

INVESTIGATING THE EFFECTS OF REDSHIRTING ON THE ACADEMIC  
PERFORMANCE OF PRIMARY SCHOOL LEARNERS IN WINDHOEK, NAMIBIA

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## **ABSTRACT**

This research study endeavoured to introduce the term and practice of redshirting to local discussions related to school readiness and the best age to send a late birthdate learner to formal schooling. The main objective was to determine whether the practice of redshirting learners made a significant difference in their academic performance when they are compared to those who went to school according to their age. A quantitative research methodology was used, and secondary data, namely school report cards from public and private schools in the boundaries of Windhoek, were employed as a research instrument. The data revealed that a large number of learners in Grades 1, 3 and 5 were overaged. Moreover, at Grade 1 level, both redshirted girls and boys seemed to have a significant advantage in terms of academic performance over those learners who went to school at the age-appropriate time. Additionally, the data suggest that the difference in average academic performance, although still apparent in Grade 3, was substantially smaller, and this difference in academic performance was almost non-existent in Grade 5. Based on the outcome of the study, the matter of redshirting in Namibia requires further investigation, in order to determine how potential extraneous variables would impact the academic performance of learners with last quarter birthdates. Additionally, the research revealed that more should be done in terms of investigating the reasons for the large number of overaged learners in the various primary school Grades.

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## **DEDICATION**

This thesis is dedicated to the loved ones who enrich my life.

To my parents, who have always stood by my and continue to help me in any and all endeavours. Your uncompromising willingness to lend a helping hand, whatever the request, and many a time, even without requesting, has been, and continues to be a constant reminder of the role model I would like to be for my own children one day. Even though this thesis seemed to take forever to come to fruition, you always kept on encouraging me and believing in me. Finishing this thesis would have been impossible without you.

To my husband and children, for their patience and support. Thank you, Andre, for enduring countless frustrating questions about and helping me with statistics and Excel. I am blessed to have you in my life. I hope that this endeavour will inspire my children to work hard towards their goals, realise that everything of substance takes hard work and commitment, and always believe in and follow their dreams.

## **DECLARATION**

I, Jana Vermeulen, declare that this study is a true reflection of my own research and that this work has not been submitted for a degree in any other institution of higher education.

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Date

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 INTRODUCTION**

This research sets out to deal with an ambiguous dilemma regarding the most beneficial age for learners to be sent to school in terms of long-term academic performance. This is especially the case for those learners who have birthdays late in the year; therefore, making them the youngest in their class or Grade.

In this chapter, the orientation of the study is clarified and the problem statement addressed. The research objectives, as well as the proposed hypothesis, are also defined. Lastly, the significance of the research to the Namibian context is considered, a definition of terms is given and the division of chapters is presented.

‘The early bird catches the worm’

- Proverb

‘The early bird catches the worm, but the second mouse gets the cheese’

- Proverb expansion

## 1.2 ORIENTATION OF THE STUDY

John Ray first recorded the proverb, the “early bird catches the worm” in a collection of English proverbs in 1670 (2015). The inference that can be made from this proverb is that a person would have an advantage if he or she does something before anyone else or that the person who arrives first, is the one who is successful. The proverb assumes that in life, success comes to people who reach for it ahead of others. As such, by being early in whatever we do, we get the opportunity of being noticed. On the other hand, the expansion of the same proverb, mentions how the mouse who came second got the cheese, thereby suggesting that sometimes in life it is smart to learn from the risks of others and the mistakes that they make.

Redshirting could, therefore, be regarded as the antithesis of the early bird catching the worm and presumes that being the proverbial “mouse that gets the cheese”, serves individuals better. In respect to education, being one of the oldest in an academic environment, it supposedly gives individuals an academic edge, as they would have learned and prepared more than the early birds, those assumed to be less “ready”.

The age at which learners should enter formal education has been of interest to policy makers, educators, parents and researchers for many years (Katz, 2000; Stipek, 2009), and seems to be an ongoing debate among educationalists and researchers alike. The Namibian Education Act, act 16 of 2001 informs parents that school attendance is compulsory for every learner from the beginning of the year in which the learner turns

seven (Republic of Namibia, 2001). However, when deciding at what age a learner should enter Grade 1, it seems that it may have become an arbitrary and accepted practice for parents and a common recommendation by teachers and educational professionals that learners be kept back one additional year when they have birthdays in the last quarter of the academic year or close to the start of Grade 1 (Huang, 2015). This practice of keeping learners back to gain an academic advantage is referred to in the literature as “redshirting”, and seems to have become prevalent internationally (Dougan & Pijanowski, 2011; Huang, 2015, & Katz, 2000). According to Huang (2015), this practice and recommendation may be based mostly on unreliable evidence, convenience samples with limited generalisability or endorsements given by individual teachers or parents. The rationale for keeping learners back one year may also be based on the social and economic pressures to perform and deliver, as noted in a study by Kniffen and Hanks (2013).

In Namibia, those birthdates close to the cut-off date would range from 1 September to 31 December or the last quarter of the academic year. Upon reviewing the Education Act, act 16 (Republic of Namibia, 2001), it became evident to the researcher that, at a National level, Namibia has no available data about the practice of redshirting nor is there proof of any awareness of this term and that this practice exists. The Education Management Information System (EMIS), an information system division of the Ministry of Education, Arts and Culture, explains that, by law, children can only enrol in Grade 1 in Namibia, if they have turned six years of age before 1 January of the year in

which they are enrolling in Grade 1. Therefore, the majority of learners who turned six after 31 December 2014 could not be taken into Grade 1 in the year under review. In Namibia, the official theoretical age for Grade 1 is, therefore, seven years. Most of the six-year-olds in Grade 1 are enrolled in private schools (Republic of Namibia, 2017).

However, from the researcher's experience as a Grade 1 teacher, it seems as though it is becoming accepted and even encouraged to send learners with birthdates late in the year to school one year later in order for them to gain an academic advantage. Since there is no available local evidence to support this notion, the researcher wants to investigate if, indeed, the practice of redshirting is prevalent in Namibia and whether it benefits Namibian learners, in terms of boys' and girls' academic performance over an extended period of time.

In Namibia, no defined phrase or terminology exists for the practice of keeping learners, who have last quarter birthdays back an additional year, in order for them to gain time to mature and catch up. In the USA, the term "redshirting" is commonly used and refers to "the gift of time" in educational circles, reflecting an opinion that learners who have birthdays close to the start of a new academic year, have been allowed to mature another year and will subsequently perform better academically (Deming & Dynarski, 2008).

This term originated from tertiary level sports and has been adopted by educationalists. In a sporting context, Katz (2000) explains that redshirting refers to the practice where

an athlete's participation in regular season games is postponed for one year to give him or her an extra year of growth and practise with a team in the hope of improving their skills for the future. The reasoning behind redshirting a learner comes from the belief that older learners are more successful in coping with the social, emotional and academic demands of school-life. This practice is mostly employed when learners have birthdates close to a specific "cut-off" date, otherwise making them the youngest in the class (Katz, 2000). Moreover, this practice has been found to affect boys more commonly than girls, as indicated by various researchers (Bassok & Reardon, 2012; Deming & Dynarski, 2008, & Graue & DiPerna, 2000). According to Deming and Dynarski (2008), this practice is not necessarily attributed to school entry laws but rather based on the perceptions of parents and teachers, namely that boys with birthdates late in the year are less likely to be ready for Grade 1 than girls with the same birthdates. However, this seemingly universal tendency of keeping learners back is not new, but has steadily been on the increase since the 1980's, according to research done by Graue and DiPerna (2000). Up to date, it is yet to be determined whether this is also the case in Namibia, specifically in Windhoek, for boys and girls entering Grade 1 in primary schools.

Deming and Dynarski (2008) found that there is little evidence that being older than one's classmates has long-term, positive effects on adult outcomes, such as intelligence, earnings or educational attainment. Interestingly, they note that by contrast, substantial evidence exists, which indicates that entering school at an older age, later reduces

educational achievement. Katz (2000) also notes that, although there are proponents and opponents for redshirting young learners, the research on “redshirting” has so far failed to provide a clear picture of its short and long-term effects and has been inconclusive.

In this study, the researcher wishes to compare two opposing groups to determine the long-term effects of redshirting in primary school. The first group will include learners with birthdates ranging from 1 September to 31 December, who did not start Grade 1 in the year in which they turned seven, as they ought to have but only started Grade 1 the following year when they turned eight. This group will be referred to in the study as the “redshirted” learners. The opposing group will be referred to as “on-time” learners, and will include learners with birthdates which also range from 1 September to 31 December but who started Grade 1 in the year in which they turned seven.

### 1.3 STATEMENT OF THE PROBLEM

During a popular American news programme, 60 Minutes (CBS News, 2012), presenter Morley Safer brought to light the practice of redshirting, which seems to be a point of keen interest among parents of young children in America. This programme debated the concept of hyper-parenting, where parents were inclined to do anything they could to ensure academic success for their children. Redshirting forms part of one of those tactics, which could be employed to assist parents in this quest. There seems to be a clear disconnect between what research demonstrates and what parents and educators

believe regarding the benefits of redshirting children. This disconnect is evidenced in several studies related to redshirting (Furlong & Quirk, 2011; Huang, 2015; Katz, 2000, & Kniffen & Hanks, 2013).

Research conducted in the United States of America by Deming and Dynarski (2008) suggests that this controversial trend, where parents make decisions about when their children should enter Grade 1, is not necessarily based on their own child's age but the age of their classmates. Parents do not want their children to be the youngest in the class, as it is the perception that being older might give them an academic advantage. Parents believe that older peers out-compete their younger peers, both academically and physically. While the label and reasoning behind this practice may vary, the destination is the same, where learners enter Grade 1, historically the entry point for formal education, a year later and older than the norm. Entering school a year older may have some unfavourable effects. Learners reach the rest of life's milestones a year later. This includes entering the labour force, earning a salary and having to compete in "older" and different age groups as compared to their Grade peers in organised sports. In addition, they run the risk of being bored or under-stimulated during their school years (Deming & Dynarski, 2008). Graue and DiPerna (2000) maintain that academic redshirting is very much part of a popular culture and only recently has it received this much attention in academic literature. Due to its prevalence in contemporary views on early childhood and the potential impact on young children, their families and educational settings and

policies, it necessitates a clear examination of the practice and its subsequent effects on individuals and groups of children.

According to Namibian statistics, during 2014, only about 24% of primary school learners were in the appropriate Grade for their age (Education Policy and Data Centre of Namibia, 2014). Moreover, the Educational Management Information System (EMIS) indicates that during 2017, Grades 1, 5 and 8 had relatively high numbers of repeaters, with Grade 1, specifically, showing worrying repetition rates of 20% and Grade promotions of 78%. According to this information, these statistics can be regarded as an indication that the beginning of a new school phase is likely to pose challenges to learners, thus more effort is required to make sure that the gap in enrolment is bridged (Republic of Namibia, 2017).

Overage due to poor academic performance and not meeting the minimum requirements for passing a specific Grade, will not be reviewed and considered in the current research, but mention of how it could impact the findings of the study will be made later on. Overage in itself, has implications for both the education system where curriculum programmes should be adjusted along with the standards of achievement and classroom dynamics, which would include boredom, frustration and social adjustment. It is, however, not possible from the above-mentioned statistics to specifically determine why these learners were not the appropriate age for their Grades. Up to date, no research in the field of redshirting has been conducted in Namibia.

Another document published by EMIS in 2016, referred to as the Fifteenth School Day report for 2016 indicates that, in the Khomas region, a total of 8143 Grade 1 learners were enrolled (Republic of Namibia, 2016). Of those, 4032 were female learners and 4111 were male. A year later, in the same report, EMIS collected data that indicated more growth in Grade 1 applications, with 8784 learners enrolling for Grade 1, with 4447 being female and 4337 being male. Although these statistics are valuable in order to determine how to support the educational needs and demands of both educators and learners, it is still not known how many children in Grade 1 are going to be turning seven during that year, and if not, why not.

Although it is evident that research needs to be piloted to bring more clarity to the question of why learners are not the correct age for their Grades, the primary purpose of this study will be to examine the effects that learners' birthdates and chronological ages at the time of their enrolment in Grade 1 have had on their long-term, academic performance. The research aims to investigate whether the anecdotal practice of redshirting learners, especially boys, is significantly associated with on-going and long-term academic performance, more so than if they started their schooling "on time". The researcher will investigate the academic performance of boys and girls across a five-year primary school period to determine whether there were any significant academic advantages between those learners who went to school on-time or those who were redshirted. A five-year period should allow the researcher to track changes,

improvements and regressions over a longer period and, consequently, make the findings more reliable.

#### 1.4 RESEARCH OBJECTIVES

The following research objectives will guide this research:

1. Determine whether there were significant differences in academic performance across Grades 1, 3, and 5 between learners who were redshirted and those who went to school at an age-appropriate time.
2. Establish whether and how differences in the academic performance of the two groups could change across Grades 1, 3 and 5.
3. Determine whether there was a significant gender difference in the academic performance of redshirted boys and girls compared to on-time boys and girls.
4. Ascertain whether age at Grade 1 enrolment influenced the prediction of academic performance at the end of Grades 1, 3 and 5.

The following hypothesis, will, therefore be considered:

The Null Hypotheses:

1. Ho: There is no significant difference in the academic performance as measured across Grades 1, 3 and 5 between learners who were redshirted and those considered as on-time learners.

2. Ho: There is no significant difference in the academic performance of boys and girls who were redshirted as measured across Grades 1, 3 and 5.

### 1.5 SIGNIFICANCE OF THE STUDY

Up to date, no research concerning school starting age, while considering redshirting, has been conducted in Namibia. Furthermore, much of the current international literature is outdated. This study aims to shed light on the practice of redshirting and the assumption that enrolling learners late gives them an academic edge. The purpose of this research is also to add to the international body of literature related to academic redshirting.

The researcher aims to bring clarity to the dilemma of when, according to a child's birthdate, he or she is best suited to enter formal education, namely Grade 1, in Namibia, and whether keeping the child back, based on a birthdate in the last four months of the academic year, makes a significant difference in terms of his or her academic performance. It is envisaged that results from this study might influence and/or benefit government, policy makers and educationalists in terms of designing accurate age-related, cut-off dates, as well as guiding parents about their decisions regarding when their children should start Grade 1, based on local evidence.

It might reveal that learners who are redshirted based on last quarter birthdates perform the same, better or worse academically at school than their younger, on-time peers, and this might affect school entrance procedures and policies in schools in Windhoek, Namibia, as well as the perceptions and opinions of teachers and parents. Additionally, based on the research of Deming and Dynarski (2008) that boys are more often redshirted than girls, the researcher will also attempt to determine whether this is the case for male primary school learners in Windhoek, Namibia.

In accordance with Graue and DiPerna (2000), we should work towards combining wisdom from a variety of perspectives to enable us to address the subtle nuances of redshirting in order to understand it in all its complexity. Currently, however, redshirting, as a practice, seems to be promoted through informal communication and folk wisdom, and needs to be seriously examined to understand the implications for individuals, families and institutions.

## 1.6 DEFINITION OF TERMS

This study will define terms as follows:

- Cut-off dates relate to the age when a learner must attend a certain Grade. In Namibia, the Namibian Education Act, act 16 of 2001 informs parents that formal school attendance is compulsory for every learner from the beginning of

the year in which he or she attains the age of seven years (Republic of Namibia, 2001).

- Redshirting originated as a term from college sports, where a redshirt (noun) was “a high-school or college athlete” kept out of university competition for one year to develop and increase his or her physical and sport-related skills. Such athletes wore red shirts during practices (Gladwell, 2009).
- Academic redshirting is the practice of postponing age-eligible learners’ kindergarten entry by a year, typically when they have a birthdate close to the cut-off date of the school of their choice (Graue & DiPerna, 2000). For the purposes of this study, the term ‘redshirting’ has been adopted for the practice of keeping back an additional year, those children who have birthdates in the last quarter (1 September until 31 December) of the previous year and are meant to enter Grade 1, in order for the learner to be school ready. Moreover, for the purposes of this study, ‘academic redshirting’ will only be referred to as ‘redshirting’, as is also done in existing literature and research.
- On-time learners will, for the purposes of this study, be regarded as learners who started Grade 1 during the year in which they turned seven, as stated by the Namibian Education Act, act 16 of 2001 (Republic of Namibia, 2001) even though their birthdays fell between September 1<sup>st</sup> and December 31<sup>st</sup>.
- Kindergarten is a term that was invented by Friedrich Froebel in 1840 in Germany, and refers to the one or two years before Grade 1 (Babel, 2017). In the

Namibian context, it would be referred to as pre-primary. Although in most of the literature, redshirting is referenced in terms of the kindergarten phase, in this study the focus is placed on Grade 1, yet the premise of the practice of redshirting remains relevant and applicable as it is described when referring to kindergarten.

### 1.7 STRUCTURE OF THE STUDY

In the first chapter of this thesis, the orientation of the study was defined and, as such, included the statement of the problem, the research objectives and the significance to the study in the Namibian context. The second chapter will deal with the theoretical framework and literature review. In the third chapter the research methodology and ethical considerations undertaken will be examined. Research findings will be presented in the fourth chapter. The fifth and final chapter will discuss the findings and results of Chapter 4 and elaborate on the recommendations and limitations of the study. A closing statement about the study will also be made.

### 1.8 CHAPTER SUMMARY

This chapter allowed the researcher to present an overview of the study, as well as the problem statement addressed in this research. The research objectives were indicated and the significance of this study to the Namibian population was expressed. The next

chapter explains and defends the theoretical basis on which the research study is grounded, as well as outlines available research around the topic as was available in the literature at the time of study.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

The literature review examines theoretical perspectives of child development as it relates to school readiness and looks at the academic implications of redshirting. Redshirting refers to the practice of holding an age-eligible learner back from kindergarten entrance an extra year to give him or her more time for socio-emotional, academic or physical growth (Frey, 2005; Shepard & Smith, 1989). Furthermore, this chapter aims to provide background to the notion and convention of redshirting internationally and highlights the contradictory findings for and against it.

#### **2.2 THEORETICAL FRAMEWORK**

“It’s not about what it is. It’s about what it can become”

Dr Seuss

Child development has both a long philosophical and scientific history and has made many relevant contributions to the full range of academic disciplines, as well as major areas of applied research (Woodhead, 2006). In this research, the focus is placed on theories related to redshirting. It is important to compare and contrast the theoretical underpinnings for and against this practice to come to a better understanding of the rationale behind the choices made in this regard. Contrasting views regarding the rate at

which intellectual development takes place exist and, therefore, either support or deny the validity of redshirting. Consequently, it is necessary to delve into those theories to gain a better understanding of the rationale behind the practice of redshirting.

### 2.2.1 GESELLS'S MATURATIONAL THEORY OF CHILD DEVELOPMENT

On the one hand, there are theorists who follow a philosophy regarding early-childhood education that views the child as a growing organism and holds that the role of education is to support this growth passively rather than to fill the child actively with information. One such theorist was Dr Arnold Gesell who introduced the maturational theory of child development. Graue and DiPerna (2000) assert that redshirting has maturational views of development at its foundation. The maturational theory posits that all children go through similar and predictable sequences, albeit at their own pace. Arnold Gesell was the first theorist to study the stages of development and the first researcher to demonstrate that a child's developmental stage may be different from his or her chronological age (Gesell Institute of Child Development, 2012). Gesell believes that the environment has an influence on development but that biology has the biggest influence. Each child's unique genetic and biological makeup, according to Gesell, determine the rate of development and, therefore, the environment should be changed and adapted to meet the individual biological or genetic needs (Gesell Institute of Child Development, 2012). According to this theory, development precedes learning; consequently, from this perspective, redshirting makes sense.

As Gesell's theory indicates that development depends on maturation, he has specified that in order for instruction to be effective, it should follow this developmental sequence. Any type of instruction that is introduced prematurely would cause the children to be disillusioned and frustrated. The children's readiness for learning needs to be identified prior to presenting work or instruction (Saracho, 2017).

### 2.2.2 TRANSITIONING TO THE DEVELOPMENTAL THEORY OF PIAGET

Following the work of Gesell, researchers and educators later, during the 1960's, began to apply and use Jean Piaget's developmental theory as the basis from which they viewed a child. Saracho (2017) recognises that, according to Piaget, children utilise their experiences to construct their knowledge, based on several developmental levels, which are greatly influenced by maturational factors. Instead of offering experiences that will help children progress to advanced levels of development, it is more conducive to match the children's experiences to their existing levels of development. The children's educational experiences, therefore, need to be developmentally appropriate.

Although the maturational view and Piaget's developmental stages were popular in psychology from the 1930's onwards, today's frameworks offer some contrasting perspectives to child development and school readiness, rather than being primarily maturational and developmental in nature (Graue & DiPerna, 2000). That being said, the norms Gesell established and the stages of development proposed by Piaget are still employed by psychologists, educators and paediatricians today to predict developmental

changes and to note when follow-up evaluations of development may be warranted. (Oliveira, 2018).

### 2.2.3 ALIGNING WITH THE SOCIO-CULTURAL THEORY OF VYGOTSKY

A view contrasting the maturational theory is the socio-cultural perspective regarding child development, which posits the opposite of maturational views. According to socio-cultural perspectives, learning precedes development; this draws the attention to the work of Lev Vygotsky. The socio-cultural theory by Vygotsky attempts to account for processes through which learning and development take place. This theory points out that cognitive development is not seen as unfolding in a biologically driven sequence, but as a result of interactions within a cultural and historical context. Here, learning is seen as leading to or fostering cognitive development (Shabani, Khatib, & Ebadi, 2010). The current research is grounded on this socio-cultural theory.

Vygotsky's socio-cultural theory regards readiness to learn as the instance where and when learners are successfully able to interact with their peers and their environments. Vygotsky's perspective on human development and learning offers a very different perspective from that offered by earlier, western, psychological theories. According to Gibbons (2015), the socio-cultural theory sees human development as social rather than individualistic. An individual's development is thus, to a significant extent, a product, and not a prerequisite, of education; consequently, the result of his or her social, historical and cultural experiences. Therefore, as put by Gibbons (2015), when taking

language acquisition as an example, it is clear that, while we are all biologically able to acquire language, as well as decide what language we learn, how adept we are at using it and the purposes for which we are able to use it, is a matter of the social contexts and situations we have experienced. In a very real sense, what and how we learn depends very much on the company we keep.

Based on this theory, the decision to send learners to school will be based on their readiness to learn and not on the assumption that “older is better”. The tendency of redshirting assumes that all learners with late birthdates will not cope with the demands of formal schooling, and this is contradicting the ideas of scaffolding. Vygotsky (as cited by Black, Devereux, & Salvanes, 2008), in his view of readiness to learn, postulates that learning, development and readiness for new learning often require guidance and instruction and not simply the passage of time. The practice of redshirting learners, therefore, contradicts Vygotsky’s view to some extent.

#### 2.2.3.1 CONSTRUCTION OF KNOWLEDGE ACCORDING TO VYGOTSKY

This research is an attempt to establish to what extent redshirting may or may not benefit learners academically. According to the social cultural theory, focus should be placed more on the school being ready for the learner and not only the learner being school ready (Black et al., 2008). Early childhood education should focus on providing young learners with the social opportunities and scaffolded school experiences they need to develop the abilities that we want to see in Grade 1 and beyond (Carlton & Winsler,

1999). The scaffolding technique assumes a non-directional style of assisting children in tasks that provide a high degree of support for their self-regulation and autonomy. During scaffolding, a teacher controls the difficulty of a task in a sensitive way to keep the task at an appropriately challenging level for the learner. The teacher also monitors and regulates the amount of adult assistance provided to the learner, contingently withdrawing adult support as soon as the learner's task competence increases (Jaramillo, 1996).

When a young learner encounters difficulties in the learning process, the social constructivist approach is applied neither to label nor retain the learner, but instead to allow the learner some individualized attention and tailor the classroom or school curriculum to help her or him overcome or support these difficulties. Here, the concept of scaffolding comes into action. Scaffolding is the focal point of the social constructivist paradigm. It is the researchers' view that, if there are no other emotional or physical contributing factors preventing school readiness, through scaffolded experiences in a school setting learners would be able to learn those skills necessary for successful participation and achievement in school. Viewed from this perspective, delaying or redshirting a learner because he or she has been identified as being unready to participate, is denying that learner entry into the very environment and learning situation that he or she needs to gain the skills deemed necessary to function optimally in school. Readiness, therefore, is regarded by Carlton and Winsler (1999) as being bi-

directional, in the sense that children do not merely grow into readiness but, rather, that they should be exposed to situations with more knowledgeable peers and adults who can assist in their development of the necessary skills. In respect to the Vygotskian theory, these more knowledgeable others (MKO) play an invaluable role in the development of the young child. According to Blake and Pop (2008), a more knowledgeable other (MKO) refers to someone who has a better understanding or a higher ability level than the learner, with respect to a particular task, process, or concept. Important to mention to them is that, although the implication is that the MKO is a teacher or an older adult, this is not necessarily always the case. Many times, a child's peers may be the individuals with more knowledge or experience depending on the particular task or activity they are busy with. This is especially pertinent in the pre-school years where children learn much of what they need through play and this is either done alongside or with a peer (Blake & Pop, 2008).

Moreover, another key component of Vygotsky's social constructivist theory is that of the Zone of Proximal Development (ZPD). The most familiar description of the ZPD, according to Newman and Holzman (2014), is that it is a collective activity, where the creating of the 'zone' produces the learning and development of an individual simultaneously. They refer to Vygotsky's work on ZPD and explain that, according to

Vygotsky, every function in a child's development appears twice. According to Newman and Holzman (2014), development first appears on a social or inter-psychological level, and only then on an individual or intra-psychological level. The ZPD requires adults or peers to provide assistance to learners who cannot complete the assigned task without help. The ZPD is the gap between what learners are able to do independently and that with what they may need help (Blake & Pop, 2008). Shabani et al. (2010) postulate that, when trying to understand the ZPD, we should look at the way a learner's performance is socially mediated. That is, how shared understanding or psychological relations between people have been achieved through moving the learners from their current capabilities to higher, culturally mediated levels of development.

In the socio-cultural theory, the learner is an active participant in the learning process and guides his or her own learning, with the support of more knowledgeable peers or adults; this is referred to as scaffolding. It is widely believed that the socio-cultural theory and the concept of ZPD form the basis of the notion of scaffolding (Shabani et al., 2010). The major goal of scaffolding in teaching is the transfer of responsibility from the task to the learner, where the emphasis is on the collaboration between the teacher and the learner. Shabani et al. (2010) define scaffolding as a way of operationalising Vygotsky's concept of ZPD.

The most salient characteristic of scaffolding, according to and as described by the research of Mahzan and Wu (2009), is that it provides clear directions about what to do

in order to meet the expectations for a task or learning activity. They, furthermore, contend that scaffolding clarifies the purpose of doing a particular task in order for it to be relevant to the learner. A third characteristic put forward by Mahzan and Wu (2009) is that scaffolding keeps learners on task, thereby guiding them to learn to focus on what is relevant or not and to become efficient in whatever they are attempting. Finally, Mahzan and Wu (2009) state that scaffolding allows learners to clarify expectations in order to know the criteria and standards of quality work and results. Vygotsky showed that young children learned collectively through their relationships with the varying levels of skill, knowledge, expertise, ability and personality of other people. They learn by doing with others what they do not know how to do (Newman & Holzman, 2014). This view relates to the learners' current or actual level of development, as well as to the next level which is attainable via scaffolding through the assistance of more knowledgeable adults or peers. The idea is that individuals learn best when working together with others during collaboration and it is through such collaborative endeavours with more skilled persons that learners learn and internalise new concepts, psychological tools and skills (Shabani et al.,2010).

Roosevelt (2008) holds that the main goal of education, from the Vygotskian perspective, is to keep learners in their own ZPDs as often as possible by giving them interesting and culturally meaningful learning and problem-solving tasks that are slightly more difficult than what they can do by themselves. This will allow them to work together either with one another, more competent peers, a teacher or adult to finish the

task. The aim is that, after completing the task with some-one, a learner will likely be able to complete the same task individually next time; through that process, the learner's ZPD for that task would have been raised (Shabani et al., 2010). From this perspective, in terms of school readiness, as well as being the relatively youngest learner in the class, those learners should be able to hold their own in a classroom with older peers, as they would be receiving support relevant to their skill set and abilities. The current research was undertaken from the social constructivist perspective, where policies and practices are related in complex ways in social and cultural contexts in terms of school readiness and academic performance.

### 2.3 THE HISTORY OF REDSHIRTING

Katz (2000) describes the term redshirting as originally involving the postponement of a college athletes' participation in regular season games for one year to give them an additional year of growth and practise. The premise of this is that, with more time and being older, one would indeed be "better". As mentioned earlier, this term was borrowed, adjusted and coined as 'academic redshirting', and accounts for academic advantages in terms of age. Academic redshirting, as described by Katz (2000), refers to the practice of postponing the school entry of children who are age-eligible for school, to allow them additional time to grow intellectually, socio-emotionally and physically. This practice is most often employed when children have birthdates close to a country or school's cut-off date, and ensures that they are no longer the relatively youngest in their Grade peer group.

Malcom Gladwell's 2009 bestselling book, "Outliers", and a 2006 study by Kelly Bedard and Elizabeth Dhuey on initial maturity differences having long lasting effects on student performance, have in some instances been credited with putting redshirting on the radar of, especially, American communities (Wong, 2015); however, as the literature shows, redshirting, although it might not have existed as that term, has its origins as far back as the 1970's (Babel, 2017). Similarly, Dougan and Pijanowski (2011) have found that the practice of redshirting is not new. Research indicates that it was employed even further back, albeit sparingly, in the 1970's and grew in popularity in the 1980's. In that decade, specifically in 1988, researchers cited an increase in older kindergarteners as being one of the driving forces behind the increased academic demands of kindergarten (Dougan & Pijanowski, 2011; Graue & DiPerna, 2000).

The Outlier's book by Gladwell (2009) has, according to reports on the news programme 60 Minutes (CBS News, 2012), become the bible for parents of four and five year olds. In this programme, Malcom Gladwell refers to the concept of cumulative advantage, which refers to the idea that a little extra nudge ahead when you are six could mean that you might be a little better positioned when you are seven, eight and so on. This, according to him, is linked to the field of ice-hockey in Canada, where Gladwell reported that most of the Canadian all-star hockey players had one thing in common, namely, that they were born in the first six months of the year. He asserts that the simple explanation for this is simply that, by being older, one appears to be better. Moreover,

Gladwell (2009) contends that these early advantages would not dissipate but rather have a snowball effect and that, therefore, in an academic context, the same would apply. Children born early in the year, the relatively oldest in their classes, have a small but not insignificant advantage throughout their schooling history. In Gladwell's opinion, the sentiments and information in his research, should potentially put parents at ease and allow them to feel less anxious about the dilemma of when to send their child to Grade 1. This, however, is not the case, as the variation in opinions and findings on redshirting are inconsistent and offer striking contradictions.

In 2009, a report titled "Crisis in the Kindergarten" warned that kindergarten in the United States had drastically changed over the past two decades and that developmentally appropriate learning practices, which were based on play, exploration, and social interactions had been replaced with highly academic and prescriptive, curricula-test preparation. An explicit focus on academic skill building seemed to be prevailing in kindergartens. It called for a "reversal of the pushing down of the curriculum that has transformed kindergarten into de facto first Grade" (Miller & Almon, 2009). Although anecdotal accounts from teachers and parents describe kindergarten classrooms as characterised by mounting homework demands, worksheets and pressure to learn to read as early as possible, there is surprisingly little empirical evidence about the extent to which kindergarten classrooms have changed over time (Bassok, Latham, & Rorem 2016).

Kindergarten classrooms with older learners allow teachers to teach at higher academic levels, which could have had detrimental effects on the younger learners in the class. Literature suggests that kindergartens have started to expect that learners should be ready when they come to school, instead of acquiring that readiness in kindergarten (Graue; 1992). From this perspective, it is argued that readiness is amendable only to the passage of time and therefore, when in doubt, delaying the next step is the most logical answer. In the 1990's this trend of redshirting continued to grow and gain popularity (Graue & DiPerna, 2000). Trends towards higher expectations in earlier Grades coincided with more parents across the United States choosing to redshirt their children (Dougan & Pijanowski, 2011).

Interestingly, in the past, parents typically chose to send their children to school at a younger age to give them a lead, but more recently the trend seems to have reversed (Bassok & Reardon, 2012). In part, this shift in age in America is explained by changes in school entry laws and cut-off dates between 1975 and 2000, where 22 of their 50 states increased the minimum entry age for kindergarten (Stipek, 2002). Yet, school policy changes or shifts still only partially explain why children are entering school at a later age. When parents make, decisions regarding kindergarten entry, or in the Namibian context, when to send their children to Grade 1, they are likely to be influenced by their neighbours, friends, family and preschool teachers. Norms around redshirting are likely to differ meaningfully across communities (Bassok & Reardon, 2012).

## 2.4 REDSHIRTING AND RELATIVE AGE

When one reviews literature related to redshirting, one finds that the matter of relative age and its impact on learning are mentioned regularly. Relative age is the age of a child compared to the age of all the other children in the class and is also referred to in the literature as the birthdate effect. The evidence on the impact of relative age on learner learning trajectories is mixed, and recent research (Black et al., 2008; Deming & Dynarski, 2008; Dobkin & Ferreira, 2010) suggests benefits from delayed school entry may be counteracted by losses associated with one less year as part of the working class. Similarly, research by Bassok and Reardon (2012) shows that any potential benefits from delayed school entry may also be neutralised by costs with one less year as part of a work force. There is, however, robust evidence from around the world that, on average, the youngest children in their year group at school perform at a lower level than their older classmates; this has been referred to as the “birthdate effect” (Sykes, Bell, & Rodeiro, 2009).

For years, evidence of the birthdate effect has stemmed from qualifications data. Much of this data suggest that children, who have birthdates closest to a cut-off date for school entry, are strongly disadvantaged (Sykes et al., 2009). Correspondingly, as mentioned, during 2008 and 2009 there seemed to have been a flurry of press interest in redshirting following the release of Gladwell’s *Outliers* book, and has now become a key part of

recommendations made regarding school entry age (Sykes et al., 2009). The findings in his book clearly indicate that being older than your class peers gives you a cumulative academic advantage (Gladwell, 2009).

Dougan and Pijanowski (2011) comment on the fact that relative age was first mentioned around sports, specifically professional hockey players. In their research, they found that many of the elite players in those hockey teams were older than the others and that their birthdays were close to the initial cut-off dates for an age group. They were consequently 'held back' a year before they joined a team, where they then showed notably better performances. Dougan and Pijanowski (2011) employ this background to illustrate a similar scenario in school when children enter as the oldest ones in the class. According to them, these older children are usually more mature and show behaviour that is more conducive to scholastic success than the younger learners in the class. This would include aspects, such as concentration, being able to sit still and better fine motor skills, all of which should contribute to academic success. Consequently, these older and 'better' learners are chosen for higher reading and maths groups where they will be more challenged and possibly gain greater skills. This is then where the hockey effect is relevant. As in the case of the older hockey players, these learners appear to be academically stronger and, therefore, receive more academic extension and, thus, experience success which, in turn, breeds more confidence and, consequently, more success. This cycle is likely to continue, and these children are then considered the 'best

and brightest' in their class groups. In these cases, normal child development patterns might be confused with academic talent (Dougan & Pijanowski, 2011).

Therefore, if relative age affects school success, it could have detrimental effects for those learners who are, by no fault of their own, the youngest in the class (Dougan & Pijanowski, 2011). Bedard and Dhuey (2006) maintain that, if children from low socio-economic families end up being the youngest in the class, they are at an additional disadvantage because of relative age effects, probable less preschool experience and less acquisition of school readiness before kindergarten. This is particularly relevant to the Namibian context where many children come from lower socio-economic backgrounds.

Age is merely one, albeit important, of an infinite number of factors that could have an impact on determining academic but also general success. Moreover, it appears that no clear verdict is available in terms of whether one should be for or against the practice of redshirting in terms of a learner's relative age. Despite this, parents and teachers alike continue to recommend and practice redshirting, based on widespread, questionable support for this practice.

## 2.5 REDSHIRTING AND SCHOOL READINESS

Every year many parents grapple with the decision whether they should send their children to school or redshirt them. With few conclusive studies available on this

phenomenon, parents approach the decision with emotion, distress and limited facts. One way that this distress has been counteracted is by utilising school readiness assessments and assertions.

Historically, readiness has been defined as two separate concepts, namely readiness to learn and readiness for school. Readiness to learn is regarded as a level of development at which the individual can learn about and employ specific topics, materials and tasks, whereas readiness for school indicates that the individual will also be successful in a “typical” school context (Carlton & Winsler, 1999). This assumes that school readiness is both inherent in the child and that the child must change to fit into an existing, homogeneous and relatively static school programme and environment. These assumptions are well fitted to the earlier mentioned maturational perspective where development precedes learning and, in the researcher’s experience, are still being held in many primary schools in Windhoek.

The definition of school readiness has undergone major shifts during the past four decades. In a conceptual framework of school readiness, Britto (2012) states that participants in the field of early child development have been reluctant to define school readiness (Saluja, Scott-Little, & Clifford, 2000 cited in Britto, 2012). This trend seems to have changed considerably and Britto (2012) has found close to 150 definitions of school readiness by means of the Google Scholar search application. It has changed from a primarily, maturational definition to a more socially constructed concept, where

learners and educators are partners in the learning process. Former approaches stressed the maturity level of the child as the most important facet in being school ready (Gesell Institute of Child Development, 2012; Pandis, 2001), whereas more recent approaches stress the bi-directionality between the child and her or his environment (Murphy & Burns, 2002). In other words, school readiness can be regarded as the product of the interaction between learners and the range of environmental and cultural experiences and support provided, to maximise their development. This view of readiness echoes the underpinnings of Vygotsky's theory of socio-cultural constructivism.

School readiness is gaining currency as a viable strategy to close the learning gap and improve equity in achieving lifelong learning for young children (Britto, 2012). The simplicity of the term, "school readiness", belies the complexity of the concept and its relevance for development. However, this growth of information about school readiness has not been disseminated equitably or widely, and many regions of the world do not have access to the latest information. Thus, although school readiness and its importance and relevance to academic achievement and success have been emphasised, the lack of equitable access to new information has led to multiple understandings of school readiness and, at times, to practices based on outdated models (Britto, 2012).

According to the National Institute for Educational Development (NIED), school readiness in Namibia is considered as the stage when a child can grasp those concepts and skills that are necessary for more formal learning in Grade 1 (Republic of Namibia,

2011). These considerations are based on the whole-child approach where every aspect of the child is studied, and learning activities are planned to consider the child's physical, social, emotional and cognitive development.

Success in school is determined by a range of basic behaviours and abilities, including literacy, numeracy, as well as the ability to follow instructions, work well with other children and engage in learning activities (Rouse, Brooks-Gunn, & McLanahan, 2005). According to Britto (2012), school readiness should be a holistic way of looking at children's preparedness for school, and not limited to one area of development or functioning. Rather, readiness should embrace the interrelationships between skills and behaviour across domains of development and learning (Denton, West, & Germino-Hausken 2000). Moreover, Britto (2012) reasons that school readiness skills should be considered as cumulative, in that there exists a hierarchy of achievement based on mastering earlier goals. In this sense, readiness combines learning and development because achieving simpler skills allows for the acquisition of higher and more complex skills. Children entering primary school, for example, need to have a working vocabulary to master reading skills. In other words, learning achievement in school is the product of a process of acquiring skills from birth. Complex and advanced skills build upon the mastery of former skills.

School readiness is the foundation of equity and quality education. It means gaining global support as a viable means to help young children reach their potential and engage

in lifelong learning. School readiness is linked to improved academic outcomes in primary and secondary school and positive social and behavioural competencies in adulthood and can, therefore be seen as building human capital in order to address economic development (Britto, 2012). Some studies have examined the effects of redshirting that occur immediately or in the early primary school years while others have examined its long-term effects. Advocates and opponents of redshirting often employ the same evidence but reach opposite conclusions. It is, therefore, unclear whether redshirting solves the problems of school readiness (West, Meek, & Hurst, 2000).

There are various ways to assess whether a learner is ready for school, but age is employed most often to determine eligibility. Current school readiness practices for entering Grade 1 in Windhoek fall into one of two categories. In the first category, a parent takes a learner for a school readiness assessment, where the child is tested and it is decided by that school, based on the assessment results, whether their child will be able to enter Grade 1 successfully the following year at that particular school. The second category is where parents or guardians enter their child's name on a list, often referred to as a waiting list, and wait for a response whether the child has been given a placement in Grade 1 at that school for Grade 1 the following year, all the while taking the child's age into account.

One of the first and most understandable attempts to ensure a minimum maturity level in all kindergartens or, in this case Grade 1, is to establish a cut-off date of birth. The

learner is, therefore, required to be a specific age before being able to enrol. In the United Kingdom, the school year starts on the 1<sup>st</sup> of September and their subsequent cut-off date is in August (Sykes et al., 2009). In America, it differs from state to state, although most states have September 1<sup>st</sup> as their cut-off date (Education Commission of the States, 2014).

In Africa, there are varying policies and laws that determine when learners should enter Grade 1. According to the Independent Schools Association of South Africa (ISASA), a body with which most private schools register, a learner may start school at the age of five-and-a-half, provided he or she turns six by June 30<sup>th</sup> of their Grade 1 year. On the other hand, government schools in South Africa are governed by a law, as stipulated by the Education Act of South Africa, act 84, that a child must start school by the year in which he or she turns seven (Republic of South Africa, 1996). Moreover, in South Africa no child may be tested for school readiness unless he or she has already been accepted by the school. The Department of Education claims that denying a learner school entry on the basis that he or she is not deemed “school ready” is discriminatory. In this case, it is up to parents to decide when their child should start school within the government’s framework (Shaw, 2017). According to the Namibian Education Act, school attendance is compulsory from the beginning of the year in which children turn seven (Republic of Namibia, 2001).

School entry age has understandably been a major topic of discussion among parents, teachers and school management staff, especially when related to the practice of redshirting. Parents of children whose birthdays are close to the cut-off date often choose to hold back their children for them to gain this perceived extra edge of another year of maturation before going to school (Carlton & Winsler, 1999). According to the researcher, parents are worried about the child's relative position in his or her class. Mixed evidence for the support of redshirting learners to ensure school readiness and success exists. Based on the research of Deming and Dynarski (2008) there is no evidence of a lasting benefit to education or earnings from being older than one's classmates. Furthermore, Stipek (2009) notes that, according to her extensive research, the problem is that a substantial variation in readiness will be found, regardless of the age at which a learner can enter formal education. In her opinion, age will always be a weak predictor of readiness. Additionally, one should consider whether older learners perform better academically by the mere virtue of being older when they are assessed or whether they are in fact academically more skilled.

Contrastingly, the question can be posed whether learners who start school early necessarily do worse. An earlier start may imply more time for the individual to develop skills. Given the variable ages of eligibility for Grade 1, the true underlying relationship between academic success and birthdates which leads to redshirting, becomes an empirical question.

In the researcher's experience, preschools have shifted the focus from play-based learning to 'getting the child as ready' as possible to test well in school readiness assessments in order to progress to Grade 1. In Namibia, only private schools make use of school readiness assessments to place learners in Grade 1. Those who have their own pre-primaries naturally give preference to their own learners in those pre-primary classes, whereas others without their own pre-primary feeder schools make sure to select those children who test best on their school readiness measures. Public schools in Namibia, on the other hand, have a waiting list, where parents fill out the application forms for a specific primary school and each school employs their own procedure to then inform parents whether their child has been placed at a school without any screening or school readiness procedure, thereby not knowing what the prospective learners are capable of.

Carlton and Winsler (1999), consequently, make a case for the fact that current school readiness practices focus on the instance of a child being able to demonstrate readiness before entering school and that assessment practices ultimately follow from this design. These school practices where readiness is tested seem unjust as, essentially, children go to school to learn and, in essence, become 'ready', yet now they need to be 'ready' without having attended formal schooling. As a result, parents experience post-school readiness assessment anxiety, with the fear that their child might not get into a primary school. These school readiness practices also reinforce the need for redshirting since not being 'ready' can be justified by purely being young when compared to class peers.

These children might have been 'ready', but other impacting factors, like perceptual and/or language delays or difficulties, as well as learning difficulties which are influential factors, might have been overlooked and not addressed, because too much focus was placed on the birthdate factor.

The researcher experienced practical instances where learners who scored poorly on a school readiness assessment and were consequently held back because, coincidentally, they had a birthday late in the year, entered Grade 1 a year later, without marked improvements in their academic performance. It is argued that, indeed, the evaluation of individuals in the context of standards of readiness is what drives the practice of redshirting (Graue & DiPerna, 2000).

## 2.6 THE PREVALENCE OF REDSHIRTING

Bassok and Reardon (2012) assert that estimates about the prevalence of redshirting vary substantially and that it is not nearly as common as some popular accounts would suggest. Most of the available research and evidence are in the American context, yet it is still valuable to note the discrepancies between study findings and research. According to the American programme, 60 Minutes, on CBS News which was aired in 2012, redshirting has more than tripled since the 1970's. Moreover, Oshima and Domaleski (2006) reported that 22% of Grade 1 children were seven years or older, with

a 13% increase from 1970 and that 6 to 9% of kindergarten-aged children in the United States started Grade 1 a year late.

Bassok and Reardon (2012) described the prevalence of redshirting and determine who redshirted most. They also explored the impact of redshirting on the composition of kindergarten groups. These researchers observed the month of birth, the state in which the child lived, as well as whether the child was eligible for kindergarten according to state cut-off dates in two nationally representative datasets of the Early Childhood Longitudinal Study. Their findings indicate that redshirting varied substantially across gender, race and socio-economic status. The prevalence of redshirting in the same study indicates a mere 4 to 5.5% of children delaying kindergarten at a national level. These results suggest that, while redshirting substantially impacts the child's initial standing in a kindergarten group, it does not widen the achievement gaps of such a group meaningfully because the incidence of redshirting is low enough. Bassok and Reardon (2012), therefore, argue that, although a case can be made for redshirting, it seems as though in their research not enough children were redshirted in order to generalise their findings to the wider population in terms of redshirts significantly outperforming on-time children academically.

In Namibia, the term, redshirting, is not known or utilised, and up to date no evidence exists regarding whether parents and teachers do redshirting, to what extent it is done or who is more likely to be redshirted. The only statistics available relate to those learners who are old for their Grades, but it is challenging to find information as to why these

children are older than the appropriate age for their Grades. According to the Education Policy and Data Centre of Namibia (2014), there is evidence that indicates that 74% male and 68% female primary school learners are over-age, where over-age is regarded as one or more years older than they ought to be. Moreover, only an estimated 24% of primary school learners were the appropriate, official age for their Grade. These statistics beg questions about the composition of primary school Grade classes and the contributing challenges. One could argue that, with these imbalanced age distributions in primary school classes, teachers are faced with having to teach a more diverse group of learners with differing levels of maturity and school preparedness.

In terms of classroom composition, the state of primary schools in Namibia has large discrepancies amongst them, as the difference between state and private schools are momentous and even amongst public and private schools respectively, disparities exist. This encapsulates everything from teacher competence and training, to parental involvement to curriculum outcomes and multi-level teaching. In terms of teacher competencies, although not documented and focused on in this research study, teachers in private schools in Windhoek, typically have more support from the school structures in which they teach as well as access to resources, should they need additional professional development in order to cope with the challenges of differencing levels of preparedness and maturity in one classroom. Moreover, parental involvement is typically more prevalent in private schools and should difficulties in terms of readiness or reaching minimum requirements in terms of academic performance come to the fore,

these challenges are more often addressed and alternative arrangements and support is arranged for. What complicates and exacerbates the discrepancy between the how children perform academically, is that no curriculum outcomes are measured against national standardized measurements, making it challenging to determine whether a minimum standard of competence in the respective Grades in the different primary schools are achieved.

A variety of researchers report and emphasise that boys, white children and children from families with more resources are most likely to be redshirted (Bassok & Reardon, 2012; Dougan & Pijanowski, 2011; Oshima & Domaleski, 2006). Indeed, the literature seems clear about the fact that boys, as opposed to girls, are more likely to be redshirted. According to the CBS news programme, 60 Minutes (2012), boys, as opposed to girls, are more than twice as likely to be redshirted. Moreover, the National Centre for Education Statistics also found that boys were more often redshirted than girls (Katz, 2000). Bassok and Reardon (2012) found evidence that girls were more likely to start kindergarten before they were legally eligible. In the same study, parents were asked whether they would send their children, who were not yet born, to school on time if they had birthdates close to cut-off dates. Interestingly, yet similarly, parents responded that if they had girls 4.3% of them would redshirt and if they had boys, 7.8% of them would consider redshirting (Bassok & Reardon, 2012).

In terms of race, Bassok and Reardon (2012) found that 6% of redshirts were white in comparison to less than 1% of black learners. The differences across racial groups were particularly striking, according to these researchers' findings. Moreover, they report that black (4.6%) and Asian (5.8 %) children were more likely to go to school earlier than their legal eligibility age when compared to white (1.1%) and Hispanic children (1.7%).

As mentioned earlier, redshirting has traditionally been more common in affluent communities and for children attending private schools, although some scholars speculate that there may have been a recent increase in certain public school districts in America (Brent et al., 1996 cited in Katz, 2000). Dougan and Pijanowski (2011) show growing evidence that learners who come from lower socio-economic backgrounds are not usually redshirted, as it is an expensive practice. Since these learners typically enter formal education with less exposure and fewer literacy skills, they generally also perform poorer, making them the youngest and the weakest and most at risk learners, academically, something the Namibian context may be able to relate to. Although parents from low socio-economic backgrounds are likely to be concerned about their children's readiness, they are far more likely, according to Bassok and Reardon (2012), to enrol them early or on-time, often due to childcare costs involved when school entry is delayed.

Although the term, redshirting, is not employed by parents or educators in Namibia, in the researcher's experience learners and, more specifically, boys who have birthdays

later in the year, especially during the last quarter of the year, are more likely to be held back an additional year before starting Grade 1. Moreover, no evidence in the researcher's personal experience exists about race affecting the probability of redshirting, although in the case of parents with a higher socio-economic status, regardless of race, they seem to be more aware of and involved in the decision and possible impact of redshirting a learner. This information is based purely on the researcher's own experience with school readiness assessments and placement into Grade 1 at two private schools in Windhoek and, therefore, should only be taken at face value.

Debates about redshirting have been proliferated on parent forums and internet blogs, academic journals and in many a classrooms and carpark gathering. Based on the plethora of opposing literature and information available, combined with individual opinions based on personal experiences, parents, educators, policy makers and perhaps even economists want a verdict on the merits of this practice. Since parents are the primary decision makers when it comes to sending their children to school on-time or not, it is assumed that when parents are counselling other parents about delaying school entry, like-minded parents follow suit. This, says Dougan and Pijanowski (2011), can create a de facto school policy in communities where a significant percentage of parents choose to redshirt their children merely because other parents are making the same decisions.

## 2.7 ACHIEVEMENT OUTCOMES OF REDSHIRTING

Research on redshirting has so far failed to provide a clear picture of its short-and-long-term effects (Katz, 2000). Some researchers have examined the effects of redshirting that occur immediately or in the early primary school years (Dougan, & Pijanowski, 2011; Furlong & Quirk, 2011). Others have examined its long-term effects (Dobkin & Ferreira, 2010; Kniffen & Hanks, 2013). Proponents and opponents of redshirting often employed the same evidence but reached contradictory conclusions. It is unclear whether redshirting solves challenges of school readiness and increased academic performance (Katz, 2000).

Graue and DiPerna (2000) found that many of those who advocate redshirting suggest that redshirters will outperform their peers and be at the top of the class. While other researchers' work on school readiness conflicts (Carlton & Winsler, 1999; Deming & Dynarski, 2008; Furlong & Quirk, 2011). Graue (1993) found that learners who were redshirted because of having birthdates close to the cut-off time, did not appear to have any significant academic advantages over the other group of learners who went to school on-time, even if they had birthdates close to the cut-off date. Interestingly, Carlton and Winsler (1999) found that the age of school entry did not necessarily influence learners' academic progress and well-being. Their research discovered that younger learners in the classroom make just as much progress academically and socially as their older classmates in the early Grades.

Oshima and Domaleski (2006) conducted a study in which they evaluated large scale test data from Grades 0 to 8, to determine the difference in academic performance between children born in the first 6 months of the year and those born in the last six months. The performance gap for the older children was evident in kindergarten but decreased rapidly in Grades 1 to 3, although it persisted until Grade 5 after which it levelled off in Grades 6, 7 and 8. They concluded that the performance gap in the early Grades that resulted from birthdate was much larger than the gap caused by gender differences. Furthermore, evidence on the impact of relative age on long-term learner trajectories appears to be mixed. Bedard and Dhuey (2006) show that in Canada and the United States, older students are more likely to take the Scholastic Assessment Test (SAT) or the Standardised American Collage Tests (ACT), both necessary to gain entrance and acceptance into universities. Moreover, they are also more likely to enrol for an average of four years at university after completing high school.

Although not academic, yet a related aspect to success is that of leadership. In a study by Dhuey and Lipscomb (2008), they make a case for the fact that leadership roles may also be based on age. In their study, they found that older students occupied more leadership roles in high school than younger students in the same Grade. Their findings postulate that age was the determining factor in terms of occupying a leadership position regardless of other factors such as socio-economic status (Dhuey & Lipscomb, 2008).

Various consequences due to redshirting exist. In terms of classroom dynamics, older learners may be affecting the curriculum, teaching methods, expectations, social dynamics and levels of interest, and the teacher will have to accommodate the older learners (Dougan & Pijanowski, 2011). Moreover, by allowing or encouraging parents to manipulate the age rank of their child in the classroom, schools may set off a cycle of social pressures that steadily pushes up the age of learners at school entry, to the detriment of the school in general.

Bassok and Reardon's (2012) findings indicate that, by delaying kindergarten, those who are redshirted may be contributing to an expansion of the skill distribution in classes and Grades. Consequently, patterns of redshirting learners may also lead to a widening of achievement gaps among children when they enter kindergarten. As an educator, the researcher experienced exactly this. Older, more mature learners in a class led her to subconsciously or consciously raise classroom standards, leading to increased pressure and, in some cases, Grade retention for learners who entered school at the age-eligible time. This, according to Deming and Dynarski (2008), creates a self-reinforcing dynamic where parents will always try to have their children be the oldest in class, leading to standards rising and, ultimately, the age of the entire class.

Clearly, there are many conflicting findings about when to send a child to Grade 1 and when they would in fact gain the most from formal education. According to Dougan and Pijanowski (2011), the research is clear. They argue that, for parents who have children

with birthdays close to a schools' cut-off date, it is better for a child to be the oldest in the class as opposed to the youngest. On the other hand, a study published in the journal of Contemporary Economic Policy about whether redshirting is likely to affect the likelihood of obtaining a PhD qualification, led to another view of redshirting. In this relatively new study, two researchers, Kevin Kniffen and Andrew Hanks (2013), wanted to determine whether redshirting had an influence on the likelihood of obtaining a PhD. In the United States, less than 2% of the population are PhD holders. One could, consequently, argue that this reflects only on the strongest and most exceptional learners who would be able to achieve this. Their study concluded that redshirting had virtually no impact on whether a PhD was attained or not. According to Kniffen and Hanks (2013), their study is compelling enough to suggest that all the “when to send your child to school” uproar might be a little exaggerated. Alia Wong, a writer for *The Atlantic*, asserts that these findings offer striking contradictions to pervious analyses on redshirting in America (2015).

Parents might argue that academic competitiveness and performance are not the main reasons for redshirting their child and that they consider many other contributory short and long-term factors. Although for some it might not be the most important factor, there is research available indicating the academic advantages of redshirting. Denton, West, and Germino-Hausken (2000), for example, specifically note that in the short-term, redshirting has been found to raise achievement scores, specifically in the maths, reading and general knowledge of redshirted learners. This finding is based on a national

study of kindergartners, their schools, classrooms, teachers and families, with a nationally representative sample of approximately 22 000 kindergartners in 1998. Although this marked difference between redshirted and on-time learners might have been the case in the kindergarten phase, and accounting for the fact that this information is outdated, other research has found that in Grades 1, 2 and 3 the academic achievement of redshirted learners is nearly equal to on-time peers (West, Meek, & Hurst, 2000).

Other researchers also found that older learners did perform better academically. Lin, Freeman, and Chu (2009) utilised the data of the Early Childhood Longitudinal Study Kindergarten class of 1998 – 1999, and they found that the older a learner was at the beginning of kindergarten, the better his or her reading and mathematics scores were. They also found that this trend of redshirts outperforming on-time learners continued into the upper primary Grades, although the differences between redshirted and on-time learner performance were less evident. Moreover, the same researchers also studied the academic attainments made by each age group during the year. During the first two academic years, the redshirted group made the biggest gains in reading and mathematics. In Grade 3, the trend reversed and the on-time students made the most academic progress, although the progress was similar in all age groups. In Grade 5, the trend continued with younger children making more achievements in test scores, while the redshirted group showed fewer achievements (Lin et al., 2009).

Although it then seems that the on-time students were performing better academically than the redshirted learners, a closer examination of the test scores reveals that the redshirted group had a higher mean test score than the on-time group. Therefore, although the on-time learners might have shown more academic achievement when compared to the redshirted groups, it was due to the fact that they had more of a gap in learning to overcome in order to catch up with the older learners in the Grade. The data in this study clearly show that redshirted learners had higher test scores in reading and mathematics at the end of Grade 5. Although the younger learners had increased achievement outcomes, they were unable to catch up to the higher academic levels of the redshirted group (Lin et al., 2009). Gender and race were naturally also affected when comparing redshirted and on-time learners. Yesil-Dagli (2006) found that white boys who were redshirted outperformed redshirted white girls. In the case of African-American learners, he found that the effect was reversed and that redshirted girls achieved better academically than redshirted boys.

Intervention or learning support evidence seems inconclusive in terms of whether it is beneficial to redshirt or not. Some research indicates that redshirted children are less likely to receive or need special education or learning support (Kundert, May, & Brent, 1995) yet others found that in some cases redshirts needed more intervention and special education services than on-time children (Graue & DiPerna 2000).

Kniffen and Hanks (2013) suggest that, based on the outcome of their research, it is far from clear whether relative age had a bearing on a child's future success. Today many discerning parents are consumed by employing a variety of tactics to give their child an edge to be successful. Bassok and Reardon (2012) note that, although their data reflect several limitations, their findings nonetheless suggest that at school level, redshirting does not relate to meaningful differences in the distribution of cognitive scores at school entry. These admittedly crude results show that, even at school level, redshirting is not associated with meaningful changes in the composition of class groups and, therefore, that policy implications of current redshirting practices are more limited than what media reports suggest.

Graue and DiPerna (2000) question whether one would ever be able to determine whether redshirting has empirical support. According to their research, the most salient group for comparison is other children who have similar risk factors, for example, those with similar birthdates but different years of entry into Grade 1. For redshirts, a good comparison is summer-born children who would be considered the youngest in a class and who entered school on-time. This research endeavoured to investigate the same comparison as Graue and DiPerna (2000). In this research study, their findings were based on their study of 8000 students in the Wisconsin school district in America. The achievement of the on-time children was mostly indistinguishable from the redshirts. Moreover, they found that redshirting was strongly influenced by community notions of child development and the role of adults in supporting that development. The current

research was based on children who had birthdays in the last quarter of the academic year and either went to school the following year, being the youngest in the class or those in the same group who then waited an additional year before entering Grade 1.

## 2.8 CHAPTER SUMMARY

This chapter reviewed the theoretical framework upon which this research was built. Following that, it reviewed the history of redshirting, redshirting related to school readiness and the way in which relative age influences redshirting. Additionally, the prevalence and consequences of redshirting were discussed. It seems fitting that even with the plethora of literature available and until we know more about that, as pointed out by Graue and DiPerna, we should question the wisdom of the adage, “When in doubt, hold them out” (2000).

In the following chapter, the research methodology will be delved into and elaborated on accordingly. In conclusion, it is clear from the literature reviewed here that delaying school entry is a matter that should be carefully considered, as most literature offers inconclusive results.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

In this chapter, the research design is clarified, along with an explanation of the population and sample, the way in which the sampling procedure took place and which research instruments were employed.

The data collection procedures, as well as an in-depth description of the methods employed for the data analysis, are subsequently discussed. Lastly, the ethical considerations adhered to in the study are mentioned.

#### **3.2 RESEARCH DESIGN**

In this quantitative research study, an ex-post facto, cross-sectional, comparative research design was employed. Cross-sectional studies compare samples from separate, yet distinguishable, sub-groups in a population who frequently differs in age and gender groups. These groups differ in the variable being measured but share other similar characteristics (Coolican, 2009). A comparative design was chosen as it seeks to find the relationships between independent and dependent variable after an action or event has already occurred. It identifies the nature of the relationship or can also examine the consequences of the differences that already exists between the two groups.

In terms of the ex-post facto research, it is utilized to test hypotheses about cause-and-effect or comparative relationships and employs data that have already been collected, for groups with qualities that already exist and are compared to a particular dependent variable. (Simon & Goes, 2013).

Due to time constraints, a cross-sectional, as opposed to a longitudinal, research study was chosen. Cross-sectional studies compare samples drawn from separate, distinguishable, sub-groups in a population, very often different age groups, as was the case in the current study. Cross-sectional studies take groups of people, in this case learners from public and private schools in Windhoek, who fall in different Grade and age bands, and compare them at the same moment in time. Coolican (2009) mentions that both age and gender are common focus groups for cross-sectional studies. This approach enabled the researcher to evaluate the effects of redshirting across a five-year time span, to determine whether significant academic advantages existed for redshirted learners in a short period of time.

### 3.3 POPULATION

The population of this study was made up of all the learners in Grades 1, 3 and 5 in Windhoek. Presently, there are 63 primary schools in Windhoek, which include both

public and private schools, and an estimated 8000 learners formed part of the population of the study.

#### 3.4. SAMPLE AND SAMPLING METHOD

The sampling procedure started off by randomly selecting primary schools from the population mentioned above. Schools were, therefore, representative of a variety of socio-economic backgrounds, varying parental involvement and differing teacher-learner ratios, among other extraneous variables. Purposive, criterion sampling was used to select a total of learners from Grades 1, 3, and 5, where the researcher purposively determined criteria, in this case birthdates, specifically last-quarter birthdates ranging from 1 September to 31 December and specific primary school Grades. Purposive, criterion sampling was employed as the researcher set predetermined criteria and then investigated them in a specific set of people according to the needs of the study (Coyne, 2008). Moreover, Grades 1, 3, and 5 classes at each primary school were also randomly selected. In most cases, class or register lists, where an entire class group of learners with their names and birthdates, were collected. From those lists, boys and girls in Grades 1, 3 and 5 who had birthdays ranging between 1 September and 31 December were identified. Those learners were selected as their birthdates were closest to the cut-off time for entering Grade 1 the following year, the year in which they would turn 7. Literature indicates that those learners with birthdays close to the cut-off date benefit, among other things, academically from being redshirted (Dougan & Pijanowski, 2011).

Stratified, purposive sampling was employed to create the two groups to be investigated, namely, redshirted learners and on-time learners. The purpose of a stratified, purposive sample is to capture major variations rather than to identify a common core, although the latter may also emerge in the analysis. Each of the strata would constitute a relatively homogeneous sample.

Redshirted and on-time learners were in the same Grades but the redshirted learners were one year older than their on-time counterparts because of being kept back from formal schooling for one year. Learners from each of the criterion groups were randomly selected from each class. As mentioned, those learners from Grades 1, 3 and 5 identified from the class lists and registers according to birthdates ranging between 1 September and 31<sup>st</sup> December were then grouped accordingly. If these learners entered Grade 1 in the year that they had turned seven, they would be amongst the youngest in their class. If those learners from the same groups with the same range of birthdates entered Grade 1 in the year that they had turned eight, an additional year later, that would make them part of the oldest learners in the class, categorising them as the redshirted group of learners. Initially, the researcher aimed to collect 200 learners from each Grade (1, 3, 5 and 7) where 100 learners were redshirted and 100 enrolled in Grade 1 on time. This would have amounted to a sample size of 800 in total.

Once the researcher started with the data collection, it became apparent that most schools were unable to provide school reports of their 2014 Grade 7 learners, as they had left the primary school and, in most cases, moved to a high school that did not have an affiliation with the school in question. Collecting data for the Grade 7 group, therefore, became problematic and the researcher felt that it would be best to discard the Grade 7 group, as the data to be collected for that Grade would be very limited and not representative of that part of the population of the study. The researcher assumed that this would affect the generalisability, reliability and validity of the data. To account for this aspect and to keep the sample size large enough to reduce the effect of extraneous variables, data were collected only from Grades 1, 3 and 5 but the amount of data collected per Grade was increased. The researcher collected as many as possible randomly, selected redshirted and on-time learner report cards for Grades 1, 3 and 5. Excel spreadsheets were then compiled to categorise the data. A total of 394 learners were included in the redshirted group and 553 learners were included in the on-time group, comprising a total of 947 learners in the study. The SPSS programme and tests run account for different sample sizes.

As the initial sample size was large and sampling was conducted by means of random sampling, the researcher is confident that this would have minimised the effect of the extraneous variables. Coolican (2009) asserts that larger sample sizes increase the power of statistical tests and, therefore, make the likelihood of detecting, in this case significant comparisons between redshirted and on-time learners, more likely. It is assumed, that

because of the variety of schools included in the study from different sections of Windhoek, each group of redshirted and on-time learners come from different socio-economic backgrounds, with distinctive input from school and home, as well as personality variables, such as motivation, perseverance, self-concept and many others.

As many as possible children who fell in the two categories, namely having birthdays between September 1<sup>st</sup> and December 31<sup>st</sup>, who either went to school on time or were kept back an additional year, were selected. This increased the likelihood that the two groups could be considered equal, except for their ages. The large sample size, selected randomly, within the limits of the criterion of birthdates, was intended to increase the reliability and validity of the findings.

### 3.5 RESEARCH INSTRUMENTS

The researcher made use of secondary data, as learners' 2014 school report cards were utilised. The physical report cards of all learners selected served as the only research instrument in this study. Most schools allowed the researcher to make hard copies of the report cards of the purposively, selected learners in Grades 1, 3 and 5 who had birthdays between 1 September and 31 December. The schools in question allowed the researcher access to the identified children's cumulative record cards which contained their academic history which included all their previous academic reports. Their end of 2014 report cards were consequently copied at the respective schools. In two instances, schools only provided the researcher with school report schedules on which the entire

year's marks were indicated and, thus, it served the same purpose as a school report card. The independent variable in this study was learners who had been redshirted or went to school on-time and the dependent variable was the academic performance of the above-mentioned criterion groups as measured in Grades 1, 3 and 5 as documented on report cards.

### 3.6 PROCEDURE

Ethical clearance was applied for and obtained via the University of Namibia (see Appendix 1). Next, a letter (see Appendix 2) requesting permission to conduct research, together with the obtained ethical clearance and approved University of Namibia proposal, was submitted to the office of the Permanent Secretary of Education, Ministry of Education, Arts and Culture. After permission was granted from the Permanent Secretary (see Appendix 3), this permission, ethical clearance from the University of Namibia and the researcher's proposal were handed in to the Khomas Regional Council. Here, the director of Education, Arts and Culture granted permission to conduct research at randomly selected schools (see Appendix 4).

Subsequently, primary schools in Windhoek were randomly selected by pulling their names out of a bag. Individual appointments with principals of the selected schools were arranged accordingly. The researcher sketched the background regarding the premise and purpose of the research for the principals and, in some instances, the school

guidance counsellors. As the researcher had no direct contact with any learners, only the principals needed to give informed consent for the learner data to be viewed and employed. The permission was given by all the principals of the schools involved. Consequently, relevant learners were identified and the final 2014, third term academic progress reports were copied and safely stored by the researcher for data analysis purposes only. The researcher examined the academic performance differences between redshirted and on-time learners in Grades 1, 3 and 5 in this cross-sectional study. The end of 2014 annual school report cards of the sampled learners were obtained as requested from schools. Learners were sampled based on their birthdates. To qualify, learners had to have birthdates which fell between September 1<sup>st</sup> and December 31<sup>st</sup>.

### 3.7 DATA ANALYSIS

This study analysed data according to the quantitative research method where focus is placed on gathering numerical data and generalising these across groups of people or to explain a phenomenon.

#### 3.7.1 QUANTITATIVE ANALYSIS

The departure point of the analysis was to create an Excel spreadsheet. On a main Excel spreadsheet, all identifiable data were initially entered to account for information that might be needed at a later stage. Information, such as names and surnames, birthdates, primary schools, whether it was a public, private or state-funded school and the number

of days which a learner had been absent, were included. Columns for all the respective subjects were then created. Initially all subjects, indicated on the school report cards, whether promotional or non-promotional, were included. The researcher wanted to ensure that all available data were initially captured. It would then enable a holistic view of the information collected. The researcher could subsequently determine which data would be included in the final analysis.

After reviewing some of the report cards from the different schools included in the sample, it became clear that the data were not homogeneous and would consequently be difficult to analyse. The researcher found that some schools and/or Grades worked either with symbols or percentages or both. Initially, both symbols and percentages were entered. The researcher, therefore, had to develop a formula in Excel, where a rubric of averages was created. This meant that a symbol was awarded a certain percentage range. This allowed the researcher to convert the symbols into percentages for the data to be standardised and comparable. In some cases, primary schools had developed their own rubrics where they indicated what a specific symbol amounted to in a percentage value and, in the case of those schools, the researcher utilised that rubric to convert the symbols. This was done on an additional Excel sheet, linked to the main data sheet, which then converted the symbols into percentages. The researcher employed v-lookup formulas (e.g. =VLOOKUP (AM950,'Symbol Values'! \$A\$3: \$D\$8,4,0) that would convert all symbols to percentages in order to standardise the data as far as possible. In other instances where no explanation was given in terms of the quantifiable percentage

for a given symbol, the researcher developed a formula that was based on those schools who had indicated a symbol on the percentage conversion rubric, depending on whether it was a public or private school.

The Excel sheets, therefore, had to be designed in such a way that they would account for all the differences. For each respective subject, four columns were created. These columns were named Terms 1, 2 and 3, as well as yearly average. Under each of the four columns, there were two rows, where either a percentage or symbol could be entered. In some cases, the report card already had yearly averages, but in other cases the researcher had to calculate the subject mark averages for each subject by utilising a formula. This was done for all learners in Grades 1, 3 and 5. Initially it was also done for all subjects indicated on the respective report cards.

After accounting for differences between schools in terms of symbol or percentage allocations, the researcher noted too much variety in terms of subjects. For the data to be as uniform as possible, the researcher attempted to identify comparable subjects among schools. The researcher identified two groups, namely promotional versus non-promotional subjects. As the research aimed to look at the influence of redshirting on academic performance, the researcher would, therefore, only include promotional subjects in the main analysis. Those promotional subjects were the subjects that influenced or not whether a learner passed a Grade at the end of an academic year to move on to the next Grade. These promotional subjects also had to be comparable across

schools; consequently, the researcher identified subjects that were constant among all schools in order to compare them. The promotional subjects that were included in the data analysis were English 1<sup>st</sup> and 2<sup>nd</sup> Language, Afrikaans 1<sup>st</sup> and 2<sup>nd</sup> Language, Mathematics and Social Studies. Only in Grade 5 was Natural Science also included.

The non-promotional subjects which were identified for both redshirted and on-time learners included subjects, such as Art, Physical Education, Religious and Moral Education, Drama, Music, Basic Information Science, Life Skills, Design and Technology, Home Ecology, Elementary Agriculture and Do-it-yourself.

To separate the two groups in Excel, the researcher made use of data filters, and filtered according to the Grade, as well as the year in which the learner was sent to school. This resulted in two sub-groups per Grade, where Grade 1 had a redshirted and on-time group, Grade 3 had a redshirted and on-time group and Grade 5 had a redshirted and on-time group. As mentioned, the promotional subjects that were included in both of the sub-group analysis included a 1<sup>st</sup> Language, 2<sup>nd</sup> Language, Mathematics and Social Studies. Science was also included, but only in Grade 5. It is important to note that in the analysis of the data, two categories of averages were created. These categories were named Average 1 and Average 2. Average 1 included all subjects (Mathematics, Social Studies, Natural Sciences {only Grade 5}) but with English as a 1<sup>st</sup> and Afrikaans as a 2<sup>nd</sup> language. Average 2 also included all of the subjects (Mathematics, Social Studies, Natural Science {only Grade 5}).

The next step was to transfer all the Excel data to the SPSS programme. SPSS (Statistical Package for the Social Sciences, Version 24) is a very powerful statistical package and was utilised to quantify and calculate the comparison of the two groups being compared. All data that were captured in Excel were transferred into the SPSS programme, and all identifiable data were removed. Names of learners and schools were no longer available, thereby accounting for the ethical considerations undertaken by the researcher. All learners were assigned a numeric value. The only identifiable data that remained were the Grades involved, as well as the specific subjects under review.

A t-test is a type of statistical test that is utilised to compare the means of two groups and is regarded as a parametric method (Kim, 2015). Moreover, Kim defines the parametric method as a statistical technique in which one defines the probability distribution of probability variables and makes inferences about the parameters of the distribution.

Therefore, by employing each sampled learner's average academic performance for the 2014 year, redshirted and on-time learners' overall subject averages for each Grade were compared. As stated, t-tests for independent groups were run to determine whether there was a significant difference in performance for each identified promotional subject between the two criterion groups in each Grade. An independent t-test was utilised, as the two groups who were compared were independent of each other. Additionally, t-tests

were also employed to determine whether significant differences in the academic performance of boys and girls existed for each of the criterion groups.

The Grade averages for redshirted learners and on-time learners, together with the results of the t-test, enabled the researcher to determine whether academic differences between the redshirted and on-time groups, as well as boys and girls, increased, decreased or stayed unchanged.

### 3.8 RESEARCH ETHICS

According to the British Psychological Society's Code of Ethics and Conduct, four main ethical principles need to be adhered to when conducting research, and these are respect, competence, responsibility and integrity (Coolican, 2009). In this study, the researcher considered and made known to the participants that all data collection would be done in accordance with the afore-mentioned principles. Consequently, the researcher upheld these principles towards participants in terms of keeping all identifiable characteristics confidential although initially, identifiable data were employed to create comparison groups, after which a numerical symbol was assigned to each participant, stripping them of any unique identifiers. It is however, noted by the researcher, that although all of the above-mentioned ethical clearance was obtained, in hindsight and oversight was made in terms of not obtaining individual parental and learner consent. Since all learners involved were minors, the researcher should not have only requested and accepted

consent from the principals involved, as cumulative learner record cards were handled, in order to obtain the report cards and which contained confidential and private information regarding the learner and families in question. This oversight has also been noted in the limitation section of this research study.

Since the researcher made use of secondary data, informed consent from the Ministry of Basic Education, Sport and Culture and sampled schools was obtained. They were informed of the purpose of the research, the expected duration and the procedures included. In addition, they were informed about potential risks, any prospective research benefits, as well as the limits of confidentiality in the study (American Psychological Association, 2003).

Moreover, the researcher applied for and obtained permission from the Postgraduate Study Committee of the University of Namibia to pursue the proposed research study before any research took place. Finally, all data are currently securely stored at my residence and will be kept safe for five years, after which they will be shredded and disposed of.

### 3.9 CHAPTER SUMMARY

In Chapter 3, the process of collecting data was described. This included a description of the research design, the population and the sample and sampling methods employed. The research instruments and data collecting process were presented. The data analyses to define which statistical techniques were to be employed to present and interpret the data were detailed. Results from the data analysis will subsequently be presented in Chapter 4.

## **CHAPTER 4**

### **RESULTS**

#### **4.1 INTRODUCTION**

This chapter presents all results and findings of the statistical analysis as defined in Chapter 3. Group statistics are presented in the form of bar graphs. This is followed by findings related to the four research objectives of the study as presented in Chapter 1. Firstly, the results of whether significant academic differences in performance were found across Grades 1, 3 and 5 of children who were redshirted as opposed to those who were on-time are reported. Following that, it will be determined whether and how these academic differences across Grades 1, 3 and 5 between redshirted and on-time learners have changed over time. Thirdly, results of differences between the academic performance of redshirted boys and girls compared to on-time boys and girls are presented. Finally, findings as to whether age at Grade 1 enrolment could predict academic performance at the end of Grades 1, 3 and 5 are presented.

#### **4.2 FINDINGS ON THE PREVALENCE OF REDSHIRTNG**

The study was conducted in Windhoek, which falls in the Khomas Region of Namibia. The total number of schools included in the research were 13 primary schools. Of those 13 primary schools, 6 were private, 5 were public primary schools and 2 were state-funded. The latter operated as private or semi-private schools but received a state subsidy.

The following figures illustrate the descriptive and group statistics of the data collected.

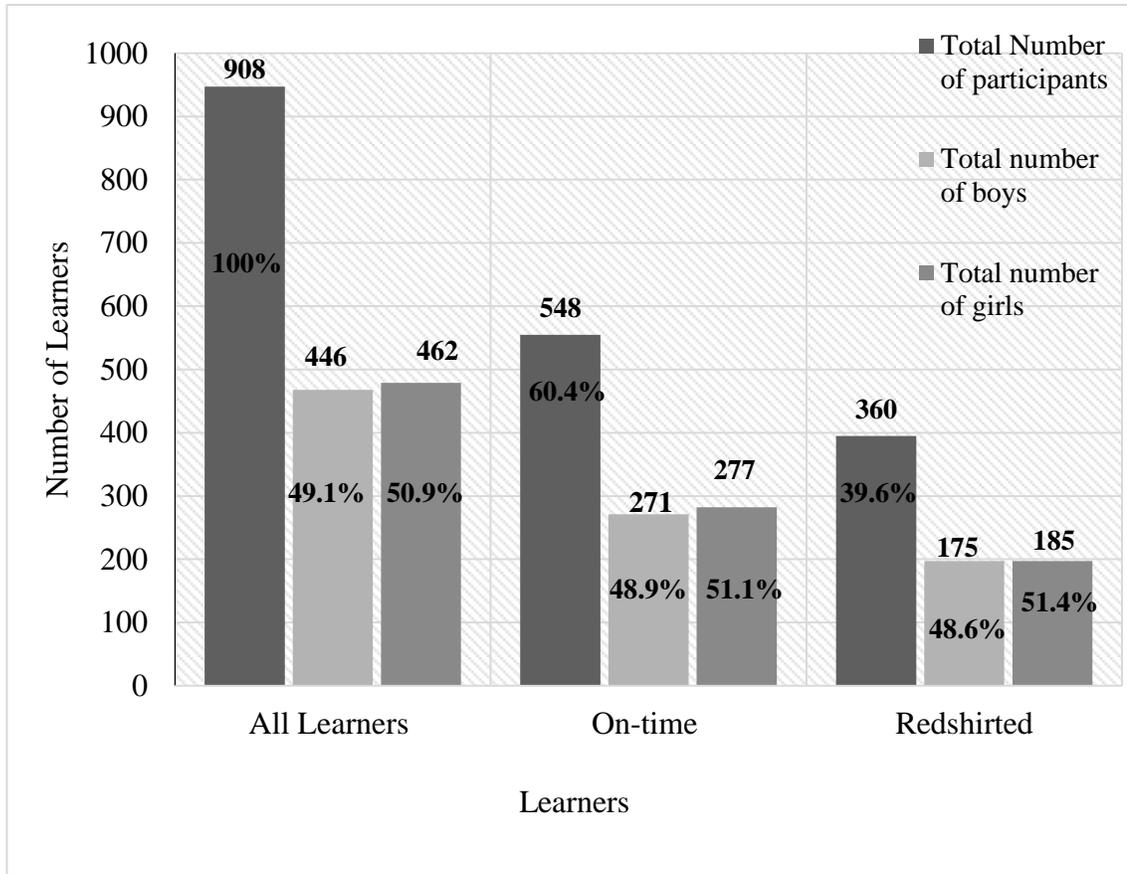


Figure 1. Prevalence of on-time and redshirted learners for the whole sample by gender

As reflected in Figure 1, the total number of learners included in the study were 908. These learners represented all sampled learners in the 13 schools in Grades 1, 3 and 5 who had birthdates in the last quarter of the year.

Of the total number of learners (908), 49.1% (446) were boys and 50.9 % (462) were girls. Of the 908 learners that were included in the sample, 60.4% (548) were on-time learners while 39.6% (360) were one year older than the expected Grade age and thus

likely to be redshirted. The sample included 359 Grade 1 learners (180 boys and 179 girls), the Grade 3 sample included 296 learners (145 boys and 151 girls) and the Grade 5 sample included 253 learners (118 boys and 135 girls).

As mentioned before, the study did not account for learners who failed or were kept back for one year due to low performance. Although more than half (60.4%) of the children who had birthdates in the last quarter of the year went to school on-time, quite a large number of children (39.6%) with last quarter birthdates were redshirted and entered Grade 1 at a later stage. The following Figures show the number of boys and girls across Grades 1, 3 and 5 who were either overaged (and likely redshirted) or went to school on-time.

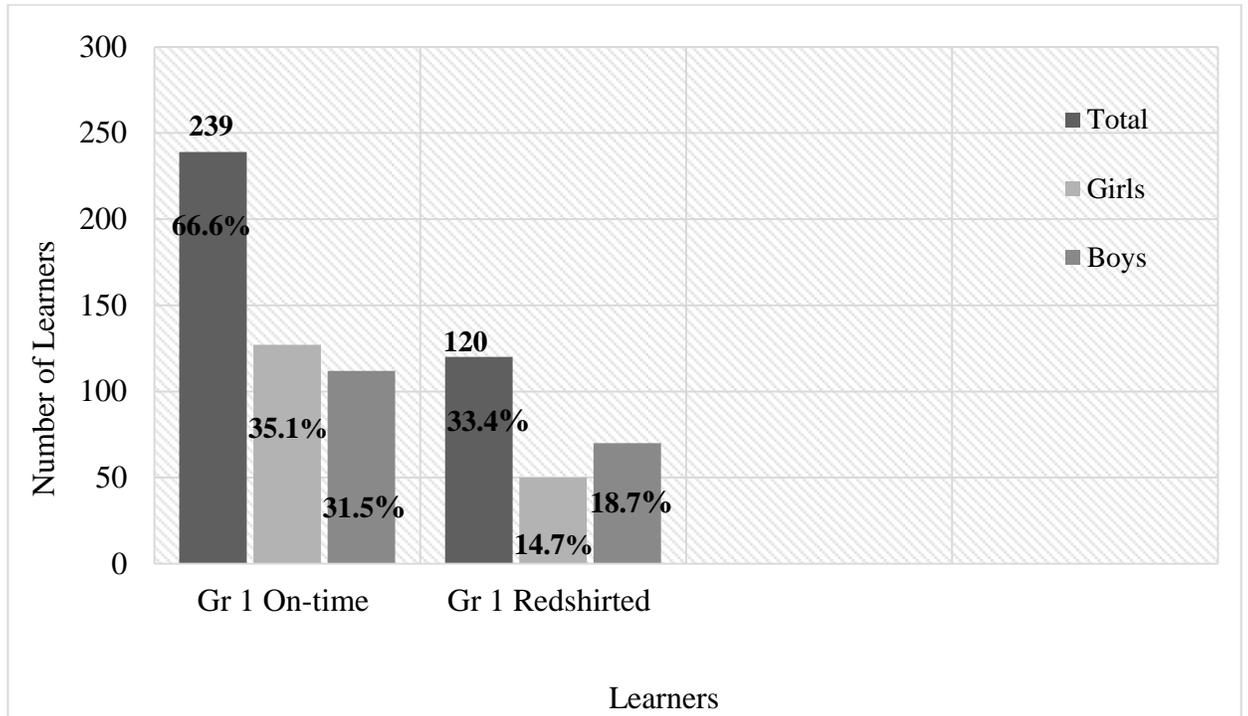


Figure 2. On-time and redshirted learners in Grade 1

The total sample for Grade 1 learners was 359. It was found that 66.6% of learners went to school on-time, regardless of having a birthdate in the last quarter of the academic school year, while redshirted. Furthermore, it was found that in Grade 1, more boys (18.7%) were redshirted than girls (14.7%). In contrast, more girls (35.1%) than boys (31.5%) went to school on-time, regardless of having birthdates in the last quarter of the academic year (see Figure 2).

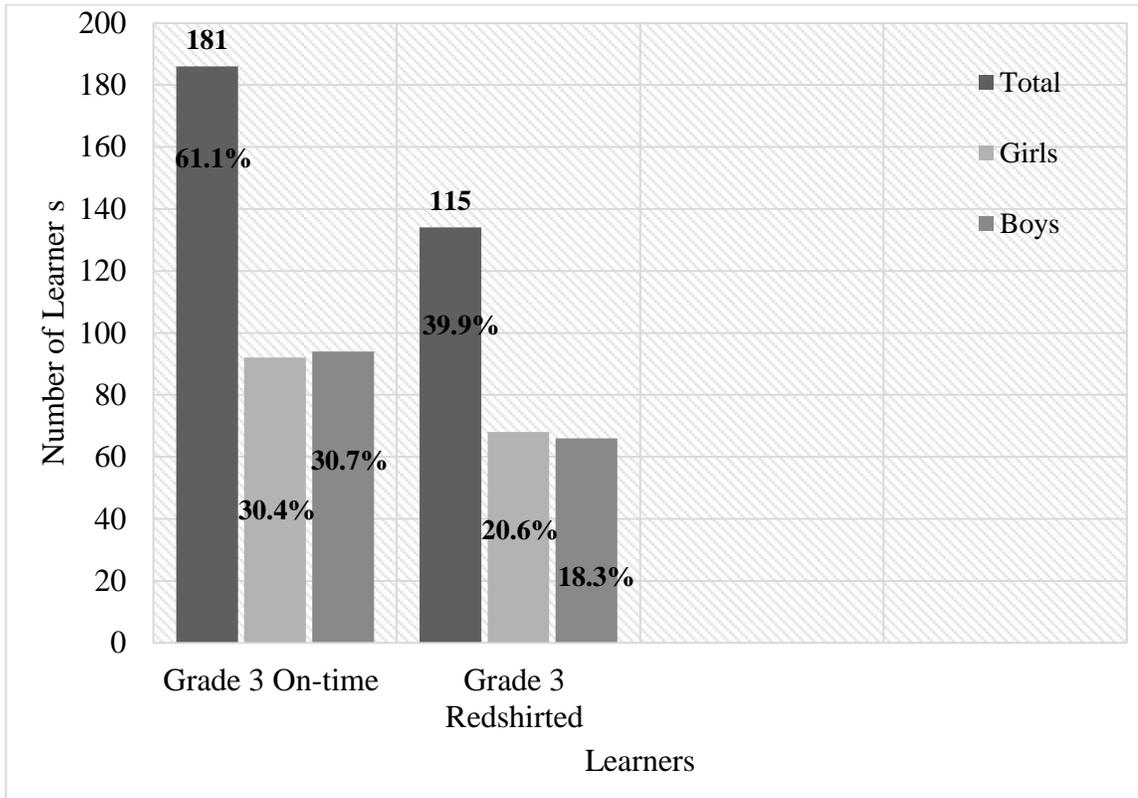


Figure 3. On-time and redshirted learners in Grade 3

A total of 296 Grade 3 learners were included in the sample. Of these learners, 61.1% were on-time while 39.9% were one year older than the expected age and were thus likely redshirted. Data indicate that a significantly large number of learners appeared to be overaged for Grade 3. The assumption is that learners ought to be of the same age according to their Grades, but the difficulty is in determining whether these children were indeed redshirted or whether they were older as a result of failure in previous Grades.

The data further reveal only a slight difference between redshirted boys and girls, with more girls (20.6%) being redshirted than boys (18.3%) (See Figure 3). Finally, only a very slight difference in the number of on-time boys and girls was found.

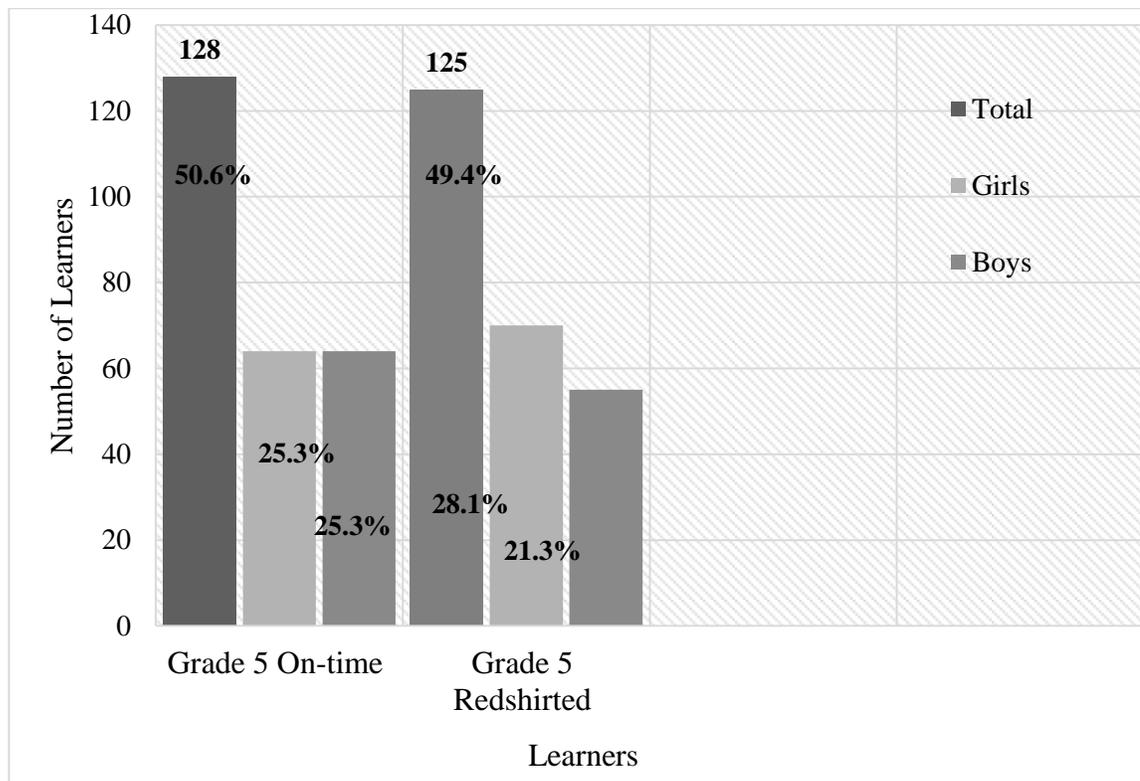


Figure 4. On-time and redshirted learners in Grade 5

In Grade 5, a total of 253 learners were included in the sample. For those having last quarter birthdates, very close to equal numbers of learners were redshirted (49.4%) and on-time (50.6%). Here, more girls (28.1%) than boys (21.3%) were redshirted (or over-aged). In this Grade, there were the same number of on-time boys (25.3%) as on-time girls. It is important to mention again that the increase in overaged learners might have been impacted by poor academic performance, resulting in learners being kept back

because of not meeting the necessary academic requirements to move on to the next Grade (See Figure 4). The following sections present feedback on the researcher's earlier stated objectives.

#### 4.3 FINDINGS REGARDING THE ACADEMIC PERFORMANCE OF REDSHIRTED AND ON-TIME LEARNERS ACROSS GRADES

The central limit theorem states that if  $n > 30$ , the researcher may make use of parametric tests, such as the t-test, which was the case according to the data analysis and the large sample size. In the data above, the test distribution was normal and calculated from the collected secondary data. Additionally, the assumption of homogeneity of variances was tested by employing the Levene's test for equality of variances. If the variances were equal ( $p > 0.05$ ) the normal t-test result would be utilised; otherwise, for unequal variances ( $p < 0.05$ ), the adjusted t-test was utilised.

Table 1: *Grade 1 redshirted learners versus on-time learners with regards to all subject means and the two averages*

<b>Subject</b>	<b>Classification</b>	<b>n</b>	<b><math>\bar{x}</math></b>	<b>s</b>	<b>F</b>	<b>p</b>	<b>t</b>	<b>p-value</b>																																																																																						
English 1 <sup>st</sup>	Redshirted	90	72.30	12.22	5.818	.0160	6.029	<0.0001*																																																																																						
	On-time	206	62.19	15.40					Afrikaans 1 <sup>st</sup>	Redshirted	30	74.50	10.55	7.457	.008	3.818	<0.0001*	On-time	33	60.09	18.65	English 2 <sup>nd</sup>	Redshirted	30	75.83	9.47	3.158	.081	3.26	0.002*	On-time	33	65.79	14.25	Afrikaans 2 <sup>nd</sup>	Redshirted	90	68.83	12.51	5.146	.024	6.87	<0.0001*	On-time	206	57.37	14.66	Mathematics	Redshirted	120	73.93	12.38	3.78	.053	4.68	<0.0001*	On-time	239	66.66	14.55	Social Studies	Redshirted	120	75.23	11.38	3.279	.071	5.77	<0.0001*	On-time	234	66.80	13.76	Average 1	Redshirted	90	72.07	10.60	3.246	.073	5.82	<0.0001*	On-time	206	63.09	12.85	Average 2	Redshirted	30	76.38	9.37	1.663	.202	3.68
Afrikaans 1 <sup>st</sup>	Redshirted	30	74.50	10.55	7.457	.008	3.818	<0.0001*																																																																																						
	On-time	33	60.09	18.65					English 2 <sup>nd</sup>	Redshirted	30	75.83	9.47	3.158	.081	3.26	0.002*	On-time	33	65.79	14.25	Afrikaans 2 <sup>nd</sup>	Redshirted	90	68.83	12.51	5.146	.024	6.87	<0.0001*	On-time	206	57.37	14.66	Mathematics	Redshirted	120	73.93	12.38	3.78	.053	4.68	<0.0001*	On-time	239	66.66	14.55	Social Studies	Redshirted	120	75.23	11.38	3.279	.071	5.77	<0.0001*	On-time	234	66.80	13.76	Average 1	Redshirted	90	72.07	10.60	3.246	.073	5.82	<0.0001*	On-time	206	63.09	12.85	Average 2	Redshirted	30	76.38	9.37	1.663	.202	3.68	<0.0001*	On-time	33	65.86	12.83								
English 2 <sup>nd</sup>	Redshirted	30	75.83	9.47	3.158	.081	3.26	0.002*																																																																																						
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	On-time	33	65.86	12.83																																																																																										

\* $p < .05$

\*\* $\bar{x}$  = mean, s = standard deviation

\*\*\*Note that the learners from St Paul's College (5 learners) did not have Social Studies as a subject and averages were calculated without those marks.

It is important to note that in the analysis of the data, two categories of averages were created. These categories were Average 1 and Average 2. Average 1 included all subjects (Mathematics, Social Studies, Natural Sciences {only Grade 5}) but with English as a 1<sup>st</sup> and Afrikaans as a 2<sup>nd</sup> Language. Average 2 also included all subjects (Mathematics, Social Studies, Natural Science {only Grade 5}) but with English as 2<sup>nd</sup> language and Afrikaans as 1<sup>st</sup> language. Redshirted learners in Grade 1 performed better than the on-time learners in all subjects. Average 1 which included learners who took English as a first language and Afrikaans as a second language also reveals that, on average, redshirted learners outperformed their on-time counterparts. Moreover, Average 2 which included those learners who took Afrikaans as a first and English as a second language also shows that those learners who were redshirted performed better academically (See Table 1).

When comparing the results for all subjects, as well as the two averages in Grade 1, it was established that the redshirted learners performed better than the on-time learners. These differences in performance in most cases exceeded a 10% difference in favour of redshirted learners. To determine whether or not the differences in performance were statistically significant a t-test was performed. It was found that all differences were statistically significant ( $p < 0.01$  in all cases).

Table 2: *Grade 3 redshirted learners versus on-time learners with regards to all subject means and the two averages*

<b>Subject</b>	<b>Classification</b>	<b>n</b>	<b><math>\bar{x}</math></b>	<b>s</b>	<b>F</b>	<b>p</b>	<b>t</b>	<b>p-value</b>
English1 <sup>st</sup>	Redshirted	107	69.38	11.69	.09	.76	2.45	.015*
	On-time	158	65.77	11.82				
Afrikaans 1 <sup>st</sup>	Redshirted	8	77.63	10.13	.13	.72	1.58	0.126
	On-time	23	70.57	11.16				
English 2 <sup>nd</sup>	Redshirted	8	76.63	11.11	.02	.89	1.39	.176
	On-time	23	69.96	11.89				
Afrikaans 2 <sup>nd</sup>	Redshirted	107	64.34	14.68	.007	.93	1.84	.068
	On-time	158	61.09	13.71				
Mathematics	Redshirted	115	69.05	12.07	1.19	.28	1.18	.241
	On-time	181	67.31	12.65				
Social Studies	Redshirted	106	69.43	11.92	1.89	.17	1.24	.218
	On-time	177	67.65	13.67				
Average 1	Redshirted	107	67.70	10.41	2.31	.13	1.75	.081
	On-time	158	65.26	11.57				
Average 2	Redshirted	8	79.84	8.12	1.52	.23	2.05	.05
	On-time	23	70.87	11.38				

\*p < .05

\*\*Note that 13 learners of St Paul's College did not have marks for Social Studies and averages were calculated without those marks.

Table 2 indicates that redshirted learners in Grade 3 still performed better than on-time learners for all subjects but the differences in performance between the groups were smaller when compared to differences in Grade 1.

After employing the t-test, it was found that in Grade 3, with regards to all subjects, there were no statistically significant differences for any of the subjects except for English 1<sup>st</sup> Language where the redshirted learners performed statistically significantly better than the on-time learners ( $p < 0.05$ ).

Furthermore, Average 1, with English as a 1<sup>st</sup> and Afrikaans as a 2<sup>nd</sup> language indicated no statistically significant difference between redshirted and on-time learners, as did Average 2, with Afrikaans as a 1<sup>st</sup> and English as a 2<sup>nd</sup> language. In this instance, redshirted and on-time learners did not show a statistically significant difference in the average scores.

Table 3: *Grade 5 redshirted learners versus on-time learners with regards to all subject means*

<b>Subject</b>	<b>Classification</b>	<b>n</b>	<b><math>\bar{x}</math></b>	<b>s</b>	<b>F</b>	<b>p</b>	<b>t</b>	<b>p-value</b>																																																																																																				
English 1 <sup>st</sup>	Redshirted	76	58.50	12.70	1.82	.18	.34	.735																																																																																																				
	On-time	101	57.79	14.47					Afrikaans 1 <sup>st</sup>	Redshirted	49	66.51	11.69	.41	.53	.76	.449.	On-time	27	64.37	11.77	English 2 <sup>nd</sup>	Redshirted	49	65.35	12.85	.24	.63	1.17	.246	On-time	27	61.67	13.62	Afrikaans 2 <sup>nd</sup>	Redshirted	76	54.86	13.55	.02	.89	.21	.836	On-time	101	54.43	13.66	Mathematics	Redshirted	125	58.98	17.36	1.88	.17	1.02	.307	On-time	128	56.86	15.62	Social /Environmental Studies	Redshirted	125	62.35	13.45	1.53	.22	.73	.466	On-time	128	61.05	14.95	Natural Science	Redshirted	125	59.08	15.74	3.03	.08	-	.042*	On-time	128	62.69	13,93	2.04	Average 1	Redshirted	73	57.13	11.49	1.40	.24	-.52	.603	On-time	101	58.09	12.48	Average 2	Redshirted	52	64.53	14.32	.00	.97	.38
Afrikaans 1 <sup>st</sup>	Redshirted	49	66.51	11.69	.41	.53	.76	.449.																																																																																																				
	On-time	27	64.37	11.77					English 2 <sup>nd</sup>	Redshirted	49	65.35	12.85	.24	.63	1.17	.246	On-time	27	61.67	13.62	Afrikaans 2 <sup>nd</sup>	Redshirted	76	54.86	13.55	.02	.89	.21	.836	On-time	101	54.43	13.66	Mathematics	Redshirted	125	58.98	17.36	1.88	.17	1.02	.307	On-time	128	56.86	15.62	Social /Environmental Studies	Redshirted	125	62.35	13.45	1.53	.22	.73	.466	On-time	128	61.05	14.95	Natural Science	Redshirted	125	59.08	15.74	3.03	.08	-	.042*	On-time	128	62.69	13,93	2.04	Average 1	Redshirted	73	57.13	11.49	1.40	.24	-.52	.603	On-time	101	58.09	12.48	Average 2	Redshirted	52	64.53	14.32	.00	.97	.38	.708	On-time	27	63.28	13.28								
English 2 <sup>nd</sup>	Redshirted	49	65.35	12.85	.24	.63	1.17	.246																																																																																																				
	On-time	27	61.67	13.62					Afrikaans 2 <sup>nd</sup>	Redshirted	76	54.86	13.55	.02	.89	.21	.836	On-time	101	54.43	13.66	Mathematics	Redshirted	125	58.98	17.36	1.88	.17	1.02	.307	On-time	128	56.86	15.62	Social /Environmental Studies	Redshirted	125	62.35	13.45	1.53	.22	.73	.466	On-time	128	61.05	14.95	Natural Science	Redshirted	125	59.08	15.74	3.03	.08	-	.042*	On-time	128	62.69	13,93	2.04	Average 1	Redshirted	73	57.13	11.49	1.40	.24	-.52	.603	On-time	101	58.09	12.48	Average 2	Redshirted	52	64.53	14.32	.00	.97	.38	.708	On-time	27	63.28	13.28																					
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\*p <.05, \*

Table 3 displays the results of Grade 5 redshirted and on-time learners. Statistics clearly show that the advantage in academic performance of redshirted learners, when compared to on-time learners, decreased even more in Grade 5. There was a small difference in means where redshirted learners did slightly better than on-time learners with regards to all subjects, except for Natural Science and Average 1 where on-time learners performed better than redshirted learners. For the rest of the subjects the two groups performed more or less the same.

The t-test with regards to all subjects shows that there was no statistically significant difference in the mean scores of redshirted and on-time learners, except for Natural Sciences (only introduced as a subject in Grade 5) where on-time learners outperformed redshirted learners in Natural Sciences ( $p < 0.05$ ). Therefore, in general, it was found that no statistically significant difference in academic performance existed between redshirted and on-time learners in Grade 5.

4. 4 CHANGES IN ACADEMIC PERFORMANCE BETWEEN REDSHIRTED AND ON-TIME LEARNERS ACROSS GRADES 1, 3 and 5

Table 4: *Difference in subject means for Grades 1, 3 and 5*

Subjects of Redshirted (RS) and On-time learners (OT)	Grade 1	Grade 3	Grade 5
	$\bar{x}_{RS} - \bar{x}_{OT}$	$\bar{x}_{RS} - \bar{x}_{OT}$	$\bar{x}_{RS} - \bar{x}_{OT}$
English 1 <sup>st</sup>	10.11	3.61	0.71
Afrikaans 1 <sup>st</sup>	14.41	7.06	2.14
English 2 <sup>nd</sup>	10.04	6.67	3.68
Afrikaans 2 <sup>nd</sup>	11.46	3.25	0.43
Mathematics	7.27	1.99	2.12
Social Studies	8.43	1.78	1.30
Natural Sciences	n/a	n/a	-3.81
Average 1	8.98	2.43	-0.97
Average 2	10.51	8.97	1.25

Table 4 notes differences in subject means. In terms of the interpretation of Table 4, a positive difference means that the redshirted learners performed academically better than the on-time learners, whereas a negative sign indicates the opposite.

In terms of the earlier stated hypothesis, where the researcher postulated that redshirted learners do not perform academically better than on-time learners, the following can be concluded. For Grade 1 learners the null hypothesis can be rejected. The data in Table 4 suggest that in Grade 1, redshirted learners had an academic advantage in terms of their performance across all subjects, as the difference in means were bigger than 7 points for all subjects as well as for the two averages.

The null hypothesis can be accepted for Grade 3 as the data indicate a marginal and statistically insignificant difference in the academic performance as measured across all subjects and the two averages. For Grade 5 the null hypothesis can also be accepted as the data indicate a marginal and statistically insignificant difference in the academic performance between learners who were redshirted and on-time learners, except for Average 2 where on-time learners performed slightly better than redshirted learners; however, this difference is not statistically significant and it was in Natural Science that on-time learners performed better than redshirted learners; this difference is statistically significant.

The academic advantage of redshirted learners in Grade 1 seemed to lessen as they moved to Grade 3, where less of an advantage seemed to be evident between the redshirted and on-time subgroups. In Grade 3, the difference in means between redshirted and on-time learners ranged between 1.78 and 7.06. This indicates that in Grade 3, the difference in terms of the average academic performance was found to be

relatively small. Specifically, the average differences on all subjects were negligible and also statistically insignificant ( $p > 0.05$ ). In Grade 5, the difference in means between all subjects of the redshirted and on-time learners indicated academic performance that was similar. Here most subjects and both averages had a mean difference of less than 3.7, indicating negligible differences between redshirted and on-time learners in terms of academic performance. For Natural Science, on-time learners performed better than redshirted learners; they, furthermore, showed a small difference for Average 1.

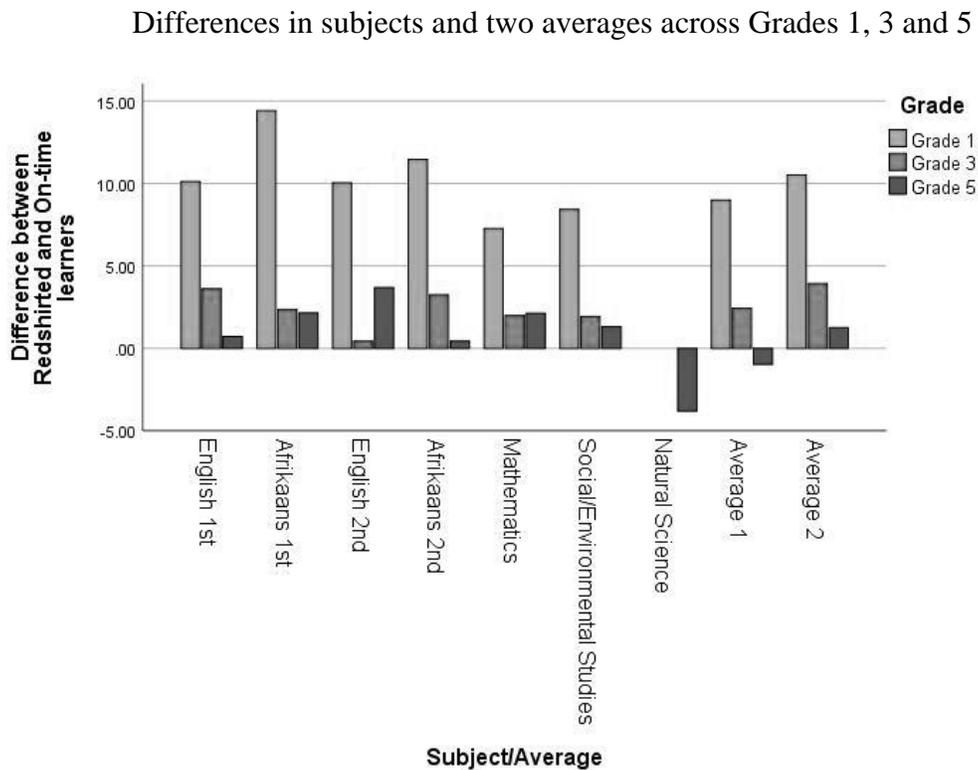


Figure 5: Differences in subject or average means across Grades 1, 3 and 5

In Figure 5, a graphic representation of the distribution of means is presented. Again it is clear that for Grade 1 in all subjects, redshirted learners performed significantly better on average than on-time learners. Grade 3 shows a decrease in redshirted learners outperforming on-time learners. In Grade 5, as reported, the gap seems to have continued to close between the academic performances of redshirted learners measured against on-time learners. On-time learners did perform better than redshirted learners in Natural Science and for Average 1 (English 1<sup>st</sup> and Afrikaans 2<sup>nd</sup> language).

#### 4.5 DIFFERENCES IN ACADEMIC PERFORMANCE BETWEEN REDSHIRTED AND ON-TIME GIRLS AND BOYS

Results from the data collection were processed to determine whether differences in terms of academic performance existed between redshirted and on-time girls and redshirted and on-time boys.

Table 5 illustrates the outcomes for red-shirted and on-time learners for both gender groups with regards to the two averages, namely Average 1 and Average 2. Average 1 relates to learners who took English as a 1<sup>st</sup> and Afrikaans as a 2<sup>nd</sup> language, whereas Average 2 relates to those learners who took Afrikaans as a 1<sup>st</sup> and English as a 2<sup>nd</sup> language.

Table 5: Averages by gender for redshirted and on-time learners

Categories	Male	Grade	$\bar{x}$	Female	Grade	$\bar{x}$
Average 1	Redshirted	1	70.56	Redshirted	1	73.96
	On-time	1	61.66	On-time	1	64.25
	Redshirted	3	64.98	Redshirted	3	69.82
	On-time	3	61.90	On-time	3	68.71
	Redshirted	5	57.25	Redshirted	5	57.04
	On-time	5	56.99	On-time	5	59.35
Categories	Male	Grade	$\bar{x}$	Female	Grade	$\bar{x}$
Average 2	Redshirted	1	75.65	Redshirted	1	77.33
	On-time	1	62.85	On-time	1	68.38
	Redshirted	3	77.29	Redshirted	3	83.75
	On-time	3	66.89	On-time	3	74.52
	Redshirted	5	63.90	Redshirted	5	65.02
	On-time	5	60.16	On-time	5	65.12

As mentioned, in the analysis of the data, two categories existed, namely Average 1 and Average 2. Average 1 included all subjects (Mathematics, Social Studies, Natural Sciences {only Grade 5}) but with English as a 1<sup>st</sup> and Afrikaans as a 2<sup>nd</sup> language. Average 2 also included all subjects (Mathematics, Social Studies, Natural Science {only Grade 5}).

Table 6: Average differences for each gender between redshirted and on-time learners

Categories	Gender	Grade 1		Grade 3		Grade 5	
		$\bar{x}_{RS} - \bar{x}_{OT}$	Sig.	$\bar{x}_{RS} - \bar{x}_{OT}$	Sig.	$\bar{x}_{RS} - \bar{x}_{OT}$	Sig.
Average 1	Boys	8.90	<0.001	3.07	0.155	0.26	0.927
English	Girls	9.71	<0.001	1.11	0.5	-2.31	0.365
Average 2	Boys	12.80	0.005	12.40	0.012	3.74	0.499
Afrikaans	Girls	8.95	0.03	9.23	0.484	-0.10	0.981

Before looking at the differences between redshirted boys and girls, the researcher would like to remark briefly on the differences in performance of the two genders in general. From Table 5 it is clear that of those learners in the Average 1 category, in both Grades 1 and 3, girls generally performed better than boys, with a minimum of 2.59 and a maximum of 6.81 difference. In Grade 5 for the same category, redshirted boys very marginally performed better than the redshirted girls with a .021 average difference, yet the on-time girls again performed better than on-time boys with an average difference of 2.36. In the Average 2 category, girls again seemed to outperform boys in Grades 1, 3 and 5, with a minimum of 1.68 and maximum of 7.63-point difference.

With regards to Table 6, there were significant differences for both genders in Grade 1 for Average 1 as well as Average 2. Table 6 indicates that these differences in averages between redshirted and on-time learners for both genders were rather large for Grade 1. For learners who fell in the Average 1 category in Grade 1, there was a difference of 8.9 between redshirted and on-time boys, indicating that redshirted boys did much better than on-time boys. Girls in the same category showed a difference of 9.71 showing again that redshirted girls did much better than on-time girls. Thus, boys and girls showed more or less the same difference with regards to being redshirted or being on-time.

The boys in the Average 2 category also showed a difference of 12.8 between the redshirted and on-time subgroups, indicating again that redshirted boys did much better than on-time boys. Girls in the Average 2 category showed a difference of 8.95 between redshirted and on-time groups indicating that redshirted girls also did better than on-time girls.

In Grade 3 the difference between redshirted and on-time learners in the Average 1 category was smaller. Redshirted boys performed better than on-time boys, with a difference of 3.07. In the Average 2 category, redshirted boys did much better than on-time boys with a difference of 12.4. For this Grade, redshirted girls also performed slightly better than on-time girls with a difference of 1.11 in the Average 1 category. Redshirted girls performed better in the Average 2 category than on-time girls, with a

difference of 9.23. Therefore, in Grade 3 the only significant difference found was for Average 2 as related to girls.

In Grade 5, there seemed to be a difference in the performance between the redshirted and on-time groups. The difference between redshirted and on-time learners in the Average 1 category indicated a small difference of 0.26, with redshirted boys performing marginally better than on-time boys. Similarly, in the Average category 2 on-time boys performed better than redshirted boys with a marked difference of -2.31. For this Grade and Average 1, redshirted girls performed better than on-time girls with a difference of 3.74. In the Average 2 category, on-time girls performed marginally better than redshirted girls, with a -0.1 difference. None of the differences in Grade 5 were found to be statistically significant.

Thus, although differences in performance were relatively large in Grade 1, these differences decreased for Average 1, but remained high for Average 2 in Grade 3. For Grade 5 the difference between averages for redshirted and on-time learners for both genders were small and, in some cases, on-time learners' scores were slightly higher than that of redshirted learners.

#### 4. 6 CHAPTER SUMMARY

This chapter presented the statistical findings of the data that were collected and processed. The researcher looked specifically at differences in academic performance across Grades and between girls and boys.

In the following and final chapter, the meaning and implications of all the presented findings will be explored and discussed. The researcher wishes to make conclusions regarding the initial question of whether redshirting children plays a significant role in terms of better academic performance, both in the short and long-term.

## **CHAPTER 5**

### **DISCUSSION**

#### **5.1 INTRODUCTION**

The fifth and final chapter elaborates on the findings presented in Chapter 4. Firstly, the prevalence of redshirting in Windhoek is discussed. Secondly, the matter of whether there exists significant differences in academic performance across Grades 1, 3, and 5 between redshirted and on-time learners is discussed. Thirdly, it is established whether or not differences in academic performance changed across Grades 1, 3 and 5 between the redshirted and on-time groups. Fourthly, the matter of significant differences between boys' and girls' academic performance are evaluated.

Furthermore, as per the final research objective, the matter of whether age at Grade 1 enrolment influences the prediction of academic performance at the end of Grades 1, 3 and 5 is considered; answering the earlier stated hypothesis. Finally, recommendations based on the outcome of the research are posed, as well, and the limitations which presented themselves are discussed.

## 5.2 PREVALENCE OF REDSHIRTNG IN WINDHOEK

Although this research had not specifically been embarked on to determine whether redshirting in public and private schools in Windhoek, Namibia, was prevalent or not, the large sample size of the research allowed the researcher to draw a certain number of findings from the data collected with reference to prevalence. This large sample size of 908 learners allowed for data that gave a reasonable insight into the prevalence of redshirting in Windhoek.

As mentioned earlier, although most of the available research and evidence fall within an American context, it is now noteworthy to compare differences and similarities between the findings of this study and previous research. Currently, no available data about redshirting in Namibia exists. The American programme, 60 Minutes on CBS News (2012), reported that redshirting had more than tripled since the 1970's. Moreover, Oshima and Domaleski (2006) report that 22% of Grade 1 children were 7 years or older, with a 13% increase from 1970, and that 6 to 9% of kindergarten-aged children in the United States started Grade 1 a year late. Although there are no data to make local comparisons, the current study which included 908 learners indicates that of the entire sample, 548 (60.4%) were on-time learners, whereas 360 (39.6%) were redshirted or overaged. As mentioned before, the study did not account for learners who failed or were kept back for one year due to poor academic performance.

It is important to note that in terms of Grade 1, learners enter formal education for the first time and as a result could not have been kept back due to low performance. The assertion here is that data should be fairly reflective in terms of whether learners were redshirted or not, according to their birthdate and not due to poor academic performance. Of the 359 Grade 1 learners, it was found that 239 (66.6%) went to school on-time, regardless of having a birthdate in the last quarter of the academic school year, while 120 (33.4%) were redshirted. The supposition is that all learners were assumed to go to school on-time, yet about one third of learners who had last quarter birthdays, were redshirted. In terms of the sample size, it can be regarded as a substantial number of learners who were kept back before Grade 1. One could, therefore, argue that redshirting is moderately prevalent in Grade 1, in Windhoek across public and private schools alike. Bassok and Reardon (2012) report that between 4 and 5% of children delayed Kindergarten, a lower number than typically reported in popular and academic accounts, while West, Meek, and Hurst (2000) report that academic redshirting occurred at the rate of about 9% per year among kindergarten-age learners. The findings of this study, as mentioned, indicate a moderate amount of redshirting at Grade 1 level, which has undoubtable consequences for the composition of a class. In the event of a moderate number of children being redshirted, a teacher in Windhoek is now faced with the dilemma of having to cater to the needs of children with age gap differences of up to a year. This certainly affects the manner in which a teacher has to teach and assess, and he or she is, therefore, placed under additional undue pressure. Many teachers in the Namibian context are already facing many other challenges, such as overcrowded

classrooms, lack of support from parents and varying levels of school preparedness, which all impact on the academic progress of learners.

Based on the data from Grade 3, where a total of 296 learners were included, it was found that 181 (61.1%) learners attended Grade 3 on-time, while 115 (38.9%) were one year older than the expected age. The latter group was thus likely redshirted or, alternatively, kept back due to poor performance. There was a 5.5% increase in the number of redshirted learners from Grade 1 to 3 and at 38.9%, quite a substantial number of learners seemed to be overaged. In the Grade 3 group it became difficult to determine which of those overaged learners were in fact overaged due to being redshirted or as a result of having repeated a Grade because of poor academic achievement. The assumption is that learners ought to be of the same age according to their Grades, but the difficulty in this particular research was in determining whether these learners were indeed redshirted because of last quarter birthdates or whether they were older as a result of failure in previous Grades. Although this is a limitation of the current research, the large percentage of overaged learners is still significant in terms of the composition of classrooms and the possible effects of having such a large range of ages in one Grade and the subsequent classrooms. As mentioned previously and also described by Dougan and Pijanowski (2011), various consequences due to redshirting exist, especially in terms of classroom dynamics. Older learners may affect the curriculum, teaching methods, expectations, social dynamics and levels of interest, and

the teachers involved are put under pressure to accommodate the varying age-ranges of the learners in these classrooms.

In Grade 5, where 253 learners were included, a very small difference of 1.2% was found between on-time (128 or 50.6%) and redshirted learners (125 or 49.4%). However, there seemed to be a 10.5% increase in the number of learners from Grades 3 to 5 who fell in the redshirted category. Again, since 5 or possibly more academic school years had passed, it is likely that this increase and those who fell in the redshirted category might in fact not have been redshirted initially, but rather repeated an academic year as a result of poor achievement. Interestingly, being older in a particular Grade did not benefit learners academically since, according to the data, in Grade 5 the performance gap decreased between those who were one year older, irrespective of whether they were redshirted or kept back due to failure.

The current study indicates, in terms of the prevalence of redshirting, that it is quite prevalent in the Windhoek context. This can be argued especially for the Grade 1 year, as a significant number of learners were redshirted. Retention due to poor performance would have been improbable, as these learners could not have repeated Grade 1 due to poor performance, as they were all new applicants. If they were older in Grade 1, it is likely that they were kept back in pre-school due to being deemed 'not ready'. This may in part have been due to having birthdates late in the year, making them substantially younger than those born in the same year with birthdates in the first two quarters of the year.

In terms of Grades 3 and 5, there was an increase of approximately 7% per year of learners being over-aged due to academic failure. However, the number of redshirted learners was still high, considering the fact that they were meant to be the correct age for their specific Grade. If one takes into account that approximate 7 % increase and subtract it from the overall percentage of children being overaged in Grade 3, the remaining figure seems similar to that of the Grade 1 group. Similarly, if one subtracts approximately 14% of the Grade 5 overall overaged group, results again are similar to the Grade 1 group of overaged learners.

It has been widely reported that boys are more likely than girls to be redshirted (Black, Devereux & Salvanes, 2008; Furlong & Quirk, 2011; Katz, 2000). The current study found that, in Windhoek, in Grade 1, 3.9 % more boys (18.7%) were redshirted than girls (14.8%). In contrast, more girls (35.1%) than boys (31.5%) went to school on-time, regardless of having birthdates in the last quarter of the academic year (see Figure 2). This difference seems significant in the context of the study, as the sample size was large; therefore, this difference implies that the practice of redshirting, especially for boys, seems to be apparent to some extent. These findings are, as previously discussed, supported by the majority of available literature on gender and redshirting as several researchers have reported and emphasised that boys were more likely to be redshirted than girls (Bassok & Reardon, 2012; Dougan & Pijanowski, 2011; Oshima & Domaleski, 2006).

It seems as though this trend of more boys being redshirted as opposed to girls, did not continue in Grade 3 and 5. Interestingly, in Grade 3, 2.4% more girls (20.6%) seemed to be redshirted or overaged than boys (18.2%). One has to mention again, that at this stage, overage cannot in this study only account for those learners who were redshirted before they started Grade 1. The research must take into account that an unknown number of those girls and boys in the redshirted category might have repeated a Grade as a result of poor academic performance and not meeting the minimum requirements in order to pass to the next Grade.

Similarly, this trend of more girls in the redshirted category continues in Grade 5, where 28.1% of girls and 21.3% of boys were redshirted or overaged. Boys, despite having birthdates in the last four months of the year, still seemed to have gone to school on-time; more so than those who were redshirted because of their late birthdays. The number of Grade 5 girls (25.3%) and boys (25.3%) who went to school on-time were found to be equal. These results again should be interpreted in light of the fact that some of those girls, as well as boys, might have fallen in the redshirted category as a result of Grade repetition prior to Grade 5, due to poor academic performance. This, therefore, would have impacted the outcome and validity of the results.

In terms of redshirting in later Grades, the results seem contradictory to the majority of the literature which indicates that boys are more likely and more often redshirted than

girls (Bassok & Reardon, 2012; Huang, 2015; Katz, 2000). Furthermore, these results speak to the dilemma that teachers face with regards to the range of not only age, but also gender, in primary school classes as it affects the classroom dynamics among learners, as well as the teaching strategies that need to be adapted to suit the differing needs and maturities in one class or Grade.

### 5.3 ACADEMIC PERFORMANCE OF REDSHIRTED AND ON-TIME LEARNERS ACROSS GRADES 1, 3 AND 5

Most available evidence and literature are clear in terms of the early academic advantages of redshirting (Gladwell, 2009; Kundert, May & Brent, 1995; Lin, Freeman, & Chu, 2009). and will allow those learners to be the top achievers in their class. This was also the case in this research study, where redshirted learners in Grade 1 performed substantially better in all subjects than the on-time learners. The findings also reveal that, on average, that for those learners who fell in the Average 1 category, which included learners who had English as a 1<sup>st</sup> and Afrikaans as a 2<sup>nd</sup> language, redshirted learners outperformed their on-time counterparts. In the Average 2 category, with those learners who had Afrikaans as a 1<sup>st</sup> and English as a 2<sup>nd</sup> language, it was found that those learners who were redshirted performed better academically. The findings, thus, as related to Grade 1 learners, with regards to all subjects, was that a statistically significant difference ( $p < 0.05$ ) existed between the mean scores of redshirted and on-time learners. This means that the findings can be generalised to the population of this study. This

finding implies that initially, redshirting is favourable West, Meek, and Hurst (2000), in their observations of the effects of redshirting in the first three years of primary school, found that the academic achievements of on-time learners were nearly equal to those of the redshirted learners, which is contradictory to the findings in this study as far as Grade 1 is concerned.

When comparing the results for all subjects, as well as the two averages in Grade 1, it was found that redshirted learners performed better than the on-time learners. These differences in performance were big and ranged between 7 and 14% in favour of redshirted learners. To determine whether or not the differences in performance were statistically significant, a t-test was performed. It was found that all differences, for all subjects, were statistically significant in all cases ( $p < 0.01$ ). Redshirted learners performed better than on-time learners for all subjects with average differences of 10% or more, except for Mathematics, where the difference in average was 7.72% and in Social Studies where the difference in average was 8.43%, both in favour of redshirted learners. The two averages both indicate that redshirted learners performed better academically, with Average 1 indicating that redshirted learners scored, on average, 8.98% higher than on-time learners and Average 2, indicating that redshirted learners scored, on average, 10.52% higher than on-time learners. One would assume that older learners would perform academically better initially, since they would have had more time and exposure to development and support, which in Grade 1 seemed to be the case. The implication here in the Namibian context is that, as Bedard and Dhuey (2006)

explain, when children from low socio-economic families end up being the youngest in the class, they are at an additional disadvantage because of relative age effects, probably less preschool experience and less acquisition of school readiness before kindergarten. This is especially pertinent to the Namibian context where many children come from lower socio-economic backgrounds and might, due to a variety of reasons, such as finances, logistics and the lack of parental knowledge, end up being the youngest in a Grade 1 class.

This research, furthermore, sought to determine whether these academic advantages were evident at Grade 3 level. When interpreting the results of Grade 3 learners, with regards to all the subjects, redshirted learners performed slightly better than on-time learners. Although the redshirted learners performed better than the on-time learners, it is important to note that this performance difference was relatively small, and in most cases less than 9%.

To determine whether or not the differences in performance were statistically significant, a t-test was performed. It was found that, with regards to all the subjects, no statistically significant differences for any of the subjects, except English 1<sup>st</sup> Language were measured. English 1<sup>st</sup> Language findings indicate that redshirted learners performed statistically significantly better than the on-time learners ( $p < 0.05$ ). In that respect, the advantage of being older than the other classmates seemed to become less advantageous, which was found to be in contrast to the findings of another researcher. In

research conducted by Smith (2016), the researcher attempted to determine if there was a possible difference between the reading and math scores of Grade 3 learners, who were redshirted or on-time. In that research, redshirted students' scores were significantly higher in reading and math than on-time learners. In the current research, however, it seems as though in Grade 3, on-time learners seemed to have steadily started catching up academically with redshirted learners. The benefit of being older was not generally found to make a significant difference to the overall academic performance, as in all other subjects, no statistically significant difference between the mean scores of redshirted and on-time learners was found. Additionally, in the Average 1, as well as the Average 2, category no statistically significant difference between redshirted and on-time learners was found

The results of Grade 5 redshirted and on-time learners are noteworthy in terms of the notion of some parents and educators alike, namely that older learners necessarily perform better academically than on-time learners; hence, the practice of keeping last quarter birthdate learners back in order for them to be academically competitive. The data revealed that, in some of the subjects, those learners who in fact went to school on-time and would qualify as being some of the youngest in the Grade, performed, albeit marginally, better than the redshirted and consequently older learners. Generally, there was a small difference in mean averages, with mean differences ranging between 0.43

and 3.68. It was, therefore, found that, for the most part, the two groups performed more or less the same academically.

This was the case for all subjects except Natural Sciences and Average 1. For Natural Sciences, on-time learners performed 3.61% better than redshirted learners. Moreover, for Average 1, on-time learners also performed 0.96 better than redshirted learners. The t-test which was performed with regards to all subjects showed that there was no statistically significant difference in the mean scores of redshirted and on-time learners, except for Natural Sciences (which was only introduced as a subject in Grade 5) where on-time learners outperformed redshirted learners in Natural Sciences ( $p < 0.05$ ). Therefore, in general, it was found that no statistically significant difference in academic performance existed between redshirted and on-time learners in Grade 5.

In this instance, it is important to take into account that an unaccounted number of the redshirted group of learners would have possibly repeated a Grade due to poor academic achievement or not meeting the minimum requirements. This may have influenced the outcome of the results, yet it remains noteworthy that the younger learners in the class, in many instances outperformed the older learners academically. Even with learners having repeated, one would assume that, because of the fact that they were repeating, they should essentially be performing better academically the second time around; yet still, younger learners seemed to have caught up to older learners and performed better or equally well in terms of their school work. This begs the question of whether redshirting as a practice holds any academic advantages across the Grades. Proponents of redshirting often point out that there is no definitive evidence to show that redshirting harms children in the long term. However, since no significant academic difference was

found between the redshirted and on-time learners, it is interesting to note that Lincove and Painter (2006) found that adolescents, whose school entry had been delayed, exhibited more behavioural problems than their classmates. Moreover, in the light of evidence of a higher utilisation of special education by redshirted youths, there is a great deal of speculation that many individuals who were redshirted as kindergartners may have had special needs that were misdiagnosed as immaturity and that should have been treated by some form of direct intervention other than delayed entry (Graue & DiPerna, 2000). It seems as though a possibility exists that perhaps redshirting might be capable of generating alternative challenges at a later primary school stage.

#### 5. 4 CHANGES IN ACADEMIC PERFORMANCE BETWEEN REDSHIRTED AND ON-TIME LEARNERS ACROSS GRADES 1, 3 AND 5

The research endeavoured to determine whether the so-called documented benefits of redshirting persisted over time. The literature offers varying findings regarding whether long-term academic benefits of redshirting exist. The redshirting assumes that learners with birthdates close to the start of a new academic year are likely to face challenges with the demands of formal schooling, and thus perform academically more poorly than those who had birthdates earlier in the academic year. When he looked at redshirting from a Vygotskian point of view, this theorist (as cited by Black, Devereux, & Salvanes, 2008), suggests that as far as readiness to learn is concerned, learning, development and readiness for new learning often require guidance and instruction and not simply the

passage of time. Having said that, this research has unearthed varying findings with regards to the long-term academic benefits of being redshirted.

Certain researchers have examined the effects of redshirting that occur immediately or within the early primary school years (Dougan & Pijanowski, 2011; Furlong & Quirk, 2011) while others have examined its long-term effects (Dobkin & Ferreira, 2010; Kniffen & Hanks, 2013). In this study, it was evident that in Grade 1, both redshirted boys and girls significantly outperformed on-time boys and girls, academically. This advantage that the redshirted learners revealed is what one would assume the case to be, given the fact that these children had more time to acquire those basic school readiness skills and tasks on which formal education could be built. This finding is comparable to the research of Lin, Freeman, and Chu (2009) who, employing the data of the Early Childhood Longitudinal Study Kindergarten class of 1998 – 1999, found that the older a learner was at the beginning of kindergarten, the better their reading and mathematics scores.

Although Lin et al. (2009) found that this trend of redshirts outperforming on-time learners continued into the upper primary Grades, the current study found that differences between redshirted and on-time learner performance were less evident in Grade 3. The academic advantage of redshirted learners in Grade 1 seemed to lessen as they moved into Grade 3, where less of an advantage seemed to be evident between the redshirted and on-time subgroups. In Grade 3, the difference in means between

redshirted and on-time learners ranged between 8.97 and 1.74, showing less than 9% difference in most cases. This indicates that in Grade 3, the differences in terms of the average academic performance were found to be relatively small. Specifically, the average differences on all subjects were negligible and also statistically insignificant ( $p > 0.05$ ). As the data suggest, the difference in average academic performance still existed in Grade 3, but became seemingly less pronounced as time passed. Oshima and Domaleski (2006) offer similar findings in their research to determine the difference in academic performance of children born in the first 6 months of the year as opposed to those born in the last 6 months. Although their research included the kindergarten or pre-school phase, they found that the performance gap for the older children was evident in kindergarten but decreased rapidly in Grades 1 to 3, although it persisted until Grade 5, after which it levelled off in Grades 6, 7 and 8.

When one looks at the differences in academic performance across 5 years, in Grade 5, it becomes evident that the difference in means among all subjects indicate that the academic performance of both redshirted and on-time learners was similar. Here, most subjects and both averages showed a mean difference of less than 3.7, indicating inconsequential differences between redshirted and on-time learners in terms of academic performance over a period of 5 years. These findings could be compared to the findings of Carlton and Winsler (1999) who found that the age of school entry did not necessarily influence learners' academic progress. Their research discovered that younger learners in the classroom made just as much progress academically and socially

as their older classmates in the early Grades. The negligible differences found across a five-year period between redshirted and on-time students in this research pose the question of whether those additional negative repercussions, such as paying an additional year of school fees for pre-school, the possibility of boredom or needing academic interventions or special education or finally, entering the labour force a year later, justify a seemingly insignificant academic advantage.

#### 5.5 DIFFERENCES IN ACADEMIC PERFORMANCE BETWEEN REDSHIRTED AND ON-TIME GIRLS AND BOYS

Much has been alleged about the difference in academic performance between boys and girls, as well as between redshirted boys and on-time boys and, similarly, redshirted girls and on-time girls. Gender seems to become one of the crucial factors when trying to decide whether or not to delay entry into school and, according to much of the literature, it seems to be clear that boys are more often redshirted than girls. As noted by Ede (2004), boys are often viewed as less mature than girls, and not as academically ready, which could help explain the reason for such difference with regards to gender.

As mentioned, in the analysis of the data, two categories existed, namely Average 1 and Average 2. According to the data, the differences in averages between redshirted and on-time learners for both genders were rather large for Grade 1, but smaller for Grades 3 (only for Average 1) and 5.

For learners who fell in the Average 1 category in Grade 1, there was a mean difference of 8.9 between redshirted and on-time boys, indicating that redshirted boys did much better than on-time boys. Girls, in the same category, showed a mean difference of 9.71, showing again that red-shirted girls did much better than on-time girls. Thus, boys and girls showed more or less the same difference with regards to being redshirted or being on-time.

The Grade 1 boys who fell in the Average 2 category also showed a difference of 12.8 between the redshirted and on-time subgroups, demonstrating once more that redshirted boys performed significantly better than on-time boys. For girls in Grade 1 in the Average 2 category, there was a difference of 8.95 between redshirted and on-time groups, confirming that redshirted girls achieved better results than on-time girls. From the results it is clear that redshirted learners outperformed the on-time learners academically, as is confirmed by much of the internationally available literature. According to certain researchers, the gender variable can undoubtedly make a difference to academic achievement in school (Ede, 2004; Graue & DiPerna, 2000).

In Grade 3 the difference between redshirted and on-time learners in the Average 1 category was smaller, where redshirted boys performed marginally better than on-time boys, with a difference of 3.07. In the Average 2 category, redshirted boys performed much better than on-time boys with a difference of 12.4. For this Grade, redshirted girls also performed slightly better than on-time girls with a difference of 1.11 in the Average

1 category and considerably better in the Average 2 category, with a difference of 9.23. It is evident, that although redshirted boys and girls performed better academically than on-time boys and girls, the difference in academic performance was visibly smaller than that of the same subgroups in Grade 1.

In Grade 5, the results seem to be dissimilar. In the Average 1 category, a small difference of 0.26 was found, with redshirted boys performing marginally better than on-time boys. In the Average category 2, however, the on-time boys performed marginally better than redshirted boys, with a difference of -2.31. For this Grade and Average 1, redshirted girls performed better than on-time girls with a difference of 3.74. In the Average 2 category, on-time girls outperformed redshirted girls with a -0.1 difference. These results are especially noteworthy, since one would assume that being older and having had more time to develop the skills to prosper academically would give learners academic benefits.

## 5.6 HYPOTHESIS OUTCOME

The main research objective, the matter of whether age at Grade 1 enrolment influences the prediction of academic performance at the end of Grades 1, 3 and 5 navigated the current research. The rationale of the research was to understand the practice of redshirting in the Namibian context but, more critically, the research considered the following hypothesis:



The Null Hypothesis:

1. Ho: There is no significant difference in the academic performance as measured across Grades 1, 3 and 5 between learners who were redshirted and those considered as on-time learners.
2. Ho: There is no significant difference in the academic performance of boys and girls who were redshirted as measured across Grades 1, 3 and 5.

In terms of the earlier stated hypothesis, where the researcher postulated that redshirted learners do not perform academically better than on-time learners, the following can be concluded.

For Grade 1 learners, the null hypothesis can be rejected. The data suggest that in Grade 1, redshirted learners had an academic advantage in terms of their performance across all subjects, as the difference in means was bigger than 7% for all subjects. These findings are supported by the work of Graue and DiPerna (2000) on redshirting. Their data suggest that redshirted learners would outperform their peers and be top performers academically.

Contrastingly, the null hypothesis can be accepted for both Grades 3 and 5, as the data indicate a very marginal and mostly statistically insignificant difference in the academic performance, as measured across Grades 3 and 5 between learners who were redshirted and on-time learners. For Grade 5, specifically, the null hypothesis is accepted as the

data indicate a marginal and statistically insignificant difference regarding academic performance between redshirted and on-time learners, except for Average 2 and Natural Sciences. For Average 2, on-time learners performed slightly better than redshirted learners but this difference was not found to be statistically significant. For Natural Sciences, however, where the on-time learners also outperformed the redshirted learners, the difference was found to be statistically significant. To that effect, many other researchers (Carlton & Winsler, 1999; Deming & Dynarski, 2008; Furlong & Quirk, 2011; Graue 1993) also question whether redshirting has a significantly positive impact on school readiness or better long term academic advantages, as opposed to the readiness or better long term academic advantages of those who are on-time learners.

Moreover, no statistically significant differences regarding academic performance were found to exist between boys and girls who were redshirted. This stands in divergence to much of the available literature regarding which gender would be more likely to be redshirted, based on the reasoning that boys, when compared to girls, are more likely to be seen as “not school ready”. Based on the outcome of the current study, no significant academic difference between boys and girls seems to be evident. This begs the question of whether the convention to redshirt boys more frequently is necessarily academically advantageous to those redshirted boys. As previously mentioned, the CBS news programme, 60 Minutes (2012), reported that boys were more than twice as likely as girls to be redshirted. Moreover, the National Centre for Education Statistics found that boys were more often redshirted than girls (Katz, 2000). The findings in this study

regarding redshirting and gender, therefore, reveal that perhaps other extraneous variables have a larger impact on the academic performance of girls and boys, regardless of being young for their Grade.

The assumptions made in this research, as well as the theoretical underpinning of the study, was based on Vygotsky's socio-cultural theory, which regards readiness to learn as the instance where and when learners are able to interact with their peers and their environments successfully. Vygotsky regarded human development as social rather than individualistic, and an individual's development is thus, to a significant extent, a product and not a prerequisite of education; therefore, the result of his or her social, historical and cultural experiences. When one takes this into account, one has to interpret the findings of the study according to this theory. The decision to send learners to school should be based on their readiness to learn and not on the assumption that "older is better". Vygotsky (as cited by Black, Devereux, & Salvanes, 2008), postulated that, in his view regarding readiness to learn, learning, development and readiness for new learning often require guidance and instruction, and not simply the passage of time. The practice of redshirting learners, therefore, contradicts Vygotsky's view to some extent.

Taking this into account, the research has revealed that, in fact, being kept back because of having a birthday close to the start of a new academic year and consequently being the youngest in the class does not ensure a significant academic advantage over the course of, in this case, 5 years.

As reported earlier, researchers have varying views, opinions and findings as related to the effectiveness of redshirting and its ability to influence and predict academic achievement. While many advocate for it as a way to outperform peers academically and being at the top of the class, Graue (1993) and other researchers' work regarding redshirting (Carlton & Winsler, 1999; Deming & Dynarski, 2008; Furlong & Quirk, 2011) conflicts with this assertion, as these researchers found that learners who were redshirted because of having birthdates close to the cut-off time, did not appear to have any significant academic advantages over the other group of learners who went to school on-time, even if they had birthdates close to a cut-off date. Interestingly, Carlton and Winsler (1999) found that the age of school entry did not necessarily influence learners' academic progress and well-being. Their research discovered that younger learners in the classroom made just as much progress academically and socially as their older classmates in the early Grades. Interestingly, the findings of this study seem to concur with the academic findings of the above-mentioned researchers, in that redshirting does not seem to have predictive qualities in terms of whether or not a learner will perform better academically than on-time peers.

## 5.7 LIMITATIONS AND RECOMMENDATIONS

Throughout the study certain limitations became evident. Although there were several factors, such as parental involvement, socio-economic status, emotional maturity, quality of pre-school and social skills, impact on school readiness, this study only focused on

the birth dates at which learners entered formal schooling and its impact on long-term academic performance, across a five-year period. This might have been limiting in terms of the generalisability of the results, as academic success will not account for individual variables. Moreover, factors, such as teaching methods and styles, teacher competencies and curriculum variables, were also not taken into account and might have impacted the validity of the research findings.

An additional limitation to the study was the fact that it did not account for learners who were kept back due to low academic achievement in Grades 3 and 5. Failing a Grade as a result of poor results and not meeting minimum pass requirements were not considered, and this may have skewed the results for these two Grades. In respect to not having accounted for Grade failures, the researcher should have obtained this information and this might have been done in two possible ways. The researcher could have arranged to discuss this with the relevant Heads-of department with the specific grades as this information would have been already available or alternatively, had she obtained written consent from the learners and their parents involved, this specific question with regards to Grade failures could or might have been included on the consent forms. It is therefore obligatory to note that the researcher should have obtained individual parental and learner consent. This is especially pertinent as all learners involved were minors and in retrospect the researcher should not have only requested and accepted consent from the principals involved, as confidential cumulative learner record cards were handled. Failure to take care of and into account the above-mentioned

limitations, would have negatively impacted the validity of the findings of this research study.

In anticipation of some of these variables, the researcher attempted to minimise these effects and other related extraneous variables, by including a very large sample size and conducting random sampling of schools, class groups and learners, of both male and female learners. Finally, delimitations in this study included the fact that only certain Grades were selected, as well as the fact that the study was conducted in only the parameters of Windhoek, which limits the generalisability of the findings.

Nevertheless, having taken into account the limitations of the current study, based on the findings of this research, the following recommendations can be made:

General Recommendation:

- However limited, the researcher wishes that the findings of this research be made available to the Ministry of Education, Arts and Culture. Other than this research study, no other known research in Namibia as related to redshirting and the practice thereof, exists. These findings can be expanded on in future research studies and current investigations, as they are pertinent to future policy making and decisions related to school entry-regulations and laws.

#### Future Recommendations:

- Parents should be informed about the significance of being involved in and informed about their child's development and progress from an early age, as this is the phase where adjustments and interventions make the most noticeable difference. By understanding what milestones need to be reached when, what is required for school readiness and how to support these targets, parents should be better able to track their children's progress and early on, as well as put progresses and support in place, in order to prepare them as effectively as possible for formal education. This information should be widely available in simply put, practical guidelines, and distributed nationally to new parents.
- Recommendations by pre-school teachers should be regarded as valuable and well informed, since these teachers spend the majority of time with pre-school learners in terms of how they are able to master school readiness tasks effectively. Having an open and close relationship with their children's teachers, will enable parents to make the most informed decision about when to send their children to school, especially if they have last quarter birthdates. Ensuring open and constant communication in the pre-primary phase is essential to a learner's readiness, as well as to enable parents to make informed decisions about when to enter their child in formal school.
- The research highlights the importance of adequately trained pre-school teachers. Teachers in this phase are crucial in tracking the progress of learners, as well as

scaffolding learners appropriately, so that they reach the required level of readiness before entering formal education. It is vitally important that government invests in this particular phase of education, specifically teacher training with the focus on school readiness, in order to develop a strong foundation at this stage.

- Furthermore, research needs to be conducted in order to determine why there are large numbers of overaged learners in primary schools. As mentioned a limitation to the current study, involved not having accounted for learners in the redshirted category, who were not redshirted due to their birthdate, but rather due to academic failure and remaining in a Grade for more than the normal amount of time. Future and further research should make sure to mark the distinction between the two categories and eliminate those learners who failed a Grade from the sample in order to make findings more reliable, valid and generalizable.
- More research about redshirting, with specific focus on emotional school readiness, needs to be embarked on. Emotional maturity and school readiness have significant impact on each other and, in many instances, influence parents and educators' recommendations and decisions to keep learners back, if they have birthdays in the last quarter of the academic year. Not enough is known about this practice in Windhoek and Namibia in general.

## 5.8 CONCLUSION

The study revealed some noteworthy discoveries, especially as research of this nature has never been conducted in Namibia. Interestingly, it seems as though redshirting is to some extent enforced in the Windhoek primary school context. The term, redshirting, however, is not a familiar term to parents or educators alike, and this research introduced this term to the Namibian context in terms of school readiness and keeping learners back from formal education as a result of them having birthdays in the last quarter of the year.

As the research pointed out, the academic advantages of redshirting a learner seem to decline across Grades. More research needs to be conducted in order to account for extraneous variables, such as emotional readiness and parental involvement prior to entering formal education, which are closely related to school readiness, redshirting and academic performance. More information on the topic of redshirting should enable primary schools to improve their school entry processes and recommendations for those who are awaiting school readiness and formal education at a pre-primary level. On the whole, the evidence about the short- and long-term effects of redshirting is inconclusive. The evidence suggests that some benefits of academic redshirting are short lived and may in the long term be insignificant.

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APPENDIX 1: CERTIFICATE OF ETHICAL CLEARANCE FROM THE  
UNIVERSITY OF NAMIBIA



ETHICAL CLEARANCE CERTIFICATE

**Ethical Clearance Reference Number:** FOE/71/2016

**Date:** 21 January, 2016

This Ethical Clearance Certificate is issued by the University of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

**Title of Project** INVESTIGATING THE EFFECTS OF REDSHIRTING ON THE ACADEMIC PERFORMANCE OF PRIMARY SCHOOL LEARNERS IN WINDHOEK, NAMIBIA

**Nature/Level of Project:** Masters

**Researcher:** Jana Wessels

**Student Number :** 201203618

**Faculty:** Faculty of Education

**Supervisor :** Prof. L. Mostert

Take note of the following:

- (a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the UREC. An application to make amendments may be necessary.
- (b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the UREC.
- (c) The Principal Researcher must report issues of ethical compliance to the UREC (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by UREC.
- (d) The UREC retains the right to:
  - (i). withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,
  - (ii). request for an ethical compliance report at any point during the course of the research.

UREC wishes you the best in your research.

A handwritten signature in black ink, appearing to read 'Dr. H. Kapenda', is written over a horizontal line.

Dr. H. Kapenda  
Director—Centre for Research and Publications  
ON BEHALF OF UREC

APPENDIX 2: REQUEST LETTER TO OFFICIAL INSTITUTIONS TO CONDUCT  
RESEARCH

UNIVERSITY OF NAMIBIA  
FACULTY OF EDUCATION

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P.O.Box 790  
Windhoek  
Namibia

September 2016

Dear Sir/Madam,

**REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT RANDOM-  
LY SELECTED PRIMARY SCHOOLS IN WINDHOEK**

I, Mrs. Jana Vermeulen, am a Master of Education (Guidance and Counselling) student at the University of Namibia. In order to fulfil the Master of Education requirements, I have to conduct a research.

The topic of my research is: *Investigating the effects of redshirting on the academic performance of Primary School learners in Windhoek, Namibia.*

The practice of keeping learners back, in order to gain an academic advantage, is referred to in the literature as "redshirting" and the practice seems to have become prevalent internationally.

No previous study has been conducted in this area in Namibia and it is hoped that the findings of this study could provide some insight into Namibian school readiness policies as well as help parents and teachers alike make more informed decisions about the best age at which a learner should start formal education, especially when they have birth dates which range between 1 September and 31 December. The aim is to determine whether keeping a learner back an additional year before starting formal education leads to improved or increased academic performance. The research is purely for academic purposes .

In this quantitative research, an ex-post facto cross-sectional correlational research design will be used, where the researcher will make use of secondary data, namely school report card, results.

Schools and class-groups will be randomly selected after which purposeful criterion sampling will be used to select a total of 800 learners from grades 1,3,5 and 7. These learners will need to have birthdays that range from 1 September to 31 December. Two groups will be created, namely, redshirted learners and on-time learners who will then be compared in terms of academic performance.

The research process is envisaged as follows:

Learners will be selected based on their birthdates in Grades 1, 3, 5 and 7. Learners who will form part of the study need to have birthdates between 1 September and 31 December. Two respective groups will be created, namely the "On-time" learners and the "Redshirted" learners. "On-time" learners are those boys/girls who have birthdates between the 1st of September and the 31st of December and started Grade 1 the year that they turned 7. The "Redshirted" learners are those learners who have birthdays between the 1st of September and the 31st of December, but stayed back an additional year and only started Grade 1 during the year that they turned 8.

Moreover, in order to collect the correct data, I will make use of the report cards of 2015 and learners selected based on their birthdates, will now be in Grades 2, 4,6 and 8. The reason for doing this is that I need to look at an entire years results and in order not to post-pone my research until this academic year is completed, I chose to use existing data. I will therefore need permission to work with the class lists of the above-mentioned grades, where birthdates are indicated. Both boys and girls will be included in this study.

The envisaged visit to the schools will be from the 5th of September until the end of November 2016.

Please be advised that I do need identifiable data (gender, birthdates) ONLY for data analysis purposes. The information that the school provides will be treated as highly confidential and all ethical considerations will be taken as requested by the University of Namibia. Ethical clearance was obtained by the University of Namibia as well as authorisation and approval of the Ministry of Education and the Regional Director of Education.

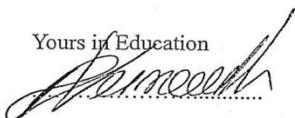
Your assistance and co-operation will be highly appreciated.

For any enquires or questions for clarification, please do not hesitate to contact me:

Cellphone: 081 601 8244

E-mail: wesselsjana1@gmail.com

Yours in Education



Jana Vermeulen

Main Supervisor:

Professor M.L. Mostert (Educational Psychology and Special Education)

Tel.: 061-2063346

E-mail: lmostert@unam.na

APPENDIX 3: PERMISSION LETTER FROM THE PERMANENT SECRETARY OF  
EDUCATION, ARTS AND CULTURE



REPUBLIC OF NAMIBIA

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**MINISTRY OF EDUCATION, ARTS AND CULTURE**

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Tel: +264 61 -2933200  
Fax: +264 61- 2933922  
Enquiries: C. Muchila  
Email: [Cavin.Muchila@moe.gov.na](mailto:Cavin.Muchila@moe.gov.na)

Luther Street, Govt. Office Park  
Private Bag 13186  
Windhoek  
Namibia

File no: 11/1/1

Mrs Janna Vermeulen  
Cell: 0816018244  
Email: [wesselsjana@gmail.com](mailto:wesselsjana@gmail.com)

Dear Mrs Vermeulen

**SUBJECT: PERMISSION TO CONDUCT RESEARCH STUDY IN KHOMAS  
REGION**

Kindly be informed that permission to conduct research for your Master's Degree in Khomas region is herewith granted. You are further requested to present the letter of approval to the Regional Directors to ensure that research ethics are adhered to and disruption of curriculum delivery is avoided.

Furthermore, we humbly request you to share your research finds with the ministry. You may contact Mr C. Muchila at the Directorate: Programmes and Quality Assurance (PQA) for provision of summary of your research findings.

I wish you the best in conducting your research and I look forward to hearing from you soon.

Sincerely yours

  
SANET L. STEENKAMP  
PERMANENT SECRETARY



*All official correspondences must be addressed to the Permanent Secretary*

APPENDIX 4: PERMISSION LETTER FROM THE KHOMAS REGIONAL OFFICE



REPUBLIC OF NAMIBIA

KHOMAS REGIONAL COUNCIL

DIRECTORATE OF EDUCATION, ARTS AND CULTURE

Tel: [09 264 61] 293 4356  
Fax: [09 264 61] 231 367/248 251  
Enquiries: Ms TL Shivute

Private Bag 13236  
WINDHOEK

File No: 12/3/10/1

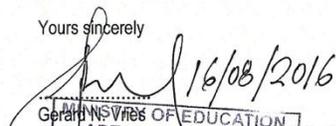
Ms Jana Vermeulen  
P.O. Box 6459  
Ausspannplatz  
Windhoek

**REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT RANDOMLY SELECTED PRIMARY SCHOOLS IN KHOMAS REGION**

This letter serves to give you permission to do research for your Master of Education (Guidance and Counselling) on the topic "Investigate the effects of redshirting on the academic performance of Primary school learners in Windhoek" in the schools of your choice. Permission is given with the attached conditions:

- ❖ The Principal of the school to be visited must be contacted before the visit and agreement should be reached between you and the Principal.
- ❖ The school programme should not be interrupted.
- ❖ Learners and teachers who will take part in this exercise will do so voluntarily.
- ❖ The Directorate of Education, Arts and Culture should be given a copy of your thesis and findings

Yours sincerely

  
16/08/2016  
GERALD WILSONS OF EDUCATION  
Director of Education, Arts and Culture  
PRIVATE BAG 13236 WINDHOEK  
16-08-2016  
DIRECTOR  
KHOMAS REGION

## APPENDIX 5: LETTER REQUESTING DATA COLLECTION TO PRINCIPLE

UNIVERSITY OF NAMIBIA  
FACULTY OF EDUCATION

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P.O.Box 790  
Windhoek  
Namibia

September 2016

Dear Sir/Madam,

### **REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT RANDOMLY SELECTED PRIMARY SCHOOLS IN WINDHOEK**

I, Mrs. Jana Vermeulen, am a Master of Education (Guidance and Counselling) student at the University of Namibia. In order to fulfil the Master of Education requirements, I have to conduct a research.

The topic of my research is: *Investigating the effects of redshirting on the academic performance of Primary School learners in Windhoek, Namibia.*

The practice of keeping learners back, in order to gain an academic advantage, is referred to in the literature as "redshirting" and the practice seems to have become prevalent internationally.

No previous study has been conducted in this area in Namibia and it is hoped that the findings of this study could provide some insight into Namibian school readiness policies as well as help parents and teachers alike make more informed decisions about the best age at which a learner should start formal education, especially when they have birth dates which range between 1 September and 31 December. The aim is to determine whether keeping a learner back an additional year before starting formal education leads to improved or increased academic performance. The research is purely for academic purposes .

In this quantitative research, an ex-post facto cross-sectional correlational research design will be used, where the researcher will make use of secondary data, namely school report card, results.

Schools and class-groups will be randomly selected after which purposeful criterion sampling will be used to select a total of 800 learners from grades 1,3,5 and 7. These learners will need to have birthdays that range from 1 September to 31 December. Two groups will to be created, namely, redshirted learners and on-time learners who will then be compared in terms of academic performance.

The research process is envisaged as follows:

Learners will be selected based on their birthdates in Grades 1, 3, 5 and 7. Learners who will form part of the study need to have birthdates between 1 September and 31 December. Two respective groups will be created, namely the "On-time" learners and the "Redshirted" learners. "On-time" learners are those boys/girls who have birthdates between the 1st of September and the 31st of December and started Grade 1 the year that they turned 7. The "Redshirted" learners are those learners who have birthdays between the 1st of September and the 31st of December, but stayed back an additional year and only started Grade 1 during the year that they turned 8.

Moreover, in order to collect the correct data, I will make use of the report cards of 2015 and learners selected based on their birthdates, will now be in Grades 2, 4,6 and 8. The reason for doing this is that I need to look at an entire years results and in order not to post-pone my research until this academic year is completed, I chose to use existing data. I will therefore need permission to work with the class lists of the above-mentioned grades, where birthdates are indicated. Both boys and girls will be included in this study.

The envisaged visit to the schools will be from the 5th of September until the end of November 2016.

Please be advised that I do need identifiable data (gender, birthdates) ONLY for data analysis purposes. The information that the school provides will be treated as highly confidential and all ethical considerations will be taken as requested by the University of Namibia. Ethical clearance was obtained by the University of Namibia as well as authorisation and approval of the Ministry of Education and the Regional Director of Education.

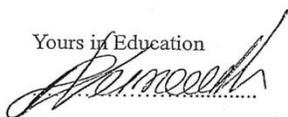
Your assistance and co-operation will be highly appreciated.

For any enquires or questions for clarification, please do not hesitate to contact me:

Cellphone: 081 601 8244

E-mail: wesselsjana1@gmail.com

Yours in Education



Jana Vermeulen

Main Supervisor:

Professor M.L. Mostert (Educational Psychology and Special Education)

Tel.: 061-2063346

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