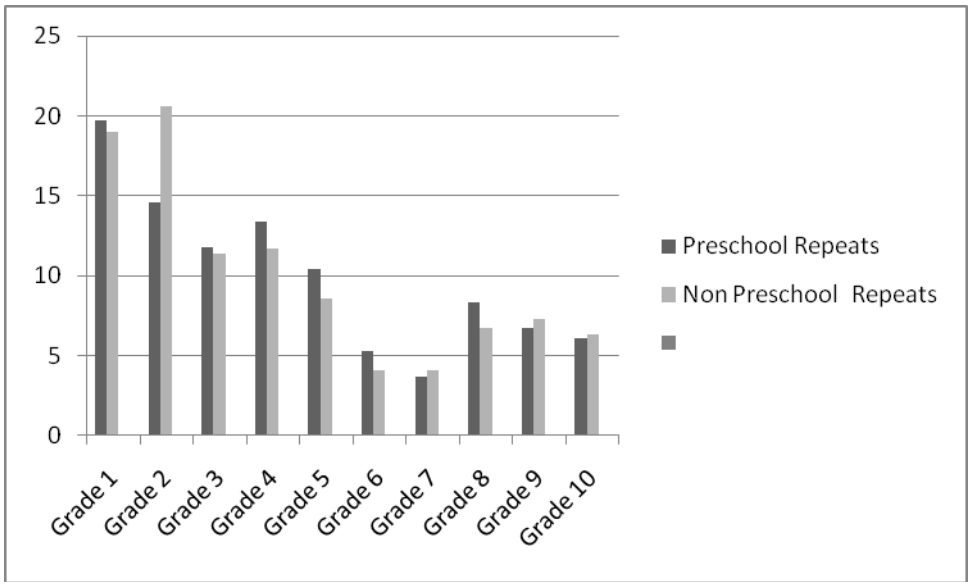
The pattern of grade repetition in the Bt20 study is evident both in children with preschool education and those without, in somewhat comparable proportions. Where repetition is high, it tends to be higher for both preschool and non-preschool children, and vice versa. The difference however, is that it is slightly lower among the preschool group for some grades.

*Figure 8* shows that prevalence of grade repetition is endemic in the first two grades of schooling. The repetition rate in grades 1 and 2 accounted for 37.3% of the overall repetition in the study throughout schooling years. The highest repetition, of 20.5%, is in the first grade, followed by a total repetition of 17.9 in the second grade.

It may be that younger children take longer to adjust to school learning. Managing transition from learning through playing during preschool years to structured learning in early primary grades appears to be a challenge. If there is any influence that preschool has on grade repetition it ought to be more noticeable in earlier grades. However, if preschool quality is poor or teachers fail to manage transition it may be inadequate in preparing children for early schooling.

*Figure 8* compares grade-to-grade repetition for the two groups studied. Between grades 3-8, the rate of repetition is reduced significantly, from 20.5% in grade 1 to 4.1% in grade 7, with higher rates alternating among the groups of children studied. It is difficult to attribute the higher repetition rates in higher grades to the lack of attendance in a preschool, especially since the criticism for Head Start has been that cognitive gains accumulated last from the early years into primary school. It is, however, expected that preschool children may have more ability to learn individually, whereas those without may be unable to read for understanding by themselves even when determined.

**Figure 8: Comparison of the overall repetition for the children that attended preschool and non-attendees.**




*Source: Bt20*

The following analysis will consider annual rates of repetition, especially in the early years of mass schooling. In 1996, the repetition rate reads at 9.3% among preschool children, while in 1997there were 6% repeaters. Although the total repetition in grade 1 was higher for the preschool children in the first year of mass entry, it was significantly lesser than the 12.5% of non-preschool learners in the same year. What this shows is that preschool made more impact on younger children. The number of years spent in a preschool programme or repeating grade 0 increased opportunities of success in grade 1. One year of grade 0 or reception year may be insufficient for reducing repetition rates.

The Ministerial Committee on Learner Retention Report confirms that repetition rates in many developing countries are at their highest in grade 1. Schools all over the world experience higher grade repetitions at the start of a school cycle than they do in subsequent years. The high rate of grade repetition in the first grade is attributable to inadequate school

readiness programmes, serious problems with learners' learning abilities, or significantly high enrolments which have not been accompanied by appropriate levels of provisioning (Ministerial Report, 2008).

Evidence showing that the prevalence of repetition in grade 1 is higher for children without preschool is not enough; this is a worldwide phenomenon, presumably including societies with well-established preschool programmes. Evaluating ECD centres as inadequate does not tell us much about inadequacies of the grade 1 teachers in stimulating learners' learning. It may be that the training of grade R/0 or pre-primary 'practitioners' vastly differs from that of grade 1 teachers. This may pose challenges for transition from grade 0-1.

In 1997 the rate of repetition was reduced among non–preschoolers to 6.1%. The analysis provided for the repetition in grade 0 becomes relevant again in accounting for less repetition among the older learners. Younger learners are likely to be held back as they still have age mates in the same grade, but those whose peers are either going or are already in the next grade are likely to be released as well, largely due to sympathy.

The study reveals that boys repeat more frequently than girls, as already documented by Fleisch and Schindler (Forthcoming) in a different Bt20 study. A closer scrutiny of gender relations in academic attainment shows that preschool attendance benefits boys more than girls. Both Coloured and African boys who attended ECD programme have lower repetition rates when compared to boys without preschool. While repetition for African girls is less, regardless of their attendance, it is rather strange noting that preschoolers repeat more than the girls without preschool. Of African girls, 32.9% with preschool education repeat. This percentage is reduced anomalously to 26.9% for the girls who did not attend preschool.

Likewise, there is higher repetition for Coloured girls with preschool than for those who attended a programme, to the extent that girls' repetition rates approximate that of boys without preschool. This requires more investigation. It may be precarious to rush into concluding that Coloured girls lack culture of schooling and learning more than the boys.

Children from the shacks are likely to represent the poor of the poor, thus expected to rely entirely on school programmes for their children's education. Hence, the assertion (Loeb et al, 2007) that the poor benefit more on ECD programmes than their relatively well to do peers. Attending a preschool seems to be making a difference among those living in houses and shacks. It is unclear why there is less impact among those that are renting either a flat or room and those who are sharing a house. But owning living space, however shabby, contributes towards children having a sense of belonging. It may be presumptuous to conclude that there are epistemic benefits associated with the sense of home ownership, but if renting a house reflects economic status then social mobility can be affected. The Ministerial Report (2008) shows that parents' income quintile is related to schooling attainment, but the analysis was done of parents of the 16-20 age cohort.

Born at the daybreak of democratic epoch, a time that Seekings (1996) viewed as characterised by moral panic, uncertainty and social threats posed by school boycotts, violent streets and depressed economy, it is refreshing to recall that the infancy, kindergarten and toddler years of these children persisted amidst morbid ethnic violence perpetrated by the forces of the shifting older order. These children were in many ways a beacon of hope; however, their schooling would not be left unaffected by the social ills, including the inefficient education system. Preschool was expected to act out a formidable role of inculcating a culture of schooling and learning, particularly in preventing repetition from

being a norm. These findings show that preschool does lower repetition rates and that school benefits can be enabled or constrained by social factors like the poverty stratum and household factors, including freedom of movement to explore and experience in order to develop cognitive tools, and the education levels of parents. These factors are necessary for an analysis of benefits of preschool especially in light of debates on preschool investments and opportunity costs for an individual including improving systemic internal efficiency.

It may be presumptuous to make claims about the relationship of preschool attendance by merely looking at figures while disregarding other contingent factors. The major limitation in this study is the absence of performance indicators and type of preschools. It must, however, be assumed that the vast majority of the study population attended community-based centres (CBC) as they were the predominant form of provisioning at the time for working-class children. Currently the government is reversing 75% (CBCs) to 85% school-based centres (SBCs). The study presents fresh information, useful for systemic evaluation of the preschool impact on grade progression.

# CHAPTER FIVE

## Conclusion

### 5.1 Introduction

The rise of schooling in the developing world emerged for the first time with the demise of the official rule of colonialism. The post-independence era was among other things characterised by rapid expansion of schooling at all levels, with the increase of enrolment rates more frequent at higher levels. In Africa, the increase in tertiary education was fastest, followed by secondary then primary education due to shockingly low enrolment in higher levels previously (Colclough with Lewin, 1993:14). This rapid growth in schooling would however recede in the 1980s, due to adjustments in public expenditure following the economic recession at the time (Mkandawire, 2001). In 1990, the vision to increase enrolment rates was revived under the auspices of MDGs and EFA, but this time the focus was placed on lower levels of schooling (ECD and Primary). Education priorities were spelled out more specifically than in generic terms. It was held that 'good-quality primary schooling' is instrumental to the country's development.

Schooling in South Africa, as in many other developing countries, has been placed at the centre of the development agenda. It is envisioned that improved schooling could contribute meaningfully towards improving economic chances for poor and marginalised groups. Education, training and human resources are seen as integral parts of the market economy (OECD, 2008). Quality provisioning of education to all children, irrespective of their creed, wealth, or race has become a rhetoric occupying many governments in the developing

countries. While improving educational access for school-age children may be achievable, improving educational quality has proven to be far more complex.

Education is seen as a vehicle for propagating certain societal values and beliefs and has been particularly useful for establishing governments' legitimacy. Education is at the centre of any development agenda. The first generation of African leaders, who were largely driven by politics of nation building, placed their emphasis on education. It is similarly so with the new leadership whose orientation is on economics of nation building (Mkandawire, 2001). Education has been and always will be necessary for explaining whatever structure in which the world is organised. Hence, governments in the developed and developing countries, including South Africa, must be seen to be transforming the education system.

Policies intended to bring about equitable access and enhance quality of education have been developed, but achieving equal access to quality has proven to be difficult to achieve. Policy makers suppose that improved quality would result in higher levels of learner achievement, so that learners can participate meaningfully in the developing economy and increase the system's internal inefficiency. Specifically, the assumption that was often made is that improved quality would lead to reduced repetition.

Within the education system, education policy makers have identified preschool education and the implementation of a reception year (pre-grade 1) as an important vehicle to remediate deficits and address under-preparedness of poor and working-class children. These policies are beginning to show results. A growing proportion of South African children are enrolled in various kinds of ECD programmes. Biesteker et al (2008) estimated that preschool attendance specifically for children under the age of 5 has increased from 16% in 2001 to

22.6% in 2008. Leading educationists such as Jansen (The Times, 23 October 2008), also asserted that ‘putting more money into preschools is the best way to close the rich-poor education divide’.

Even though there has been increased access to preschool programmes and the belief that ECD is beneficial is widely held, there is a lack of rigorous empirical evidence to support this assumption in South Africa. Thus, the question posed in this study is: does preschool attendance improve the internal efficiency in schools? Does attendance at either or both primary preschool programmes or a pre-Grade 1 year reduce the chances that children will repeat? Robust answers to these questions would provide additional evidence to support increased expenditure in this policy area.

This study has made use of a unique dataset, Birth-to-Twenty, which allows the researcher to look closely at the patterns of preschool and primary school attendance and internal efficiency for a typical population of urban South African children. The children are representative in terms of the race, gender, and social economic determinants. The focus of the statistical analysis was on the relationship between attendance in ECD programmes and the impact that this attendance had on patterns of repetition, controlling for background factors.

Much of the literature, both from the US and other developed countries, and now from developing countries, suggests that investing in preschool is an effective way for promoting improved schooling outcomes. From the earliest studies, particularly the Perry Preschool Study (1962) and the Head Start research (1964), the evidence has consistently shown statistically significant improved school and post-school effects for poor and working class

children who attend good quality preschool programmes. Significantly, the Perry Preschool Study showed that preschool attendance could reduce repetition by 21% from 38% to 17%. Leading US economists (Lynch, 2004; Barnett, 1993; Heckman, 2006) have estimated higher returns from earlier investments. For example, Lynch (2004) estimates that providing high quality programmes to the 20% of the poorest three year olds would cost $19 billion a year, but returns in terms of economic mobility would be far reaching. These economists have projected that these programmes would be cost effective in the long run, as they would reduce welfare dependency, remedial schools costs and reduce crime. Similarly, Jaramillo and Mingat (2006) predicted that in the sub-Saharan region, 50% preschool coverage for at least two years could reduce repetition rate by 6.2%. Their estimations are particularly valuable for South Africa in terms of comparisons with the rest of the region.

Learning deficits accumulated by children, particularly those from poor households where they lack early stimulation, make it difficult for them to thrive in their schooling years without repetition. Loeb et al (2007) find that the poorest of the poor children are several months behind their middle class peers in pre-reading and pre-math skills at the entry point to the kindergarten. Preschool adherents argue that a promising strategy to close the achievement gap between affluent and poverty stricken children is attendance in an ECD programme. The difficulty has always been to make the intricate distinction between grade progression caused by teachers' hard work and that influenced by the preschool involvement. Although, we are unable to estimate the preschool impact qualitatively, we are able to observe and attach meaning to the patterns of repetition and make valuable claims about the system's efficiency. This study is largely concerned with bringing South African empirical evidence onto the internationally well-established field and assessing its implication for policy.

## 5.2 Summary of Major Findings

Does the evidence from the Bt20 dataset support this conclusion? For this population of urban South African children, does attending preschool reduce their chances of repeating? The findings of this study confirm that preschool does make a difference conditionally, providing new insights to the international literature.

Overall repetition rate for the children in the Bt20 study is 33.8% or 707, with a difference of 6.6% from the raw data for the two groups investigated. This number increases to 816 when considering the number of years repeated. The findings on the Bt20 data show that investing in a preschool does reduce rates of repetition from 38.2% among non-preschool children to 31.6%, suggesting that preschool attendance is better than non-attendance. While the researcher concludes that the relationship exists it is argued that the significance of a difference of 6% is rather moderate. Findings in this study confirm the hypothesis about the existence of preschool benefits, it is however useful not to overstate them.

Jaramillo and Mingat (2006) predicted that 50% preschool coverage for at least two years could reduce repetition rate by 6.2%. In this study, more than 50% participants attended preschool for at least two years as they indicated that they had attended both pre-grade 0 and grade 0. When using Jaramillo and Mingat's formula, 67.5% preschool coverage ought to reduce repetition at least by 8.4% or more, considering that the children are from the urban Johannesburg metropolitan area. Patterns of repetition in this study reach 33.3% and are far higher than 20.4% rate estimated for the region in 2006. These rates are high bearing in mind

that South Africa has introduced a policy that discourages repetition, notwithstanding the concealment of poor performance in the process.

In this study, patterns of grade repetition are similar regardless of whether/not learners attended preschool. The difference however, is that they tend to be slightly lower among the preschool group throughout schooling grades. Exposure to any form of education, however limited it may be in terms of quality, content and relevance is better than non-exposure, but this difference may remain moderate without improved provisioning. Also, high benefits of preschooling depend on the context in which these services are provided. If primary schooling is in a state of crisis, as alleged by leading researchers in the country, it may be rather difficult for the preschool vim and vigor to persist.

The first three years (1996-1998) mark the highest enrolment of the new entrants for both preschool and non-preschool children in the study. In 1996, a difference between 9.3% and 12.5% in repetition rates was noticeable. These rates were equaled in 1997, but a marked difference of 3.6% and 8.1% resurfaced in 1998. In these two years more non-preschool children repeated. Preschool attendance particularly benefits younger learners. The fact that learners entering preschool at an older age repeat at the same rate as others who did not attend preschool, shows that age does not determine school excellence. It is difficult to apportion preschool progression or lack of it to preschool attendance, if the child entered school at an older age, since older children are less likely to be retained. An explanation for this is that some of the older learners are pushed to the next grade without essentially exhibiting baseline outcomes for the grade, due to sympathy or grade-age appropriation.

There are at least two possible conclusions that can be drawn from this study to guide policy interventions. Firstly, given that children had significant opportunities to attend preschool, the difference made is marginal; it does not warrant the huge attention and much expenditure. Already the country's education system is deficient; adding ECD to a dysfunctional system may prove to be burdensome. Resources wasted on ECD can rather be used to improve primary school education especially since the inputs do not match the outputs. It can be postulated from what is known that preschool impact could be constrained by poor quality of education in primary schools.

Secondly, while the difference is small it is still valuable in efforts to improve schooling. The urgent undertaking to make preschool services available to all children cannot be postponed, especially in the light of globalisation. ECD serves many purposes, including elevating standards of living for the poor children to access nutritional material, etc. Weaknesses in one area of ECD do not legitimise its extinction. Strategies to improve can be pursued and experience can be gained along the way, especially since the findings show that repetition rates are higher among children with no preschool education. A more intensified focus on quality in preschool, increased enrolment and improved primary school quality may improve school's internal efficiency, adding to the cognitive development of those involved. Promoting investments in ECD and espoused improvement on the quality of provisioning should be target specific. Policy makers must know a little more about what quality of ECD could reduce repetition rates.

It has been asserted that preschool programmes have least benefits for children who were exposed to multiple resources at home for advancing early language, pre-reading and math skills (Loeb, et al, 2007). A cross-link or lack of it, between these factors may affect child

cognitive development. Bt20 cohort study presents a strong case for maternal education as a determinant for preschool enrolment and reduced repetition. However there are subtle perceivable educational benefits in terms of progression, even for those parents who attained higher levels of education, which can easily be attributable to preschool enrolment. It is the level of the mother's education, however, that has more impact.

The compelling evidence is that parents' (mothers') education level matters most. Attempts to make quality preschool education available to all children ought to take parents into account. This is in line with how Head Start was structured initially. Increased ECD demands ought to be accompanied by improvement in parental education; whether this would be accomplished through increasing parent's involvement in ABET programmes is beyond the scope of this study. Making ECD available to all children is admirable, but if their parents' education is disregarded it will only yield modest results.

## 5.3 Future Research

Given this insight, I would suggest that more empirical research is needed to test this hypothesis, using multiple variables. Lessons gained in this study suggest that preschool benefits are context specific. Mere attendance, at least in South Africa, did not result in massive benefits for reducing repetition. There are constellations of factors that can contribute to the effectiveness of the preschool programme, including its quality. This research only compared and contrasted patterns of attendance and rates of repetition. Of much concern is the extensive repetition in grades 1 and 2 regardless of preschool participation. The study recommends that there is a need for research on ECD quality impact on repetition and schooling outcomes.

## REFERENCES AND BIBLIOGRAPHY


Anderson, K.G., and Lam, D. (2003). *Dynamics of Family Structure and Progress through School in South Africa: Evidence from Retrospective Histories*. A paper prepared for presentation at the Annual Meeting of Population Association of America Minneapolis, Minnesota, May 2003.

Anderson, K.G., Case, A., and Lam, D. (2001). Causes and Consequences of Schooling Outcomes in South Africa: Evidence from survey data. *Social Dynamics,* 27(1), pp37-59.

Barnett, W.S. (1992). Benefits of Compensatory Preschool Education. *The Journal of* Human Resources, 27(2): 279-312.

Barnett, W.S. (1993). "Benefit-Cost Analysis of Preschool Education: Findings From a 25-year Follow-up", *American Journal of Orthopsychiatry*, 63(4): 500-508.

Barnett, W.S. (1995). Long-term Effects of Early Childhood Programs on Cognitive and School Outcomes. *The Future of Children*, 5(3): 25-50.

Biersteker, L. (2001). Early Childhood Development: A Review of Public Policy and unding. *IDASA.*

Biersteker, L. and Dawes, A. (2008) Early Childhood Development. In: Kraak, A. & Press, K. (eds). *Human resources development review 2008: education, employment and skills in South Africa*, 185-205. Cape Town: HSRC Press.

Biersterker, L., Streak, J., and Gwele, M. (2008). Toward an adequate ECD centre subsidy for children under 5 in South Africa: a costing of centre delivery. In: The Consultative Group of Early Childhood Care and Development *Coordinators' handbook: an international resource for early childhood, 30.Toronto: The Consultative Group on Early Childhood Care and Development, 37 – 45.*

Bruce, F., Liang, X., and Hua. H. (1996). Did Black Literacy Rise After Soweto? *International Journal of Comparative Sociology,* 37(1-2): 97-120(24). BRILL.

Campbell, S.B. (1995). Behavior Problems in Preschool Children: A Review of Recent Research. Journal of Child Psychology and Psychiatry, 36(1): 113-149.

Carneiro, P., and Heckman, J. (2003). Human Capital Policy, Working Paper. *National Bureau of Economics Research.* NBER working paper series. http://www.nber.org/papers/w9495.

Case, A., and Deaton, A. (1999). School Inputs and Educational Outcomes in South Africa, *Quarterly Journals of Economics*, 114: 1047-1084.

Case, A. and Yogo, M. (1999). Does Schools Quality Matter? Returns to Education and the Characteristics of School in South Africa. NBER Working Paper No.7399 (*Abstract*), October 1999.

Colclough, C., and Al-Samarrai, S. (2000). Achieving Schooling for All: Budgetary Expenditures on Education in Sub-Saharan Africa and South Asia. *World Development*, 28(11): 1927-1944.

Colclough, C., and Lewin, K. (1993). Educating all the Children: Strategies for Primary Schooling in the South. Clarendon Press, Oxford.

Crouch, L. (2005). South Africa Equity and Quality Reforms: Possible lessons. *Journal of Education for International Development*, 1(1).

Currie, J. and Duncan, T. (1995). Does Head Start Make A Difference? *The American Economic Review*, 85(3): 341-364.

Davidson et al. (2004). When Do Children Fall Behind? What Can Be Done? *Phi Delta Kappan*, 85(10): 752-762.

Department of Education. (2008). Ministerial Report on Learner Retention in the South African Schooling System. March.

Department of Education. (2008). National Norms and Standards for Grade R Funding. *Government Gazette*. 511(30679). Pretoria.

Department of Education. (2005). Education Statistics in South Africa at a glance in 2004. Pretoria.

Department of Education (2001b). White Paper 5 – Early Children Development: Meeting the Challenge of Early Children Development in South Africa. 436(22756). Pretoria.

Evans J.L. (1996). Quality in Programming: Everyone's Concern, Coordinators' Notebook No.18.

Fleisch, B. (2008). Primary Education in Crisis: Why South African Schoolchildren Underachieve in Reading and Mathematics. Cape Town: Juta.

Fleisch, B. and Shindler, J. (2009) 'Gender repetition: school access, transitions and equity in the 'Birth-to-Twenty' cohort panel study in urban South Africa', Comparative Education, 45:2, 265 – 279.

Garcia, M., Pence, A. and Evans, J.L. (2008). *Africa's Future, Africa's Challenge: Early* Childhood Care and Development. World Bank.

Goodlad, R. (1996). The Housing Challenge in South Africa. *Urban Studies*, 33(9): 1629-1645.

Hagekull and Bohlin, 1995 in Peisner-Feinberg, et al. (2001). The Relation of Preschool Child-Care Quality to Children's Cognitive and Social Developmental Trajectories through Second Grade. *Child Development*, 72(5): 1534-1553.

Heckman, J.J. (2006). *Investing in our Young People.* The American Bar Foundation.

Heckman, J.J. (2008). School, Skills, and Synapses. NBER Working Paper Series, Vol. w14064.

Infobrief (2006). Closing the Gap: Early Childhood Education. *Educational Leadership.* Issue 45.

The Times, 23 October 2008. Putting more Money into Preschools is the Best Way to Close the Rich-poor Education Divide: Simple Steps to Revive Learning, by Jonathan Jansen. *The Times Newspaper, 6.*

Jaramillo, A. and Mingat, A. (2006). Early childhood Care and Education in Sub-Saharan Africa: What Would it Take to Meet the Millennium Development Goals? ADEA, Biennale on Education in Africa (Libreville, Gabon, March 27-31, 2006).

Jimerson, S. R., Anderson, G. E., & Whipple, A. D. (2002). Winning the Battle and Losing the War: Examining the Relation Between Grade Retention And Dropping Out Of High School. Psychology In The Schools, 39 (4): 441-457.

Lam, D., Ardington, C., and Leibrandt M. (2007). Schooling as a Lottery: Racial Differences in School Advancement in Urban South Africa, *Working Paper Number 56.*

Lewil, K.M. (2007). Improving Access, Equity and Transitions in Education: Creating a Research Agenda, CREATE.

Li, K. and Poirier, D.J. (2003). The role of birth inputs and outputs in predicting health, behavior and test scores in early childhood, *Statistics in Medicine*, 22:3489-3515 (DOI: 10.1002/sim.1577).

Loeb, S., Bridges, M., Bassok, D., Fuller, B., and Rumberger, R.W. (2007). How much is too much? The influence of preschool centers on children's social and cognitive development, *Economics of Education Review,* 26: 52-66.

Lynch, R. G. (2004). Exceptional Returns: Economic, Fiscal, and Social Benefits of Investment in Early Childhood Development. Washington, DC: Economic Policy Institute.

Magnuson, K.A., Ruhm, C. and Waldfogel, J. (2007). Does Prekindergarten Improve School Preparation and Performance? *Economics of Education Review,* 36(1): 33-55.

Magnuson, K.A., and Waldfogel, J. (2005). Early Childhood Care and Education: Effects on Ethnic and Racial gaps in School Readiness. *The Future of Children,* 15(1): 169-196.

McMillan, J.H. and Schumacher, S. (2006). *Research in Education: Evidence - Based Inquiry,* Sixth Edition.

Mkandawire, T. (2001). Thinking about developmental states in Africa, *Cambridge Journal of Economics,* 25(2001): 289-314.

Motala, S. (1995). Surviving the system: a critical appraisal of some conventional wisdoms in primary education in South Africa. *Comparative Education* 31: 161-179.

Myers, R.G. (2006). Quality in program of early childhood care and education (ECCE): Background paper prepared for the Education for All Global Monitoring Report, 2007.

Norris, S.A., Richter, L.M., Fleetwood, S.A., 2007. Panel studies in developing countries: case analysis of sample attrition over the past 15 years within the Birth to Twenty cohort in Johannesburg, South Africa. *Journal of International Development.*

OECD. (2008). Reviews of National Policies for Education: South Africa

Padayachee, R., Atmore, E., and Biersteker, L. (1994). Report of the South African Study of Early Childhood Development: Recommendations for Action in Support of Young Children, CEPD.

Parks, G. (2000). The High/Scope Perry Preschool Project. Juvenile Justice Bulletin.

Penn, H. (2004). Childcare and Early Childhood Development Programmes and Policies: Their Relationship to Eradication Child Poverty. *Child Poverty Research Center*, London: Save the Children Fund.

Perry, H. and Arends, F. (2004). Public schooling. In: Kraak, A. (ed.) Human Resources Development Review, 2003: Education, Employment and Skills in South Africa. Cape Town: HSRC Press.

Piaget, J. in Ripple, R.E., and Rockcastle, V.N. (Eds.). (1964). Development and Learning, *Piaget Rediscovered.* Ithaca: Cornell University Press.

Porteus, K. (2004). The State of Play in Early Childhood Development. In L. Chilsholm, (ed.). *Changing Class: Education and Social Change in Post-Apartheid South Africa.* Cape Town: HSRC Press.

Republic of South Africa. (1993). The Constitution of the Republic of South Africa, Act 200 of 1993. Government Printers, Pretoria.

Richter, L., Norris, S., and de Wet, T. (2004). Transition from Birth to Ten to Birth to Twenty: the South African cohort reaches 13 years of age. *Paediatric and Perinatal Epidemiology* 18: 290-301.

Richter, L., 2006. Investment Choices for Vulnerable Children. Paper prepared for Investment Choices for Education in Africa, 19-21 September 2006, Johannesburg.

Richter, L., Yach, D., Cameron, N., Griesel, R., De Wet, T. (1995). Enrolment into Birth to Ten (BT10): Population and sample characteristics. *Paediatric and Perinatal Epidemiology*, 9: 109-120.

Richter, L.M., Norris, S.A., Petti, M., Yach, D. & Cameron, N., 2007. Mandela's children: The 1990 Birth to Twenty study in South Africa. *International Journal of Epidemiology*, 36: 1-8.

Rimm-Kaufman, S.E. and Pianta, R.C. (2000). An Ecological Perspective on the Transition to Kindergarten: A Theoretical Framework to Guide Empirical Research. *Journal of Applied Developmental Psychology,* 21 (5): 491-511.

Rule, P. (2005). Ten years of early childhood development: a case study of Little Elephant Training Centre for Early Education. *Journal of Education*, 35, pp 121-138.
Schlotfeldt, C. et al. (2000). Housing is not about houses: the BOUTEK experience. CSIR Building and Construction Technology, Pretoria

Shaklee, H. (2002). Birth to Three: Extension's Role in the Early Years. *Journal of Extension*, 40(4).

Schargel, F.P., and Smink, J. (2001). Strategies to Help Solve our School Dropout Problem. Eye on Education, ISBN 1930446144, 9781930556140.

Schweinhart, L.J. and Fulcher-Dawson, R. (2006). Investing in Michigan's Future: Meeting the Early Childhood Challenge. The Education Policy Center at Michigan's State University.

Seekings (1996). The 'Lost Generation': South Africa's 'Youth Problem' in the Early-1990s, *Transfomation*

Shonkoff, J.P., and Phillips, D.A. (Eds). (2000). From neurons to neighborhoods: The science of early childhood development. Washington DC: National Academy Press.

Short, A., and Biersteker, L. (1984). Evaluation of the Effect of the Early Learning Centre Centre-based Programmes with Follow-up through Adolescence. Athlone: Early Learning Resource Unit.

Statistics SA. (2005). Census 2001: Prevalence of Disability in South Africa, available at www.statssa.gov.za. Report No. 03-02-44 (2001).

Stein, M.R.S. and Thorkildsen R.J. (1999). Parent Involvement in Education: Insights and Applications from research, *Phi Delta Kappa.*

Taylor, N. and Vinjevold, P. (eds.) (1999). Getting learning right, Joint Education Trust, Johannesburg, South Africa.

UNESCO. (2007). ECCE: a strong foundation, but still rare. Regional Overview-sub Saharan Africa. www.efareport.unesco.org.

Unicef. (2006). Guidelines for Early Childhood and Development Services. Department of Social Development: Republic of South Africa.

Unicef. (2005). National Integrated Plan for Early Childhood Development in South Africa, 2005-2010. Pretoria.

Yach, D. et al. (1991). Birth to Ten: Child health in South Africa in the 1990's. Rationale and methods of a birth cohort study. *Paediatric and Prenatal Epidemiology* 5: 211-233.

White, S.H. and Buka, S.L. (1987). Early Education: Programs, Traditions, and Policies.

Review of Research in Education, 14(1987): 43-91.

Wildeman, R. and Lefko-Everett, K. (2008). Reviewing Provincial Education Budgets, 2004 to 2010. Research Paper: Economic Governance Programme, *idasa*.

Williams, T. and Samuels, M.L. (2001). The Nationwide Audit of ECD Provisioning in South Africa. Department of Education, Pretoria.

## Appendix 1

The researcher visited housing department to ask for official statistics on the state of housing in the country, particularly in Soweto around 1990s (preschool years), and on how the democratic government has improved people's lives, but was told, instead, that this information was not available and that the department was in process of gathering data. The sites below were used to get a general picture. For this reason information should be used with extra caution.

### Non-academic References

http://www.joburg.org.za/content/view/92/58/ Downloaded information on 12 December 2008 from Johannesburg sites.

http://www.joburg.org.za/content/view/1949/204/ Downloaded information on 12 December 2008 from Johannesburg sites.

**Appendix 2**

Formula used for:

GPI = Value of Indicator for Girls/

Value of Indicator for Boys