

**AN INVESTIGATION INTO PARENTAL INVOLVEMENT IN THE LEARNING
OF MATHEMATICS: A CASE STUDY INVOLVING GRADE 5 SAN LEARNERS
AND THEIR PARENTS**

A half thesis submitted in partial fulfillment of the requirements for the degree of

**MASTER'S IN EDUCATION
(Mathematics Education)**

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Submitted by

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DECLARATION OF ORIGINALITY

I, Shemunyenge Taleiko Hamukwaya declare that this document is my own work written in my own words. Where I have drawn on the words or ideas of others, these have been acknowledged using the reference practices according to the Rhodes University Education Departmental Guide to Referencing.

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ABSTRACT

The purpose of this study was to investigate and document parental involvement in a San community in Namibia over a period of two months. The emphasis was to investigate whether San parents in the Omusati region were involved in the learning of mathematics of their children. The learner participants were selected according to those who were open to sharing their ideas. An interpretive approach was used to collect and analyse data.

The collected data was gathered from 9 participants (4 learners in grade 5 together with their parents, plus their mathematics teacher). Semi-structured interviews, parental contributions and home visit observations were the three tools that I used to collect data. The selected school is located in a rural area in the Omusati region of northern Namibia. The interviews were conducted in Oshiwambo (the participants' mother tongue) and translated into English and then analyzed.

I discovered that the selected San parents were involved in some but limited school activities. The findings of this study emphasizes that illiteracy may be one of the contributing factors of low or non-involvement of parents among the San community. Other factors which I found caused parents not to assist their children with homework was parents spending much of their time at the local cuca shops during the day until late in the evenings. The study also highlights possible strategies that can be carried out by teachers to encourage parental involvement in school activities.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

The aim of this study is to investigate the parental involvement of San parents in their children's learning of mathematics. The fact that Namibia was ranked the lowest of any country in the recent Southern Africa Consortium for Monitoring Education Quality (SACMEQ) test in mathematics and reading at the primary level, (Namibia. ETSIP 2006:12), motivated me to investigate the level of parental involvement in the learning of mathematics in the San communities. It is recognized that poor learning at the primary level carries over to higher levels, especially in mathematics and science, (Namibia. ETSIP, 2006:12), and thus the involvement of parents in the learning of their children particularly interests me. According to ETSIP, the main challenge is to raise the pervasively low quality of learning achievements in schools, (Namibia. ETSIP 2006:12). This means raising the foundation of quality in Early Childhood Development (ECD), enhancing the input of parents involved in the education of their children and raising teachers' competencies and improving school management and accountability for results, (Namibia, ETSIP, 2006:18). This research focused specifically on parental input of the San community in the education of their children.

This chapter provides an introduction to the study and explains why research of this nature was undertaken. The chapter begins with the background and context of the study, and then gives the rationale. Finally, the chapter gives an overview of the study.

1.2 BACKGROUND AND CONTEXT

In the Ministry of Education (MoE), 2006 National Standard and Performance Indicators for Schools in Namibia, key area 6, emphasizes the links between schools and parents in the community (Namibia. MoE, 2006:30). This policy emphasizes procedures for communicating with parents, and for creating awareness of parental involvement in

school activities, (National Standards and Performance indicators for Schools in Namibia, 2006:30). Parents are specifically encouraged to interact with teachers and respond to their children's progress reports. There is a need for comprehensive sharing about learners' learning and behaviour and how they can be supported at home. According to key area 6, parents are encouraged to be actively involved with the learners' progress in all aspects of the curriculum, (Namibia, MoE, 2006:30). Parents should engage with the school concerning its work and make useful contributions to it (Namibia, MoE, 2006:30).

The Namibia MoE, 2006 Education and Training Sector Improvement Programme (ETSIP) emphasizes that education should start at home (Namibia, MoE, ETSIP 2006:12). It stresses the value of parental involvement in the education of the child. One of the major aims of the ETSIP is to identify the needs of orphans and vulnerable children (OVCs), and children from marginalized groups such as the San, the Ovahimba and the Riemsvasmaaker communities, (Namibia, MoE, ETSIP 2006:12).

In 1996 the Working Group of Indigenous Minorities in Southern Africa (WIMSA) was established in Windhoek. This was an attempt to respond to the request of San communities across Africa for the establishment of a Non Government Organisation (NGO) which would effectively represent their problems, needs and concerns, (WIMSA background, 2006). Some aspects of WIMSA's mission statements are specifically geared towards assisting the San to acquire education and training.

WIMSA has managed to broaden the minds of educationalists and state officials regarding San educational needs, (WIMSA, 2002/03). Provision was made for the training of school boards and education mobilisers, (WIMSA, 2002/03). WIMSA also aims to increase the number of San learners attending school, identify the specific reasons for learners' dropout in each school setting and enhance family involvement in the children's education, (WIMSA, 2002/03). This was supported by the Namibian Minister of Women Affairs and Child Welfare, Netumbo Nandi-Ndaitwah during the General Assembly of WIMSA in Windhoek 2002, as she claimed that "WIMSA is like a shield

that protects the San from difficulties, cultural exploitation and human rights violations.” (WIMSA, 2002/03).

My motivation to carry out this investigation was to discover whether San parents contribute to and are involved in the learning of mathematics of their children. My personal perception was that the parental involvement in the learning of mathematics is very low. Ndlazi confirms this by saying that, “most parents do not involve themselves in activities of the schools which their children attend” (Ndlazi, 1999:1).

My experience during my own teaching career was that sometimes learners were given projects, investigations or tasks that required assistance from their parents. My perception was that this assistance was not always forthcoming. Whalley states that where parents become involved in their children’s learning, there are many benefits, relating to both the learning of their children and their own understanding of their children. It also impacts on their own raised self-esteem (Whalley, 2001:55).

However, as many of the San parents in Namibia are uneducated and do not value the importance and quality of education, children find it difficult to learn because of the lack of academic support at home (WIMSA, 2002/03). It appears that parents are not involved in their children’s schools and know little about the education system or what their children are doing in school (WIMSA, 2002/03). Another interesting fact is that the majority of the San do not reach grade 10. Most San learners drop out from school in the early grades (WIMSA, 2002).

Bishop’s (1988:182) assertion that each and every society engages in some form of mathematics such as “counting, matching, locating, measuring, designing, playing and explaining objects” resonates with this study and I specifically analyse the *multifaceted* role that parents play in supporting the learning of mathematics in their own children. In the deconstruction of parental involvement the study focused on both direct and indirect engagement. The former involves promoting activities that have an explicit mathematical agenda and fosters the development of capacity in numeracy and spatial

conceptualization (Bishop, 1979). This includes activities such as assisting with mathematics homework, sending children to do shopping, assisting in sorting different seeds into groups for sowing, counting animals and assisting in construction tasks.

The latter implies a more implicit and tacit engagement in mathematical notions and includes activities such as play. The study analyzed the range of traditional games and activities that parents play with their children. Some of the traditional games that parents should play with their children include Ndoti and Mangusa. Both games support the development of the four basic operations. It is important that parents encourage and support the learning process of their children by encouraging children to be experimental, making mistakes and occasionally experiencing failure, (Whalley, 2001).

As a highly marginalized group, the San are also ignored in the field of mathematics education research. I believe that this research will be valuable to the Ministry of Education and all educators as well as the government at large. It is very important to provide insight into the necessity and desirability of parental involvement as it would improve the quality of education in our public schools in general, and San schools in particular (Sarason, 1995:11-13).

1.3 RATIONALE FOR THE STUDY

I have taught in the San community in the Omusati region for a number of years and have been particularly concerned by the apparent lack of parental involvement in these communities. According to Piaget, individual children construct knowledge through their actions on the world: to understand is to invent, (Piaget, cited in van Harmelen, 2004). In conjunction with this, Vygotsky says that both individual and social interactions are important, (Vygotsky, cited in van Harmelen, 2004). This signifies that learners are required to construct their own knowledge by interacting with different participators in education such as teachers and parents. Through interaction with their parents children acquire new knowledge and skills to build on their pre-knowledge.

The rationale for choosing this study was to investigate the extent to which San parents contribute in school activities especially with regard to the learning of mathematics of their children.

1.4 OVERVIEW OF THE STUDY

This thesis is organized into five chapters. Chapter One provides an overview of the thesis. In this chapter, the background and context of the study as well as the rationale for the study is discussed.

In Chapter 2 the literature review pertaining to research in parental involvement, particularly the San people is discussed.

In Chapter 3 the research methodology selected for the study is discussed. The design of the interview schedule for teacher, learners and parents; records of parental contributions and home visiting are clearly elaborated. Ethical issues including voluntary participation, anonymity and confidentiality are also described in this chapter.

In Chapter 4 the analysis of data collected using tools explained in Chapter 3 are discussed and compared. The chapter also discusses and presents the findings from the analysis.

In Chapter 5 a summary and discussion of the main findings are presented. The connection between literature and the study findings are also discussed together with significance of the study, gaps left in the study, recommendations and implications and avenues for future research. Finally, I give my personal reflection on this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Parents are primary educators sided in education of their children as partners in school governance and as legal obligators of their children (Ndlazi, 1999:20-21).

In writing academic research work, the literature review is one of the main chapters that describes the past and current state of information. Normally, the information is drawn from conference papers, written articles, books, and government documents. It is where a researcher makes an argument and engages him/herself with other scholars' written work. Moreover, a literature review provides and shows what other researchers are saying about the research topic. The literature review ties the thesis together and it forms the platform to analyse and interpret the data. This literature review analyses documents that relate to parental involvement of the San communities in the teaching and learning of mathematics.

This study was done within the context of education reform in Namibia. In this chapter, I give a brief overview of the Namibian education system. I explain the teaching and learning system in Namibian schools after its independence and discuss how and why it has changed. I focus on mathematics education in the rural context of the San communities. I elaborate on marginalized groups in Namibia (the San people), looking at their cultural views and beliefs on education. I observe parental involvement in the education of their children. I then look at the learners' performance in mathematics in Namibian schools. I discuss and engage critically on learning as a social activity process and I analyse the direct and indirect role of parents' involvement in the teaching and learning environment.

I conclude this chapter by emphasizing the fact that parents should involve themselves and invest more in their children's education, particularly in science subjects such as

science and mathematics. My main focus in doing this study is to investigate whether San parents are contributing and involving themselves in the learning and teaching of mathematics of their children.

2.2 THE NAMIBIAN EDUCATION SYSTEM

2.2.1 Reform policy

Before Namibia's independence in 1990, Teacher Centred Education (TCE) was used as an approach for the teaching and learning process (Ministry of Education, 1993). Within the TCE system, a teacher was regarded as an expert while learners were labeled as empty vessels which needed to be filled. The learners' participation was limited and there was little room for them to challenge what the teacher had said. According to Thekwane (2001:4), "learners were forced to memorize the rules without understanding them." The apartheid dispensation allowed little room for critical questioning of the status quo amongst teachers.

After independence, the Namibian government, in particular the Ministry of Basic Education, Sport and Culture saw a need to review the education system (Ministry of Education, 1993). A lot has been done to bring a new system into practice and finally Learner Centred Education (LCE) was introduced in 1991 (Ministry of Education, 1993). The LCE approach is more learner-centred and democratic underpinnings became an important part of the new system.

In accordance with the new approach, Thekwane (2001:1) outlined some guidelines to the teaching of learner-centred mathematics:

- Understanding, communication, problem solving and autonomy. This means learners need to understand first what the problem is all about and then think of possible ways to solve it through interacting with others in pairs or in groups.

- The ability to reflect on own methods and thinking. Learners need to think back after solving the problem and see where and how to improve and which method to use.
- Creating a positive self-image and attitude among all learners
- Accepting the responsibility for own work. This promotes learners to have a feeling of ownership when they are doing their work.

In addition to the above guidelines, the Ministry of Education (1993) summarized the new policy under the following four major goals:

- Access – providing all learners with equal access to the knowledge and skills specified by the national curriculum. This also reinforces the Constitution's Article 20 that says education is no longer a privilege for a few but a right for all, (Sibeene, 2003).
- Equity – providing special support for particular groups of learners to rectify educational disadvantage. Equity focuses on fairness for education to be fair to every individual citizen.
- Quality – providing meaningful learning experiences which requires learners to go beyond merely acquiring surface knowledge. There is a need for quality learning materials which can bring about quality results.
- Democracy – Freedom for all stakeholders in education to do their part in the teaching and learning process.

According to the Constitution of the Republic of Namibia (Article 20), education is free and compulsory from the age of 6 to the age of 16, or the end of primary education (Ministry of Education, 1996). Further, the curriculum was implemented to accommodate all learners at the level of their age and understanding (Ministry of Education, 1996).

The curriculum emphasises quality and meaningfulness of learning. The Broad Curriculum for Basic Education (1992), explains LCE as the approach which places value on the learner's existing knowledge, skills, interests and understanding, derived from previous experience in and out of school. The natural curiosity and eagerness of all

young people to learn to investigate and make sense of a widening world must be catered for by a variety of challenging and meaningful tasks. Learners' perspectives must be appreciated and taken into consideration in the work of the school. Learners should be empowered to think and take responsibility not only for their own, but for each other's learning and development. They should be as partners in education, rather than receivers of education. Teaching and learning strategies should accommodate different learning styles to enhance the academic progress of learners from all cultural backgrounds (Banks, 1994).

In 1993, a new national teacher education program replaced the previous program which had been operating along ethnic lines and was based on an examination system. The new approach focuses on learning with understanding, whereby learners have to investigate and carry out practical activities. Teachers become facilitators of the teaching and learning process, while learners are active participants. Teachers in the LCE are the absolutely key to the outcome of Namibia's reform goals as they are 'reflective practitioners'. Learners learn from each other by doing group work which gives them an opportunity to share ideas amongst each other.

In order for the learners to develop their own understanding, teaching is always at the center of the teaching and learning process. In learner-centered education, a learner is conceptualized as an active inquisitive human being, striving to acquire knowledge and skill to master his/her surrounding world (Thekwane, 2001:2-4).

LCE is grounded in constructivist theory. According to Bodner (1986), constructivism is whereby knowledge is constructed in the mind of the learners. This means that learners construct their own knowledge by learning with understanding as they learn by doing.

His idea was supported by Masingila and King (1997: 119) as they stated that:

By encouraging students to do Mathematics that uses both other's mathematics practice and their own, teachers can help students make

connections, develop deeper mathematical understandings, and expand their beliefs about what mathematics is.

Learners do not simply mirror and reflect what they are told or what they read; they look at the meaning in real life. Learners are trying to find regularity and order in the events of the world even in the absence of full or complete information (Bodner, 1986:874). Piaget cited in van Harmelen (2004) believes that knowledge is acquired as the result of a life-long constructive process in which we try to organise, structure, and restructure our experiences in light of existing schemes of thought, and thereby gradually modify and expand these schemes (Bodner, 1986:874).

Cobern (in Naidoo, 2005) defines constructivists' theory as:

For constructivists, learning is not knowledge written on or transplanted in a person's mind as if the mind were a blank slate waiting to be written on or an empty gallery waiting to be filled. Constructivists use the metaphor of construction because it aptly summarizes the epistemological view that knowledge is built by individuals.

Teachers should structure lessons appropriate for each task delegated to them. There should be variation in the organization of the class according to the task in hand: individual work, work in pairs, small groups, larger groups and/or the whole class. There should be variation between teacher-directed, teacher-facilitated, and learner-directed work. This depends on which is the most effective in relation to the learning objectives and content of the lesson. Teachers need to help and support each other as well as to provide active practices in a learning situation. Children respond best when they are interested in the things they are learning. Therefore, it is the teacher's responsibility to find out what the learners are interested in, and to plan learning activities which cater for those interests and which are meaningful to the learners.

Constructivism may help to re-conceptualize the teaching of mathematics, but it must be said that it does not strictly imply or disqualify any teaching approach. We need to let learners construct their own meanings; the teacher (and peers) must interact with learners to negotiate a passage towards socially accepted knowledge (Mellin-Olsen, cited in

Ernest, 1993). A teacher who teaches from a constructivist viewpoint in deciding the “subject matter for teaching a lesson” takes into consideration the learner’s prior knowledge or ability. Prior knowledge includes the traditional cultural knowledge that learners bring to the classroom (Naidoo, 2005).

However, I experience that the new approach does not achieve the four goals (on page 16) of education entirely. For example, if everything was as democratic and ideal as I have indicated, then there would not be any marginalized groups and communities that lack the basic resources for education.

2.2.2 Marginalized groups in Namibia

The Intersectoral Task Force on Educationally Marginalized Children (ITFEMC), under the (then) MBESC, identified San children as one of the three major “educationally marginalized” group in the country, along with the Ovahimba and the children of farm workers (a great many of whom are San), (Hays 2006). Hay (2006:26) mentioned that, these minorities experience barriers to formal education stemming from poverty, low socio-economic status, stigma surrounding their culture, and ‘remoteness’ – most San and Ovahimba students live very far from government schools. In an attempt to address these challenges, the Namibia Education Policy Options for Educationally Marginalize Children (NEPOEMC) emphasises the need for flexibility in education.

Hays (2006:26) mention that:

The main theme of this policy (NEPOEMC) is “Flexibility”. It is necessary to use a number of unconventional approaches in order to achieve education for all educationally marginalized children.

Like other countries in Africa, Namibia has many groups of marginalized people. These include: the Himba, the Tjimba, the Herero, the San, and the Khoisan. These people are living deep in the farms, mountains, and in the forests of Namibias rural areas and are hardly seen by the government representatives. In this study, I focus on the San communities.

2.2.2.1 The San Community

The San are the aboriginal people of the Southern Africa. Their distinct hunter-gatherer culture stretches back over 20 000 years, and their genetic origins reach back over one million years (African People and Culture, 2008). Recent research indicates that the San are the oldest genetic stock of contemporary humanity. Ten thousand years ago their exclusive domain stretched from the Zambezi to the Cape of Good Hope, from the Atlantic to the Indian Oceans. Three hundred years ago European colonists called them “*untameable*” while the Dutch in South Africa called them “*Bushmen*”, (A cultural profile: The Mbarakwengo Bushmen of the Kalahari, 2008).

The San are traditionally a very mobile society (A cultural profile: The Mbarakwengo Bushmen of the Kalahari, 2008). There are many different San peoples – they have no collective name for themselves, and the terms “Bushmen”, “San”, “Basarwa” (in Botswana) and so on are used interchangeably (African People and Culture, 2008). They speak a variety of languages, all of which incorporate ‘click’ sounds represented in writing by symbols such as! Or / (African People and Culture, 2008).

The San speak a complicated language with many different tongue clicks, but they are not the only ones who use this means of expression. There are various groups of San people whose languages differ to such an extent that they can hardly communicate with one another. The San people of the Kalahari are of tiny stature and with light yellow skin, cannot understand the language of the much taller and darker-complexioned San people in the Okavango region, (Matjila 2000: 78). Many San people now speak the Bantu language of their dominant neighbours (A cultural profile: The Mbarakwengo Bushmen of the Kalahari, 2008).

Gradually San people changed to nomads and currently, some of them have become farmers. In Namibia, the San community is one of the biggest groups of the marginalized people. They are mostly found in the following regions: Ohangwena, Oshana, Omusati, Caprivi, Kavango and Oshikoto see Figure 2.1.

A map of the thirteen Namibian political regions



From figure 2.1, regions 1, 5, 8, 10, 11 and 12 are where San people are mostly found.

In 1996, the Working Group of Indigenous Minorities in Southern Africa (WIMSA) was established in Windhoek. The aim was to respond to the request of San communities across Africa to the establishment of a Non-Government Organisation (NGO) which would effectively represent their problems, needs, and concerns (WIMSA, 2006). In most cases, San people are totally neglected by government and this makes them live in very poor conditions (WIMSA, 2006).

From my experience, I have noted that many San communities do not value the importance of education for their children. Talking from personal observation, having grown up in this community, when a San reaches the ages of 14-15 their parents generally encourage her to leave school and start a family. The San lack general knowledge and worldly experience due to their isolation (WIMSA annual report, 2007).

One of the major priorities of the Education and Training Sector Improvement Programme (ETSIP) is to identify the needs of Orphans and Vulnerable Children (OVCs) and children from the marginalized groups such as the San, the Ovahimba and the Riemsvasmaaker communities (Ministry of Education, 2006:12).

In Namibia, poverty is widespread and there are increasing numbers of children living in difficult circumstances, in particular children from the marginalized groups such as the San communities (Ministry of Education, 2007:13). In 2001, it was estimated by the government of Namibia's Emergency Management Unit (NEMU) that, between 17, 000 and 22, 000 of the country's estimated 34, 000 San were dependent on food aid (James Suzman 2001a:7, as cited in Hitchcock, Biesele and Lee 2003: 6). Table 2.1 shows the number of San people in Southern Africa countries. The information presented from table 2.1 was collected by Legal Assistance Center, Windhoek - Namibia 2001.

Table 2.1 Number of San people in Southern Africa in 2001

<u>Country</u>	<u>Number of San</u>	<u>Size of Country in km²</u>	<u>San Population Density (individuals/ km²)</u>
Angola	3,5001	1,246,700	0.0028
Botswana	47,675	581,73047	0.0820
Namibia	34,000	824,290	0.0412
South Africa	7,500	1,221,0407	0.0061
Zambia	300	752,580	0.0004
Zimbabwe	2,500	390,580	0.0064
<i>Total</i>	<i>93,4755</i>	<i>5,016,950</i>	

It can be concluded from table 2.1, that Namibia has the second largest San population in southern Africa.

2.2.3 Culture and education

The word ‘culture’ comes into the English language around 1430. It has roots in the Latin word ‘cultura’ meaning ‘cultivation’ or ‘tending’. It originally referred to the cultivation of the soil, or the raising of a plant, animal or product. By the early 19th century, ‘culture’ had taken on the meaning of ‘refinement of mind, taste and manners’, that is, a cultured person was a ‘civilized’ person – an educated person with ‘good manners’. The American Heritage English Dictionary now gives its main definitions as: ‘the totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought’ (Murray, 2004).

Education is used by people as an instrument of deliberate social change. It is designed to awaken students’ consciousness about social problems and to engage them actively in problem-solving. Nkabinde (1997: 160) emphasizes that education content must relate to one’s life but it must not only be limited to one’s imagination. Culture has been defined as “the way of living of a human group”; it involves everything we learn as members of a society, whether this is within social, political, economic, religious, and/or linguistic institutions. This learning concept includes not only the knowledge of skills to survive physically or socially but even how to express emotions, appreciate music, or experience pain (Chinoy, cited in Ostrosky-solis, *et al.*, 2004:37). Culture is a product of human interaction and occurs mostly through language. It is not static; it is always changing in response to environmental change and contact with other cultures (Murray, 2006). In addition, culture is universal, it is created and passed on and adapted and changed from generation to generation. It is a process and it is always in process (Murray, 2004).

Culture does not refer to people’s customs artifacts and oral traditions, but to what people must know in order to act as they do, make the things they make, and interpret their experience in the distinctive way they do. Thus, they would argue that to be a mathematics teacher, one needs more than the mathematics content knowledge – one also needs the cultural knowledge of mathematics teaching (Setati, 2005).

Although culture and education are factors that significantly affect cognitive performance, it is often difficult to distinguish between the effects of education and the effects of culture. One of the goals of the Namibia Pilot curriculum is to promote human

rights to have respect for oneself and respect for others, their cultures and religious beliefs (Ministry of Education, 1996).

Some aspects of WIMSA's mission statement are to assist the San people to acquire education and training. WIMSA has managed to broaden the minds of educationalists and state officials regarding San educational needs (WIMSA Annual Report, 2002/03). Provision is made for the training of school boards and education mobilisers (WIMSA Annual Report, 2002/03). WIMSA also aims to increase the number of San learners attending school, identify the specific reasons for learners' dropout in each school setting and enhance family involvement in the children's education, (WIMSA Annual Report, 2002/03). This was supported by the Namibian Minister of Women Affairs and Child Welfare, Netumbo Nandi-Ndaitwah during the General Assembly of WIMSA in Windhoek 2002. Nandi-Ndaitwah (Nandi-Ndaitwah as quoted in WIMSA Annual Report 2002/03) explained that WIMSA is like a shield that protects the San people from difficulties, cultural exploitation, and human rights violations.

Most of the San live in remote rural areas without access to any effective telecommunication. They are often left with no choice than to appear unannounced at the WIMSA office (WIMSA Annual Report, 2007). Many of the San people are dropping out of school due to lack of funds despite their potential and academic abilities (WIMSA Annual Report, 2007). Some of the San people are leaving their home environment to seek employment mostly far away from their families. Poverty has forced many young San males to join the defense force in order to support their families.

WIMSA is planning to introduce a focus on child literacy as a means of raising awareness and promoting acceptance of San culture. In addition, it simultaneously completes the development of curriculum materials underway for specific San language groups. WIMSA has time and again emphasized that the San will succeed in their ongoing struggle for justice, dignity and control of their own destiny. The younger San generation need to be convinced that traditional cultural values and the advantages of modern life can be balanced (WIMSA Annual Report, 2002/03). The San heritage and

culture have become significantly more important to San communities around the region. The officials acknowledge for example that the San possess prior intellectual property rights to the Hoodia succulent as an appetite suppressant. (WIMSA Annual Report, 2002/03).

According to Haralambos and Holborn (1995), the major role of the education system is cultural reproduction. Each learner's cultural heritage ought to be seen as a legitimate form of capital. According to Nkabinde (1997 160:161), "children from all backgrounds have the right to be taught their history and there is no need for one culture to be imposed on the majority".

2.2.4 The rural context

In Namibia, the education system is the same whether for urban or for rural schools. However, having been a teacher for 8 years now, I have observed and noticed however that there are huge differences between urban and rural school when it comes to distribution of materials, the school infrastructure and access to different learning environments. Most of the schools located in rural areas are neglected. These schools are disregarded in terms of development and as a result, these schools are performing poorly in all disciplines of schooling (Ministry of Education, 2006:12). Inequalities are most evident in the distribution of resource inputs and learning outcomes. For that reason, parents should be more involved in the education of their children (Ministry of Education, 2007:19).

2.3 MATHEMATICS EDUCATION

2.3.1 Learner Centered Education (LCE)

Mathematics is a dynamic, living and cultural product. It is more than an accumulation of facts, skills and knowledge (Masingila & King, 1997:119). The learning of mathematics involves conceptual structures, general strategies of problem solving and attitudes to and appreciation of mathematics. Mathematical knowledge and methods of inquiry constitute an essential part of and contribute to all modern science and engineering. Today's

learners are living and working in an era that is dominated by computers, worldwide communication and global economy. Moreover, mathematics is the key to success in this world where the economy requires workers who are preparing themselves to absorb new ideas, to perceive patterns and to solve problems (Ministry of Education, 2005:2).

According to the Namibian mathematics policy (Ministry of Education, 2005:2), the purpose of mathematics for learners is:

- to develop their mathematical knowledge and oral, written and practical skills in a way which encourages confidence and provides satisfaction and enjoyment;
- to apply mathematics in every situation and develop an understanding of the part which mathematics plays in the world around them;
- to recognize when and how a situation may be represented mathematically, to identify and interpret relevant factors and, where necessary, to select an appropriate mathematical method to solve the problem;
- to acquire a foundation appropriate to further study of mathematics and of other disciplines.

The learning of mathematics education in schools is also supported by the Pilot Curriculum, as explained below:

In mathematical area of learning, learners understand and master a variety of mathematical skills, knowledge, concepts and process in order to investigate and interpret numerical and spatial relationships and patterns that exist in the world. It helps learners to develop conciseness and logical and analytical thinking, and to apply them to other areas of learning and real life (Ministry of Education, 1996).

According to the Namibian Pilot curriculum for formal education, mathematics is a compulsory subject from primary level to secondary level (Grades 1 – 10). Setati (2005) claimed that mathematics education is a speech in an ideological community and thus it imparts ways of talking, seeing and valuing what is relevant for that practice. This is a kind of shared knowledge which people in mathematics education need in order to be

regarded as participants (Setati, 2005). Polya and Dewey believe that “mathematics and problem solving is for everyone ties them to our professional forebears in mathematics education and the basic faith they had in human intelligence” (Stanic & Kilpatrick, 2001).

2.4 PARENTAL INVOLVEMENT

Formal education on its own cannot however fully satisfy the demands of the twenty first century. Parents must support and assist formal education in the interests of more comprehensive education (Van Schalkwyk cited in Ndlazi 1999:14).

The above statement is supported by the Namibian government, in particular by the Ministry of Education in the sense that the government is also encouraging the equal participation of all stakeholders in education. This will assist the teachers, learners, principals, as well as parents to know exactly the areas that need to be changed or improved (Ndlazi, 1999:20). According to Piaget cited in van Harmelen (2004), individual children construct knowledge through their actions on the world, as to understand is to invent. In conjunction, Vygotsky cited in van Harmelen (2004) stressed the fact that individual and social interactions are important. Learners are required to construct their own knowledge by interacting with different participators in education such as teachers and parents. Through interaction with parents, children should acquire new knowledge and skills to build on their pre-knowledge. In fact, parents need to be more involved in the education of their children (Ministry of Education, 2007:19).

We realize that providing education in a modern society is not an easy matter. We regard education of our children as a shared responsibility of the school, the home, and the community at large (Hon. John Mutorwa, Customer service Charter, 2000).

My personal perception is that the parental involvement in the learning of mathematics in general is very low, particularly in the San communities. Ndlazi (1999:1) confirms this by saying that “most of the parents do not involve themselves in activities of the schools which their children attend”. My experience during my own teaching career (especially as a school principal), is that when learners are given projects/investigations/tasks that

ideally require assistance from their parents, such assistance was not always forthcoming. Most of the parents are not actively involved in education. This issue was tabled during the 'Talk of the Nation' program on the Namibian Broadcasting Corporation (NBC) on 26 November 2007. In the programme, Binda who was the representative of Namibian National Teachers Union (NANTU) stated that "the majority of our parents are not actively involved in education, more needs to be done by parents" (Binda, 2007). During the same discussion, Pieters who was representing the Namibian National Students Organization (NANSO) stressed the fact that not many parents are not English speakers and the majorities are illiterate. Some parents do not even know the value of education, he further claimed (Pieters, 2007).

Crozier and Davies (2007) proved this when they conducted research with Bangladeshi communities in South Asia. Their study found that parents were not very, or and in some cases not at all involved in their children's education. Some parents knew very little about the education system or what the children were doing at school. The non-involvement of the parents is sometimes a result of the parents' occupation such as being farmers, shop keepers, religious leaders, traditional leaders and/or healers, politicians or professionals.

Whalley (2001) states that when parents are actively involved in their children's learning, there are many benefits relating to the teaching, learning and understanding of their children.

Parents should be fully informed in reports and during meetings on how their children are doing at school (Ministry of Education, 1996).

It is very important to provide insight into the necessity and desirability of parental involvement. This would improve the quality of education in our public schools in general, and the San schools in particular (Sarason, 1995:11-13). The ETSIP emphasized that education should start at home, (Ministry of Education, 2006:12). It stresses the value of parental involvement in the education of the child. In the WIMSA Annual Report, the Namibian Ombudsman, Bience Gawanas-Minney stated that "nobody can do

it for you; you, the San, you must do it for yourselves, take the power!” (WIMSA, Annual Report, 2002:5).

2.4.1 Why do parents need to be involved in school activities?

It is a given that the government has the responsibility to provide educational opportunities for all children. But as an African proverb indicates “*it takes a community to educate a child.*” The government cannot educate a child by itself. Among other things, it does not have sufficient resources to do so. Parents and the community support are needed in order to supplement the state efforts. Parents also have to participate in decision-making about their children’s welfare. In addition, parents’ involvement is also helpful for development of social skills, moral and democratic values.

2.4.2 Benefits of parental involvement in children’s education

The following are some possible ways that the school can benefit from parental involvement:

- It has a positive impact on pupils’ academic achievement (Peterson, 1989; Van Schalkwyk, *et al.*, 1996; Epstein, 1992; Chavkin, 1993; Henderson & Berla, 1994; Ndlazi, cited in Ndlazi, 1999). This means that, parental involvement can improve learner’s performance at school.
- Leads to better school attendance and reduced dropout rate (Flaxman & Inger, 1991; Squelch & Lemmer, cited in Ndlazi, 1999). If parents are involved in school activities, it is difficult for learners to dropout from school or be absent themselves without reason, simply because they know that the school will inform their parents.
- Helps parents to develop positive attitudes towards school (Brown, 1989; Squelch & Lemmer, cited in Ndlazi, 1999). For example parents take part in school activities such as helping in developing a School Development Fund (SDF) as it is written into Educational ministry policy.

In addition to the above, parental involvement strengthens the cooperation between the school and home. Learners can be guided by parents to do their homework properly. Teachers can be assisted by parents in teaching and other classroom activities. Parents can take responsibility for decisions taken during meetings and can help implement them and assist the school achieve its goals with a meaningful school development plan. According to Whalley (1999:20), parents have the opportunity to join a ‘Parents Involvement in their Children Learning’ (PICL) research group. Whalley (1999) highlighted the following points:

- Parents should be encouraged to observe and understand how and what their children are learning at school.
- Acknowledge the skills and competencies of parents and build on these to enhance our own pedagogical strategies.
- Encourage parents to feel equal and active in their involvement and to develop an information exchange as a two-way process.

2.4.2.1 Direct involvement of parents

The Ministry of Education (2007:6) stated some of the direct involvement of parents in the learning process like; share their ideas during parents’ meeting visit school every now and then, make decisions and give advice to the school management and support the school financially and take care of school properties. This was supported by John Allan (1996), as he claimed that parents should be directly involved through coming to school to check the attendance and attending devotions and visiting classes to observe teaching and learning. He further explained that parents should accompany learners on field trips and participate in school activities and fundraising events.

For the purpose of this study direct parental involvement refers to direct contributions that parent do to assist the child or the school.

The issue of direct involvement of parents in educational institutions in Namibia has been problematic over the past few decades, ever since I was a student from secondary school to tertiary education and now a school principal. Even as a principal, it is hard to convince parents to be involved in school activities. At the beginning of the year 2008 we had a parents' meeting where parental involvement was one of the crucial issues in our discussions. Surprisingly, although we held the meeting at the end of February, only one parent among 445 parents had visited the school to observe how her children were progressing.

Before Namibian independence (1990), parents were limited with regard to participation in schools activities. This point is supported by Mda and Mothata, cited in Nongubo (2004:11) who claimed that parents had little say over substantive educational issues and their involvement in education was limited. The community needs to be closely involved in the life of the school, both through the use of community expertise in teaching as a context for learning and as participants in school management and development. Parents need to provide resourceful learning materials to the learners such as: school bags, calculators, paying school development fund, and so on. Hence, parents are regarded as 'consumers' in the education system (Crozier & Davies, 2007:304). Parents should engage in school activities to ensure their children are not only school-ready but are also ahead of the game (Vincent & Ball, cited in Crozier & Davies, 2007:311).

2.4.2.2 Indirect involvement of parents

Education begins at birth – services must recognize the key role that parents are playing as their child's first educators, and parents' commitment to their children's' early education (Whalley, 1999:4). According to Whalley (2001), parents need to encourage and support their children during the learning process by allowing children the right to experiment, make mistakes and occasionally experience failure. Bishop (1988:182) asserts that each and every society should engage in some form of mathematics such as "counting, matching, locating, measuring, designing, playing and explaining objects".

According to Whalley (2001: 182)), parents need to encourage and support their children during the learning process by encouraging children to be experimental, make mistake and occasionally experience failure. Bishop's (1988:182) assertion that each and every society should engage in some form of mathematics such as "counting, matching, locating, measuring, designing, playing and explaining objects".

Parental involvement promotes activities that have an explicit mathematical agenda and fosters the development of capacity in numeric and spatial conceptualization (Bishop, 1979). Parents should be indirectly involved in assisting children in their learning of mathematics at home. This could include activities such as assisting with mathematics homework, sending children to do shopping, assisting in sorting different seeds into groups for sowing, counting animals and assisting in construction tasks. Also parents need time to play with their children, for example, playing the traditional mathematics games like: '*ONdota, Osholo*' and others, which involves the four basic operations.

Parents need to be indirectly involved in the learning process of their children through chatting with their children. They should attend sessions about key child development concepts, keep a diary of what their children do at home, go with the school on a trip to the museum or zoo park, and indeed, contribute to the home/school work (Whalley, 1999: 59).

Parents can also be indirectly involved in the learning process of their children by 'preparing' themselves for schooling as well as by attending parent's consultation meetings. Hence, parents are expected to play a major role in education by providing a supportive home and family background and giving encouragement (Crozier & Davies, 2007). They also need to "encourage their children to be 'critical thinkers' which is a corner stone of education and educationally fundamental" (Splitter, 1991: 91-95).

2.4.3 The role of parents in schools

The word "parent" is not only confined to biological parents but includes any other community members who can be co-opted to help (Ndlazi, 1999:37). The Namibia. MoE,

2006 National Standard and Performance Indicators (NSPI) for schools in Namibia, and the Key Area 6, emphasized the links between schools and parents in the community (Ministry of Education, 2006). This policy emphasizes the procedures for communicating with parents and creating an awareness of parental involvement in school activities (Ministry of Education, 2006). Parents are specifically encouraged to interact with teachers and respond to their children's progress reports. There is a need for comprehensive sharing about learners' learning and behaviour and how they can be supported at home. According to KA6, parents are encouraged to be actively involved with the curriculum. Parents should engage with the school concerning its work and make useful contributions to it (Ministry of Education, 2006).

Parents have a responsibility for their children's future well-being and their education. It must be borne in mind that children are educated by parents from birth (Ndlazi, 1999). I regard the following points as relevant ways in which parents can be directly and/or indirectly involved in supporting their children and school at large:

- Helping the child to learn at home, taking care of the health and welfare of the child;
- Ensuring that children are punctual;
- Teaching and sharing skills and experiences with learners both at home, at school, and outside during field trips;
- Participating in the smooth running of the school and regular checking on their child's learning progress;
- Giving financial contributions if possible, and helping with school construction when needed. Parents can also help with fundraising activities to improve school facilities and learning at the school.

According to the Namibia Pilot Curriculum (Ministry of Education, 1996), the school must keep parents informed about the broad curriculum and the subject syllabuses for each year. This should be done so that parents follow the progress of their children and support their education (Ministry of Education, 1996). When parents and the school work

together meaningfully, there is a greater likelihood of improvement in the attitudes of the parents towards the school and the educators. They are more willing to follow the school's programme positively in the interest of their children. For that reason, teachers are more likely to contribute toward the corporate life of the school (van Schalkwyk cited in Ndlazi, 1999).

Apart from the above-mentioned roles, there are still other numerous responsibilities relating to parents in education. Some of the responsibilities are:

- fundraising, voluntarily rendering service to the school during school functions such as a gala dinner, bazaar etc.
- helping in the development of school grounds, implementing of school rules and regulations.

Parents are regarded as policy makers when their decisions directly influence the school their own children attend (Dekker & Lemmer, cited in Ndlazi, 1999). These roles can be done only if teachers and parents are working simultaneously as partners.

Parents need to be competent and skilled in order to participate in the role of co-teachers/co-educators. This should be done through parenthood classes, induction into hearing their children reading, playing with their children, and/or by using the toy libraries together. In such a way, parents are seen as a resource (Dale, cited in Crozier & Davies, 2007). Parents need to share past experiences and relate them to what the children were currently doing or saying while they were playing. At the same time, parents are required to ask children their views and encourage them to make good choices and decisions pertaining to their future life.

2.5 PERFORMANCE OF NAMIBIAN SCHOOLS IN MATHEMATICS

Namibia was ranked the lowest in all the countries which participated in the recent Southern Africa Consortium for Monitoring Education Quality (SACMEQ) test in mathematics and reading at primary level (Ministry of Education, 2006). According to ETSIP, the main challenge is to raise the pervasively low quality of learning

achievements (Ministry of Education, 2006). Parents also need to be more involved in the education of their children (Ministry of Education, 2007).

From my own experienced as a school principal, I observed that the low performance of learners in schools particularly in mathematics is caused by some of the following factors:

- Poor learning and teaching environment in rural schools and shortage or lack of physical facilities that enable the teaching environment to be more conducive to learning.
- Lack of parental involvement in school activities. (Ministry of Education, 2007).
- The myth that mathematics is a difficult subject and teachers label learners as dull in mathematics (Cornbleth, 1996).
- Shortage of textbooks and instructional materials especially in primary schools (Ministry of Education, 2007).
- Fear of mathematics and lack of mathematical ability and skills (Gerdes, 1998).

The teacher has an important role to play in the performance of learners. Teachers act like a catalyst actively stimulating the learning process (Farrant, 1997). Considering all the challenges in the Namibian education system, the progress towards equity in education has not been rapid enough. At the current level of performance in education, Namibia is not producing citizens who are capable of making the country a knowledge-based economy as is hoped in its Vision 2030 (Ministry of Education, 2006). The Vision 2030 sets a very ambitious target that by 2030 Namibians should join the ranks of high income countries and afford all its citizens a quality of life that is comparable to that of the developed world (Ministry of Education, 2006).

Children learn best when they are actively involved in the learning process and the teaching methods. It is appropriate to encourage the active involvement and participation of parents.

“Improvements in teacher qualification have not yet translated into effective teacher quality and effective teaching. Even those who are formally qualified still lack competencies critical to improve student learning including English (as a medium of instruction from Grade 4 - 12), mathematics and science. Many teachers have difficulties of interpreting and implementing the curriculum and parents need to be more involved in the education of their children” (Ministry of Education, 2007:21).

My intention to carry out this research is to investigate the extent of parental involvement of San in the learning of mathematics for their child. Living and working with San people in my community for more than 30 years, I have always loved and been interested to carry out the research about San people, especially things related to education e.g. their history and culture, why are they marginalized and neglected, and their level of participating in education.

2.6 CONCLUSION

In this chapter, I analysed or reviewed the literature and information related to what is intended to be, or has been studied (Southwood, Carstens & Brauteseth 2004). I engaged the reader with the issue of parental involvement (direct and indirect) in the education of their children, particularly the San people. Furthermore the chapter explored the Namibian education curriculum in terms of teaching and learning of mathematics in schools. The chapter also emphasized the poor performance of Namibian schools in mathematics.

To conclude this chapter, I would say that, the school should encourage the involvement of the San parents in planning sessions and invite them to attend special occasions such as: prize giving ceremonies, sport activities days and other similar occasions. The school needs to keep informing parents about the school progress and invite them to participate in school activities. The San parents need to serve on different committees and need to be invited to help in teaching activities.

Learners should be more active to participate in the construction of their own mathematical knowledge by collaborating with their teachers, parents and their peer mates.

The next chapter, is about my research methodology, where I examine the process of research methods that are used to collect data.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter describes the research design of the study. It describes the approaches and techniques used to collect and analyze the data and how these constitute an integrated strategy.

Firstly it describes the research goals and research questions, followed by a description of the sample. Then the choice of research orientation and data collection tools is explained and justified. Finally ethical protocols and validity are examined.

3.2 RESEARCH GOALS

The goal of this research is to investigate the contribution of San parents in the learning of mathematics of their Grade 5 children.

3.3 SAMPLE

3.3.1 Type of school

I selected a primary school in the Omusati Region of Northern Namibia because it accommodates San learners. Also, their parents live nearby the school. San learners and parents are the focus of the study. I wanted to interview and observe the parents and children at home. A hostel school would not have been suitable, as then the parents would be living far away, and also not likely to be engaged in their children's schooling on a day to day basis. The choice of school was also influenced by convenience as it is situated nearby my home and I am familiar with the school community.

3.3.2 Participants

Five San learners in grade 5, their parents or guardians as well as their mathematics teacher were selected as the participants in this study. The reason I selected the Grade 5 learners is because it is the highest grade at this school. Learners in this grade are around 11 and 12 years old and they can respond to questions better than learners at lower grades. Hopkins (1993) points out that interviewing young children can be problematic because one might encounter difficulties in them explaining their thoughts and feelings, (Penlington 2004:62).

3.4 RESEARCH ORIENTATION

3.4.1 The interpretive paradigm

The research is orientated within an interpretive paradigm. As Bassey claimed, data collected by interpretive researchers are usually richer, in a language sense, than positivist data, (Bassey as cited in Nongubo, 2004:41). Hodgskiss (2007:29-30) stated that “the interpretive paradigm is concerned with interpreting and understanding human action”. He further claims that the best way to understand such a phenomenon is by studying it in natural contexts such as in a classroom. It provides a rich description of the phenomenon and, when possible, helps to develop some explanation for it (Ellis as cited in Hodgskiss, 2007:29). The researcher can identify patterns of meaning that emerge and can be interpreted in order to gain a better understanding of the phenomenon (Conrole cited in Hodgskiss, 2007:30).

3.4.2 Qualitative methods

This is a qualitative study which capitalizes on ordinary ways of getting acquainted with things, (Stake, 1995:49). Furthermore, the data does not include judgments about whether what occurred was good or bad, appropriate, or any other interpretive judgments. The data simply describes what occurred, (Patton, 1990:31).

According to Merriam, qualitative research is an umbrella term used to describe forms of enquiry which assist us to understand and interpret the meaning of social phenomena

with as little description to the natural setting as possible (Merriam cited in Hodgskiss, 2007:30). Furthermore, Bassey (1999:43) believes that the term qualitative can be used to describe the data collected by interpretive researchers, in that it usually consists of detailed observations, field notes, reports and interviews. In reference to my study of the San people, the qualitative approach is most appropriate because it can provide rich information as it uses different methods, to answer the research goal.

3.4.3 Case study

I used a qualitative case study as the method of doing my research. A case study is a study of an instance in action, (Nisbet & Watt, cited in Cohen, Manion & Marrison, 2000:181). It can provide a unique example of real people in real situations, enabling readers to understand ideas more clearly than simply by presenting them with abstract theories or principles. A case study can enable readers to understand how ideas and abstract principles can fit together, (Ibid, cited in Cohen et al., 2000:181).

Given that this study is an examination of a specific small set of learners, their parents and the teacher and one school it lends itself very well to the bounded character so suited to a case study and also the study of nuanced interactions between elements for which an interpretative case study is suited. It enables readers to understand how ideas and abstract principles fit together (Cohen et al., 2000: 181).

3.5 DATA COLLECTION TOOLS

Three data collection tools were used in the study:

- 1) Records of parental involvement
- 2) Semi-structured interviews
- 3) Home visits and observation

To reach my destination, I decided to:

- Ask a mathematics teacher to record the parental involvement/contribution of parents to the learners' homework.
- Ask Grade 5 San learners whether their parents are involved in their education and assist them in doing their mathematics homework.
- Ask parents if they are aware that assisting children in their learning process and involvement in school activities is very important and is their responsibility.
- Visit the San homesteads and see what children are doing after school.

3.5.1 Record of parental involvement

Over a period of two weeks, I asked the mathematics teacher to keep a record of the homework that requires parental assistance (See appendix 2). This provided me with evidence of parental involvement or non-involvement in the mathematics homework of their children in the weeks of the survey.

3.5.2 Interviews

I used semi-structured interviews as a means to collect data for the study. All the parents, students and the teacher in the sample were interviewed. An interview is a specialized form of communication between people for a specific purpose associated with some agreed subject matter (Arsenault & Anderson, 2000). Thus the interview is a highly purposeful task which goes beyond the mere conversation.

But despite the specificity of purpose, Arsenault and Anderson point out that the strength of the semi-structured interview can clarify questions and probe the answers of the respondent, providing more complete information than would be available in written form or from a rigid structured interview where all questions are predetermined. Interviews enable participants to discuss their interpretation of their world in which they live, to express how they regard situations from their own point of view (Cohen et al., 2000: 267).

From the mathematics teacher's interview I wanted to find out the extent of San parents' participation in the learning of mathematics of their child. Learner interviews were carried out to get their description of their parents' involvement and contribution to their mathematics learning. The parent interviews also explored the level of their involvement in their children's mathematics learning and contribution to general school activities.

The interviews were tape-recorded and transcribed. Interviews which were recorded in Oshiwambo were first translated into English and then transcribed. The analysis was carried out as soon as possible after the actual interview (Gillham, 2000).

3.5.3 Home visit observations

After collecting data from interviews and records of parental homework assistance, I carried out home visit observations. Home visits can provide an opportunity to identify concerns and pass on information both to and from parents (Fitzgerald, 2004:29). I visited the families of the participating children. The idea behind this was to observe the activities the children were engaged in at home with their parents after school.

3. 6 PILOTING

Following the drafting of interview questions I then piloted them. I conducted a pilot with 1 non-San learner in grade 5, 1 parent (non-San) and 1 mathematics teacher. These people were my neighbours.

A pilot study has several functions, principally to increase the reliability, validity and practicability of the questions (Oppenheim, 1992; Morrison, 1993; Wilson & McLean, 1994: 47 as cited in Cohen, Manion & Morrison 2000:260). The purpose of piloting was to find out if the questions I set can answer my research question or not.

During the pilot study, I came to realize that I needed to write down the interview questions for parents and learners in their mother tongue and not in English. Originally I

tried to translate as I asked the questions but it was difficult to translate into Oshiwambo when I was asking at the same time.

With the help of my supervisor I revised some of my questions after piloting. From this experience I came to realize that piloting is very important in carrying out research. This is where you can identify your mistakes or repetition and improve the interview schedule.

3.7 DATA COLLECTION PHASES

The data collection had five phases which are reported in table 3.1

Table 3.1 Phases of data collection

Phases of data collections		
Phase	Data Collection	Purpose
1	<u>Record of parental contribution and involvement -</u> A form was designed and the selected mathematics teacher filled it in for the duration of two weeks at the selected rural school.	The data collected in this phase gave me the evidence as to whether or not parents participate directly in their children's mathematics homework.
2	<u>Learner's interviews -</u> I interviewed five Grade 5 San learners. The interviews were conducted in Oshiwambo.	The data from this phase gave information on perceptions of the children on their parents' involvement in their learning of mathematics and in school activities.
3	<u>Parents' interviews-</u> I interviewed 5 San parents or guardians of the selected learners in Grade 5.	In this phase I explored the extent of parental participation and involvement in homework tasks in the eyes of the teacher. I focused on both direct involvement – i.e. assisting with homework tasks and participating in school activities, and indirect involvement such as engagement with play and other activities.
4	<u>Teacher's interviews-</u> I interviewed a mathematics teacher of the selected learners in Grade 5.	The data collected from the mathematics teacher illustrated the extent San parents were involved in their children's learning of mathematics. It also revealed

		examples of activities that parents are engaged in at the school. Furthermore it invited possible strategies for a teacher to encourage parents to be more involved in assisting their children in the learning of mathematics.
5	<u>Home visit observation -</u> I visited San homesteads of the parents and learner's I interviewed.	The purpose of visiting San homesteads was to observe and see what parents and children are doing at home after school or during the weekends. This evidence enriched the data I collected from the other four phases.

Table 3.1 illustrates the phases of how the data was collected in this study. It commenced with the teacher completing a record for one week of parental assistance or non-assistance with learner's homework. This was done by the teacher asking students each morning if and how parents may have assisted them with their homework.

The interviews were then conducted. Learners were interviewed first, and then parents and lastly their mathematics teacher. The order of the interviews was done purposefully because I wanted first to get information from the learners before their parents were interviewed. The last stage of data collection was doing home visits and observing what learners were doing at home with their parents and at play.

3.8 ETHICAL CONSIDERATIONS

My research was carried out within an ethic of respect for persons, respect for knowledge, respect for democratic values, and respect for the quality of educational research (Stake, 2005: 42, 59). Dale suggests that It is preferable to resolve all ethical dilemmas before starting a research (Dale 1990,46). Therefore the following ethical issues were addressed.

3.8.1 Ethical issues before the research

The following steps were taken before the commencement of collecting the data:

- ✓ Seeking voluntarily agreement by the participants to be part of the research and explaining in detail so that they understand what they are agreeing to. Voluntary participation includes awareness of being a part of a research project (Dane 1990:39).
- ✓ Seeking permission by writing letters to the Principal, teachers, parents, and appropriate ministerial officials (see Appendix 3a).
- ✓ Signing of a research protocol by each participant to ensure that the participant's consent is voluntary and informed. According to Dane (1990:40), the principle of informed consent refers to providing potential research participants with all of the information necessary to allow them to make a decision concerning their participation (see Appendix 3b).
- ✓ Explaining the purpose of the research clearly to the participants and explaining the right to withdraw from the research at any time.

3.8.2 Ethical issues during the research

I assured the participants that their identities would not be revealed. This was done so that other members of the San community would also not be deterred from participating in any other future research/studies.

3.8.3 Ethical issues after the research

The following steps were taken after the research:

- ✓ Storing securely tape-cassettes and data collected.
- ✓ *Anonymity* – no one would know which data came from which participant, therefore names used are not real. No one, including the researcher can reveal a participant's identity to any information pertaining to the research, (Dale, 1990:51).
- ✓ *Confidentiality* - the participants' identities will not be revealed and the research site remains confidential.

3.9 VALIDITY

By not relying on just one method of collecting data, I triangulated the data for purposes of enhancing validity. Anderson (1998:131) states that “triangulation is the use of multiple data sources, data collection in the study of some aspect of human behavior”. Triangulation of data combines data drawn from different sources and at different times, in different places or from different people, (Jenner, 2004:178). The other reason for using many methods is to prove what you will get from other methods. This means that I also wanted to crosscheck between different methods and confirm the validity of the data I have collected.

3.10 CONCLUSION

This chapter described and justified the methods used to collect data for this research. The design and plans of the research instruments used were explained. Ethical issues, the idea of piloting and validity were also addressed. This study is located in an interpretive paradigm and it is a case study.

The next chapter presents the data collected and their analysis as well the discussions.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

This chapter presents the data analysis, identification of themes, and a discussion of the conclusions. My research is focused on the participation and involvement of San parents in the learning process of mathematics for their children. What I analyse is based on a particular San community in the Omusati region of Namibia. There are also other tribes in this village living together with the San, who send their children to the sample school.

Firstly I construct a brief profile of each parent. Then I analyse the parent, the learner and teacher interviews. I look at the cross-links between a parent and his/her child and the teacher in terms of parental interaction relating to mathematics and schooling. The teacher's record of parental involvement using the template I had provided was analyzed. I also integrate into the analysis relevant observations from my visit to the selected San home.

4.1.1 The social and economic context of the participants and the school

I observed that this San community of little more than 200 people who are settled in three small villages of family clusters retains elements of traditional San culture but also practices elements of the modern culture. Typically they have a wooden stockade surrounding the family compound within which are several small cone-shaped huts made of wood covered in a mud mixture. The family ranges in size from 5 to 9 children. Many Bushmen (San) who have been forced off their lands now live in settlement areas that are unsuitable for hunting and gathering – they support themselves by growing some food, or by working on ranches (African Tribes – Bushmen/San, 2008). The compound pictured (See Appendix 1b) shows a San's permanent dwelling place in the community of the study. Then, Appendix 1a shows 'oshigadhi' or woven food container where the San people keep crops in.

The economic lifestyle of this community lies between hunters & gatherers and modern farming, and often they are doing both. Although settled in one place, this community still does some gathering of foods from the veldt. They collect nuts, roots and other wild foods. These practices go back thousands of years.

The community also takes care of their own cattle, sheep or goats and even donkeys and some crops. The numbers of animals are very limited for each family; perhaps two to three goats and a couple of cattle. The crops like *mahangu* and maize, are grown on large fields. Simple technologies such as ‘donkey ploughs’ are used. Essentially this is subsistence farming. In addition, some people do traditional crafts such as wood carving and necklaces which are sold to tourists or given as gifts. A few get occasional work in the homes of some of the non-San people living in the area. They have a very limited source of cash income. Most are outside the formal economy. The little they might have would come from selling a few craft items, a few might qualify to collect a small government pension, and a few from the occasional domestic work.

Some families do not have enough food for the children. As a result, children end up stealing food from neighbours or killing their goats or donkey for basic survival. These are often also eaten by the parents. After school, some children go gathering and looking for traditional foods like *oombutu* and *omanowa* in the fields. Some of them find themselves jobs after school, for example, ploughing or pounding *mahangu* or washing clothes for people in the area. They might be given food or money in return. In most cases it is the local Lutheran church that provides the children with clothes.

The San of my community are not immune to other social problems often associated with poor and marginalized communities. In living with the community I have observed many instances of San adults and parents spending the whole day away from home in the local *cuca* shop (shebeen or bar). Hitchcock, Bieseke and Lee (2003:11) stated in their report that “drinking is widely seen as the major problem among San people”. This has a knock-on impact on their parental care-giving and support for children. Thus, for example, the children in my community would be left alone at home often until late. In

some instances parents even take their children to the cuca shop after school and during the weekends.

There is a high level of adult illiteracy among the San in Namibia. The Deputy Minister of Education Dr Becky Ndjoze-Ojo stated that, “200 000 Namibians still are classified as illiterate and according to the deputy minister, the Government will continue to fight this problem” (New Era (Windhoek) 6 October 2008)). She further claims that those mostly affected are marginalized communities such as the Ovahimba, Ovahimba, Ovazemba and San. The Office of the Deputy Prime Minister Dr Libertina Amathila is championing the literacy and generally empowering programs of these marginalized groups, (New Era (Windhoek) 6 October 2008)). I was unable to get statistics on the specific literacy level of my community. However, one parent who I interviewed admitted she could not read and three claimed they could. But I can’t say how representative my sample is of the whole adult San community.

Some San people in Namibia now speak the Bantu language of their dominant neighbours (<http://strategy leader.org/profiles/marakeng.html>, retrieve 10/16/2008). The San of my community are no different. They speak Oshiwambo as the main language of the community, even among themselves. The young adults and children in this community cannot speak their traditional language (Khoe-Khoe), which only the older members still speak.

A relevant context feature of the culture or values of the San community is their view towards the pregnancy of young girls. I observed that parents of the community feel proud if a girl becomes pregnant, even though she is still young and attending school. Formal marriage as practiced by other cultures is not necessarily required. When a girl falls pregnant her parents encourage the father of the child to build a house and the girl moves in. If a girl falls pregnant she will typically leave school.

According to Hitchcock, Bieseke and Lee (2003: 7), “San themselves feel that they are marginalized minorities who have less access to right and resources than any other groups in Namibia and many of them say “We are people who suffer”.

This school is located in Omusati region, 60km from the town. The road to the school from the town is a gravel road. It consists of two classrooms and two sheds. It accommodates 80 learners (including the Wambos and the San) from grades 1 to 5. Learners are aged between six and sixteen. There are four teachers and two cleaners. Grades 2 and 3 are taught together in the same class which means it is multi-grade teaching. The school has a feeding program. Learners are provided with soft porridge every day after lessons. Two San parents volunteer to prepare the soft porridge for the children. Learners are expected to be involved in their learning process for example by doing their homework. Parents as stakeholders of education are expected to assist the school in all aspects, as indicated in the literature review chapter. Reports from Botswana, Namibia and South Africa illustrate experiences from a number of situations where community involvement in education has positive results in terms of school attendance and outcomes, (Hitchcock, Bieseke and Lee 2003: 7).

4.2 Brief profile of participating parents

Table 4.1 shows a brief profile of each participating parent. This includes their education level, their ages and the number of children they have or take care of. Furthermore the table also indicates that for every child, a parent is represented.

Table 4.1 profile of parents

Profile of P1	• Highest grade attended in school is standard 3. • Biological mother of L4 and she is married. • Mother of 6 children. • In her middle 40s and unemployed.
Profile Of P2	• Attended school up to standard 4.

	• Biological mother of L1. • Living with 7 children. • In her middle 40s and unemployed.
Profile of P3	• Attended school up to standard 4. • Biological parent of L5 and a guardian of L 2. • Living with 8 children. • In her middle 50s and unemployed. • She cannot read.
Profile of P4	• Attended school up to standard 9. • Biological mother of L3. • Living with 6 children. • In her middle 40s and working in the government as an institutional worker.

4.3 Matching between parents and their children

Table 4.2 presents a summary of the interview with parents and their children, together with the parents' contribution to mathematics homework.

Table 4.2 matching between parents and their children

Parents	Learners	Teacher records of parental contribution on learner's home work
<u>P1</u> • Attended school up to standard 3 • Discusses with other parent school- related issues • Attended parent and meetings	<u>L 4</u> • After school, harvests, takes care of the crops in the field and study. • Likes sport and Ohaye • The teacher gives him home work to do. • He gets assistance from his	• No assistance was given on any 6 home work

- contributes to school development fund - Asks the child what they learn at school - Does not have time to play with the child - The child likes to play Ondota which she learned at school - The child also likes drawing and writing numbers.	aunt - His parent checks his book - Sometimes when invited to the school they turn up, but sometimes not. - Parents contribute to school development fund. - He likes mathematics, because he understands it.	
<u>P2</u> - Attended school up to standard 4 - Discusses with other parents about school activities when they meet - Provide her child with shoes and school uniform - Has time to check in his books - Did not play with the child - Asks him questions related to mathematics - The child likes to play Ondota and Osholo. He learns these games from others.	<u>L1</u> - After school he fetches water, looks after goats, and collects firewood and studies. - He plays soccer - Only the English teacher gives homework, while during mathematics periods they only write notes - Parents do assist him - They help him with mathematics - They check in his book if they are around - They stay at the cuca shops - If they are invited to the meeting they turn up - They contribute to the school development fund - They encourage him to finish school - He likes natural science and mathematics	No assistance was given on any 6 home work
<u>P3</u> - Attended school up to standard 4 - Discusses school-related activities with other parents - Supports school and participates in its activities. - Doesn't know how to read - Doesn't check in child's book - Gives time for the child to do homework - Doesn't play with the	<u>L5</u> - After school he takes care of the crops in the field, looks after goats and studies - He plays soccer, Ohaye, Omboloko and Okasholo - The teacher gives homework - Parents never assist him - They stay at the cuca shops and come back home very late - They check in his books where he got ticks or crosses and congratulate him where he did well	No assistance was given on any 6 home work

child, because he is too young. • The child likes soccer and he learned it at school. • She is the guardian of learner 2	(ticks) • Parents turn up for the meeting if they are invited • They encourage him to finish school • He likes natural science because the teacher teaches well. <u>L2</u> • He plays Onkona, Omboloko and studies after school • He doesn't receive home work from the teacher • Parents did not assist him and never check in his book • Parents contribute to school development fund and she comes to school if she is invited • He likes mathematics and natural science • Mathematics is the easiest.	• Assistance was given with some of the homework • No assistance was given with any 5 homework
<u>P4</u> • Attended school up to standard 9 • Discusses school activities with other parents. • Really supports and assists her child • Asks her child after school where she has a problem so that she can help her • She plays together with her child e.g. Ondota • After school the child studies and draws some pictures or diagrams • The child like playing Ondota and making dolls, she learns these from others.	<u>L3</u> • After school she washes, pounds, cooks, takes care of the crops and studies • She plays Ohaye, Omboloko, Okasholo and Ondota. • The mathematics teacher give homework • The mother assists her in her homework and corrects her when she is wrong • The parent checks her books after school and during the weekends. • She congratulates her where she did well • The parent attends parent meetings and contributes to school development fund. • The parent encourages finishing school. • She like mathematics, Oshindonga, social studies and craft • Mathematics is the easy subject.	• Assistance was given to 4 home work • No assistance was given to 2 home work

4.4 ANALYSIS OF INTERVIEW WITH PARENTS

The next part of this section is the presentation of analysis of parents' interviews. The following analysis is done as follows:

- their contribution in school activities
- assisting in mathematics homework
- games they play with their children
- content the child comes with from school

4.4.1 Analysis of P1 interview

The parent said that she talks with other parents about school activities and assists the school. She gave an example of contributing to the school development fund and attending parents meetings if they are invited. As quoted below:

“Ohandi kwathele. Ngaashi okufuta iigandjwa yosikola nuuna nda ithanwa ko shigongi shaavali, ohi holoka”

“I do help. Like contributing to the school development fund and when we are invited to the parent meetings”.

She checks her child's book, assists where he has a problem and finds out what they learn at school.

P1 never plays games with the child, I quote:

“Thandi dhana naye, ohandi mu thigi po a yeke, ka puna ethimbo”

“I never play games with him, I left him alone. There is no time to play with him”.

She further explained that:

“Ihandi kala ndishi shoka omunano a longwa kosikola, oshoka I he shi lombwele ndje”

“I never know the content the child comes home with, hence the child never tells me”.

The child likes playing soccer and Ondota at home. He learnt these games from others.

The child also likes to draw some toys and write numbers.

4.4.2 Analysis of P2 interview

Like P1, this parent discussed with other parents issues related to education of her child. She provides her child with shoes and a school uniform. She assists her child in doing his homework.

I quote:

“Ohatu kundathana naavali ooyakwetu iinima ya nika elongo lyuunona wetu miigongi. Ohandi kambadhala opo ndi monene omunona gwandje oongaku noshowo omuzalo gosikola nokumu kwathela miidhigilwa ye”.

“We discuss school-related issues during school meetings. I also give my child school shoes and a uniform and do assist my child in doing his homework”

The child plays with sticks and does some counting. Sometimes, this parent sees the child use his figures when he is counting. As quoted:

“Oha dhana nuuti eta yalula. Oha longitha wo ominwe dhe okuyalula. Omadhimbo gamwe ohandi mu pula omapulo ngaashi, ngele oonomola dhika onde dhi gwedha kumwe ota dhi ka ninga ngapi”?

“He plays with sticks and does counting. He also uses his figures to count. Sometimes I ask him question like, what will be the sum if I add these numbers together?”.

This parent claimed that her child likes to play soccer, Osholo and Ondota. He learnt these games from others.

4.4.3 Analysis of P3 interview

This parent discussed with other parents about school activities when they met. She is involved in school activities like renovating of the school fence, and I quote:

“Ngaashi twa opalekele olugombo losikola”

“Like when we renovate the school fence.”

She is unable to read, therefore it is difficult to assist the child. However she is willing to assist with homework and gives him time to do his school work, as she stated that:

“Uupyakadhi owuli mpaka kutya kandishi okulesha. Itashi kwathele sha nda tala mo membo nege inandi tala mo, ashike nando ongawo ohandi mupe ethimbo opo a longe milonga ye yosikola”.

“The problem is, I don’t know how to read. It doesn’t mean any thing whether I check in his book or not, however I give him time to do his homework”

P3 doesn’t play with her child as she explained that:

“Ethimbo limwe aanona yamwe aashona, otandi dhana naye nduno? Osholo nenge oshike? Oha dhan owala Ondota yeta faneke, shila otandi mu pukulula owala kutya aantu hasho hafaneke omutse goka nona ngawo”.

“Some children are too young. What can I play with him? Is it Osholo or what? He can just play Ondota and do his drawing, I can just give him correcting like, and that’s not how to draw the baby’s head”.

4.4.4 Analysis of P4 interview

P4 discussed with other parents school-related issues. She asks her child the content of the subject that the child comes home with. This parent also asks her child where she has a problem so that she can assist where she can, and I quote:

“Ohandi pula omunona mpa ena uudhigu opo ndi mu kwathele”

“I ask my child where she has a problem so that I can assist where I can”

On the question of playing with the child, P4 stated that:

“ohatu dhana pamwe nokanona kandje ondota”

“We play together with my child”

P4 further explained that:

“Konima yosikola omunona gwandje ohalesha, oha faneke wo momambo ge. Okuhole okufaneka omahauto naanona”.

“After school my child study and draw some picture in her books. She likes to draw cars and babies toy”.

In addition, this parent stated that, she liked playing Ondota and making dolls. She learns these games from others.

4.5 DISCUSSIONS

From the interview with the parents I found out that all the participating parents discussed with other parents school-related issues when they met. They also assist the school in different cases, for example renovating the school fence, attending parenting meetings and contributing to school development fund. Apart from P3, other parents are able to read. P3 doesn't check in her child's books, however she gives him time to do his school activities. P2 and P3 do play with their children and assist them in doing their homework.

4.6 Analysis of interview with learners

The next part of this chapter analyzes the learners' interviews and the analysis is done in the following order:

- 1) activities they do at home after school
- 2) whether parents check their books
- 3) involvement of parents in school activities
- 3) motivation children get from their parents
- 4) learners' favourite subjects
- 5) career goals

4.6.1 Analysis of L1 interview

- L1 is a male aged 12.

L1 fetches water, looks after goats, and collects firewood and studies after school. He also plays soccer. He only receives homework in English, he claimed. He further explained that his parents assist him in mathematics when he doesn't understand, and I quote:

“Aakuluntu yandje ohaya tala momambo gandje, okuninga shila nda adha yaya kokefe”

“My parents check in my books, unless I find them at the cuca-shop”.

He also stated that his parents are involved in school activities; e.g. paying school fund. His parents also encourage him to study hard and finish school. He states:

“Aakuluntu yandje ohaya tsu ndje omukumo opo ndi ilonge etandi mana osikola yandje. Ohaya ti nandi ilonge nomukumo, ngele hasho otandi dhigwa po kaalongwa oyakwetu”.

“My parents encourage me so that could finish school. They say I must study hard otherwise my schoolmates will leave me behind”

His favourite subjects are natural science and mathematics. His career goal is to become a police officer.

4.6.2 Analysis of L2 interview

- He is a male aged 13.

L2 plays Onkona, Ondota, Omboloko and studies at home after school. On the question of which game he plays at home, this learner doesn't understand the term 'game', therefore he didn't respond to this question. L2 stated that he doesn't receive homework in mathematics. He further claimed that his parent did not assist him in mathematics because they did not check in his book and I quote:

“Aakuluntu yandje ihaya tala mo momambo gandje”

“My parent doesn't check in my books”

However, the parent is involved in school activities, as indicated by the example given when L2 broke a classroom window. The parent was called and requested to pay for the new glass.

This parent also contributes to the school development fund, as L2 claimed:

“Aakuluntu yandje ohaya futu ofuto yosikola”

“My parent contributes to the school development fund.”

His favorite subjects are mathematics and natural science. “Mathematics is the easiest subject” L2 stated. His parent encourages him to finish school and wants him to become a nurse after he finishes his education.

4.6.3 Analysis of L3 interview

- She is a female aged 12.

After school this learner washes, pounds, cooks, studies and chases birds from the crop field. She plays games like Ohaye, Omboloko, Okasholo and Ondota. She receives homework from her mathematics teacher and gets assistance from the mother:

“Omulongi gwetu gomwaalu ohetu dhigile iidhigilwa, nameme gwandje oha kwathelendje miidhigilwa yandje yomwaalu”

“My mathematics teacher give us homework and my mom assists me in my homework “.

The mother assists her during weekends with mathematics and if she is wrong she tells her the right answer. As she stated:

“Meme oha kwathe lendje uuna nda puka miilongwa yandje, ye ta lombwele ndje eyamukulo lyomondjila”.

“My mom assists me during the weekend in my subjects and tells me the correct answer.”

She further stated that her mother was involved in school activities like attending parent meetings and contributing to the school development fund. Her favourite subjects are mathematics, Oshindonga, social studies and craft and technology. Furthermore she claimed that mathematics is the easiest subject. The parent of L3 encourages her to finish school and work for herself.

4.6.4 Analysis of L4 interview

- He is a male aged 12.

L4 harvests, studies, looks after the field and makes sure birds are not destroying the crops and he fetches water. He likes playing Ohaye. He gets homework in mathematics. One of the aunts who is living with him, assists him with his homework and I quote:

“Meme Namatati oye ha kwathele ndje miidhigilwa yandje”

“Aunt Namatati is used to assisting me with my homework”

However, the parents check in his books at home. On the question of parental involvement, L4 stated that:

“Omathimbo gamwe ohaya ithanwa kosikola opo yeye ya tale iinyanga dhalwa yetu, ashike ihaya holoka”

“Sometimes they are invited to come and check in our books but they never turn up”.

However, they encourage him to finish school. L4 wants to become a teacher after he completes his study. His favourite subjects are English, Oshindonga, social studies and mathematics.

4.6.5 Analysis of L5 interview

- He is a male aged 13.

L5 plays soccer, Osholo, Ohaye, Omboloko. His mathematics teacher gives him homework to do and he gets assistance from his parents when they are at home and I quote:

“Ohatu dhigilwa iithigilwa komulongi gomwaalu, naakuluntu yandje ohaya kwathele uuna ndeya adhamo megumbo”.

“We get homework from the mathematics teacher and my parents help me if I find them at home”.

He further explained that:

“Uuna inandi ya adhamo megumbo ohaya kala yeli kokefe sigo taku toko”

“Sometimes my parents stay at the cuca shop till late in the evening”.

His parents do congratulate him if he does well in his book and they encourage him where he did not perform well and I quote:

“Ohaya pandula ndje mpa nda ninga nawa, naampa inandi longa nawa ohaya tsundje omukumo”

“Where I did well they congratulate me and where I did wrong they say I did not do well”.

The parents of L5 attend parent meetings if they are invited. They also encourage him to finish his education. L5 wants to become a teacher after completing his schooling. His favourite subject is natural science, because the teacher teaches well, he said.

4.7 DISCUSSION

From the interview with learners, I found out that all five interviewed learners do play mathematical games at home. The interviews indicate that, some learners get assistance from their parents, for example L1 and L3. It was clearly stated by all interviewed learners that, their parents stay at the cuca shop and come back very late. However, they all receive motivation and courage from their parents to finish school. The interviewed learners both explained that, their parents do attend parent meeting, respond if they are invited and even contribute to the school development fund. The interviews also indicate that, L1 and L5 likes Natural Science subject while others like Mathematics.

4.8 ANALYSIS OF INTERVIEW WITH A MATHEMATICS TEACHER

The interviewed mathematics teacher is aged 55. He is a married man. He has been a teacher for nine years, teaching mathematics and art at Junior phase (Grade 5). At the time when this research was done, he had been at this school for five years. He is a qualified mathematics teacher.

The mathematics teacher gives learners homework on a regular basis to do at home. Some of the homework requires the assistance of parents. However, the teacher emphasizes that “only some learners get help from their parents”. The teacher notices that

those who receive assistance are those from homes with educated parents. By staying among the San community, he realizes that most of the parents spend much of the day at the cuca shops until late. *“Some are there hunting for food, some are there hunting for beers at the cuca shops, and this causes some of the learners to become poor”* the teacher added.

He believe that parents contribute towards many school activities such as paying into the school development fund. On the other hand he claims that some of the San parents are not able to provide their children with food to eat. He sees that some parents are willing to support the school, but sometimes there is nothing that they can support the school with. *“Therefore they are struggling to come up with something”* he claims.

On the other hand the mathematics teacher states that the majority of these particular San parents do understand the quality of education and why education is important. He further claims that, if San parents are invited to the parents meeting, *“they do ignore”*. They are just walking around, doing nothing instead of assisting their children, the teacher further stated.

“They need to be forced, they need to be encouraged in order to come up with little, little what they have ...” the teacher explained.

This teacher is an experienced teacher, and he is familiar with the entire curriculum to be taught to learners. He sees that all areas in mathematics need parental involvement.

There are strategies that a teacher can use to encourage parental involvement in the learning of mathematics. He explained that he can create more activities for the learners at school and some to be done at home. A teacher can use locally available materials as teaching aids. A teacher can also invite parents to come and join the mathematics lessons. He can let them bring some sticks and stones as teaching materials. *“So that when I teach, parents can also assist their children in the lessons”* the teacher stated. The teacher felt that when these learners go back home, their parents can still do some reinforcement.

4.9 GENERAL DISCUSSION OF THE FINDINGS

In this section of chapter 4, I will discuss my analysis and interpretation of the data in the light of the literature reviewed in chapter 2. The emphasis of the discussion is placed on the involvement and contribution of parents in the learning of mathematics, more specifically with regard to the San people.

The discussion is based on eight themes. The themes were developed with the research goal in mind. These themes show me a level or degree of the participation of these particular San people in education. The themes are:

- 1) Education level of parents
- 2) Involvement of parents in school activities
- 3) Assisting of parents with their children's homework.
- 4) Activities that learners engage in at home after school
- 5) Motivation learners get from their parents
- 6) Subject/subjects learners like most
- 7) Strategies that encourage parents to contribute and involve themselves in school activities.
- 8) Factors that contribute to low performance of parents in school activities.

4.9.1 Education level of parents

All of the four interviewed parents attended school. However, there is one of them who is unable to read, even though she attended school up to standard 4.

4.9.2 Involvement of parents in school activities

The parents I interviewed responded that they discussed school activities with other parents. According to P3 she said that they used to discuss school activities during the meeting or wherever they met with other parents. During the interview I conducted I noticed that these parents do assist in some school activities. For example, they contribute

to the school development fund. Some are renovating the school fence and turn up when they are invited for meetings.

However, from the interview with L4 I noticed that the parent of this particular learner used to be invited to check his books at school but never turned up. “*Nando ya I thanwe I haye ya ko*” (appendix 3a, learner 4, L16) which translated means, “his parent never turns up to check his book”. However other learners claim that their parents come to school if they are invited. L2 gave an example of the case where he broke the classroom window, and when the parents were requested to pay for new glass they did so.

On the other hand, from the teacher’s interview, he explained that it is hard for these San parents to contribute to school activities. However he stated that, parents really need to engage in school work, the “majority they don’t understand education”. The teacher also explained that there are some parents who cannot afford to pay the school development fund for their child. From the interviews I realized that some of the parents do assist the school and some do not.

4.9.3 Assisting of parents with their children’s homework.

Apart from P3 who is not able to read, P1, P2 and P4 do assist their children with their school work. During the interview P3 stated that she gave time for her child to do his homework. Parents do check their books and ask what they learn at school. From the learner’s side I noticed that there is homework given in mathematics, even though L1 and L2 stated that the teacher did not give homework. Some learners showed some of the homework given and received assistance from their parents.

Although some parents assist learners in their home work, according to L1 his parents stay at the cuca shops till late in the evening. As he pointed out:

“Uuna inandi ya adhamo megumbo ohaya kala yeli kokefe sigo taku toko”

“Sometimes parents used to stay at the cuca shop till late in the evening”.

This was also supported by the interviewed teacher when he explained that, some of the parents hunt for beers at the cuca shops. By analyzing the parental record, most of the reasons why parent/s are not assisting children in doing their homework is that the “parent was unavailable”. When I visited their homes, where I found no parents, I was informed by the children that, they were at the cuca shops.

4.9.4 Activities learners engage in at home after school

From the interview with five learners, I found out that these learners almost always do the same activities at home after school. In most cases they stated that they play different traditional games like Ondota, Osholo, Okasholo, Mboloko. Some like playing soccer, while some do drawing and make dolls/toys. As evidence to support my data, when I managed to visit their home, I found them busy playing different games, (see appendix 1c).

4.9.4.1 Games

San children of this particular community are often alone at home in the care of older children with the parents away. Parents or guardians may be gathering food or looking after goats and other animals or socializing in a cuca-shop. At home children may play traditional games that involve numbers, for example: ondota (appendix 1c), osholo and okasholo.

Ondota: This game can be played by one or more children sitting together. It is done by digging a small hole about 15cm deep and 20cm wide. It is played with 12 marula nuts and one palm seed.

Rules: A child can play this game by picking marula nuts from the hole, using multiple of one up to multiple of twelve. Nuts can be picked when a palm seed is thrown up, and at the same time you take the nuts from the hole while your eyes are looking at the palm seed and it has to be caught before falling down. First, a person has to start with the

multiple of one until he/she finishes all the nuts before proceeding to the next multiple. If a palm seed falls down or someone takes a wrong multiple his/her chance is over and the next person can start.

Osholo: Osholo can also be played with marula nuts like Ondota, but it needs 48 holes (same size as for Ondota). Two or more people can play this game together. The holes have to be in a straight line, twelve in each line. Each player needs to be on his/her side with 24 holes. At the beginning only 16 of the holes will have two nuts each and the other 6 holes will be empty.

Rules: Players give each other a chance to play. The game can be started by one player taking the nuts on the 16th hole and shifting them to the next hole but he/she should put one nut per hole, then the other player can do the same on his/her side. They move on playing like this around their side. A player can choose his/her starting hole. If a player didn't find a nut in a last hole then the turn is over and the opposite player can play. Normally, before a player starts, he/she has to think where to start to gain more nuts.

Ohaye: Mostly this is a girls game. It can be played by more than three players. Firstly, a line in the form of a rectangle is drawn with dimensions of +/- 8m long and 4m wide. Two people can stand opposite each other outside the line and throw the ball to one another while the actor stands between them.

Rules: First the ball has to be thrown four times while a starter is preparing herself. Those who are throwing the ball have to try to beat the actor, and the actor has to try to catch up the ball. If the ball hits the actor, the chance is over. If a ball is caught, the actor has to throw that ball as far as possible, and run around the line, counting how many times he/she is running. If the actor counts up to 24 then she/he has to double his/her chance of playing. This means, if the actor happens to be hit by the ball, there is still a second or a third chance to play. The other players have to run as fast as possible to get the ball back.

All of the above-mentioned games involve the basic operations of mathematics. This means, by playing Ondota, children are subtracting and multiplying. While playing Osholo children can add numbers and in Ohaye children can do multiplication.

4.9.5 Motivation learners get from their parents

The five interviewed learners stated that their parents motivated them and encouraged them to finish school. As I quote L5:

“Ohaya pandula ndje mpa nda ninga nawa, naampa inandi longa nawa ohaya tsundje omukumo”

“Where I did well they congratulate me and where I did wrong they say I did not do well”.

L1 also claims:

“Aakuluntu yandje ohaya tsu ndje omukumo opo ndi ilonge etandi mana osikola yandje. Ohaya ti nandi ilonge nomukumo, ngele hasho otandi dhigwa po kaalongwa oyakwetu”.

“My parents used to encourage me so that I could finish school. They say I must study hard otherwise my schoolmates will leave me behind”

4.9.6 Subject/subjects learners like most

I came to realize that for four of the interviewed learners ‘*mathematics*’ is one of their favourite subjects, for reasons like; it is an easy subject and the teacher teaches well. L5 however stated that his favourite subject is natural science.

4.9.7 Strategies that encourage parents to contribute and involve themselves in school activities.

From the teacher interview, I came to realize that San parents can be involved in different school activities. He gave an example of assisting the school by contributing to the school development fund. The teacher also explained that parents can help their children when

they are doing their homework. I was so impressed by this teacher when he stated the other possible strategies of inviting parents to join the mathematics lesson. He suggested that parents bring along some teaching materials such as stones and sticks which can help learners with counting. “When I am teaching, parents can also help their children”, the teacher stated (appendix 3b, T15).

4.9.8 Factors that contribute to low involvement of parents in school activities

Reflecting on the teachers and learners interviewed, I noticed that the majority of parents do not stay at home during the day. They spend most of the day at the cuca shops. Therefore it is difficult for some of the learners to get assistance from their parents with their homework. It was stated by L1 that his parents stay at the cuca shops till late. The other evidence to support this claim is the parental contribution which was recorded by the mathematics teacher. Only L3 was assisted by her parent in most instances. However I came to notice that the level of education might also have an impact. The parent of L3 has the highest education level compared to others parents who were interviewed. Illiteracy might also have a negative impact on the involvement of parents in education. “Those who are from the house where educated learners arethese parents can assist children at home..” the teacher stated, (appendix 3b, T8).

4.10 CONCLUSION

To summarize this chapter for data analysis and discussion chapter, I came to realize that, the social and economic of the participants is retains elements of the traditional San culture and also practices elements of the modern culture. They survive from both hunters and gathers. I also realize that, the participated school it is a state school which accommodate the San and Wambos learners.

From the research I came to realize that the educational level of parents has an impact on the parental involvement in assisting children in their learning process. As it was indicated by some interviewed parents that, they really want to assist their children but because they are illiterate, they are not able to do so. I also learned that a parent staying

away from home until late also has a negative impact on the child's learning process, especially if a learner needs assistance from parents with doing his homework. It is clear that parental involvement does exist in this targeted school. This was supported by the mathematics teacher from his interview that "majority of these particular San parents do understand the quality of education". While some learners claimed that, their parents do get involved in school activities, whereby gave an example of renovating the school fence and others. However on the other hand some learners stated that, their parent, never turn up if they are invited to.

Furthermore, from conducting the research, I noticed that children from an educated family are more advantaged compared to other children. To support this point, from the interviewed learners, L3 was the only one who get full support and care from her mother, because of the educational level compare to other learners. Therefore, the low literacy skills of parents might have a significant negative impact on the learning process of the children. I also observed that learners play traditional mathematics games at school and at home as well. I further noticed that the participated learners receive motivation from their parents to finish school. From conducting this research I came to learn that there are many strategies a mathematics teacher can use to get parents involved in school activities.

CHAPTER 5

CONCLUSION

5.1 INTRODUCTION

It is clear that to some extent parental involvement exists in this selected school. From the research I came to realize that the educational level of the parents has an impact on their involvement in assisting children in their learning process. As was indicated by P3, she really wants to assist her child but because she is illiterate, she is unable to do it. Therefore illiteracy might have a negative impact on the involvement of parents in education. I also learned that parents' staying out and coming home late also has a negative impact on the child's learning process, especially if a learner needs assistance from a parent after school.

5.2 SUMMARY AND DISCUSSION OF MAIN FINDINGS

By doing this research I came to find that:

All of the four interviewed parents attended school, however one of them is unable to read. The four interviewed parents explained that they discuss school activities with other parents during parents' meetings or sometimes when they met with other parents. Some of these parents emphasized during the interview sessions that they do assist their children at home. Some of the participating parents explained that they never play games with their children, however on the other hand there are those who do play with their children. From this research I found out that some parents did check their children's homework books and assist them.

I noticed that some parents stayed at the cuca shop till late, and this result in them not helping their children with their homework.

By interviewing learners I discovered that their parents do contribute to school development funds and are involved in school activities such as renovation of the school fence, attending parents meetings (if only a few of them). I found out that learners would get homework for mathematics that was meaningful in their life and required parental involvement; however only some of the learners were assisted by their parents. I also found out from the interviewed learners that they do play mathematics games at school or at home. By doing home visits I found out that apart from playing games at home, some of the learners do art and craft I also found that the participating learners (apart from L5) like natural science.

From the teacher interview I found that there are many possible strategies that a mathematics teacher can use to invite parents to be involved in the learning process of their children. The teacher gave an example of inviting parents to join the lesson, bringing along some teaching materials e.g. stones or sticks.

5.3 THE CONNECTION BETWEEN LITERATURE AND THE STUDY FINDINGS

The literature review in Chapter Two emphasizes that the San is a marginalized group, neglected by the government and this means they live in a very poor conditions (WIMSA annual report, 2007). The literature review also pointed out that, the San live in deep in the farms , mountains and in the forest of Namibian's rural areas and are hardly seen by the government representatives. In chapter Two, it also stated that, San people are totally neglected by government and live in very poor conditions (WIMSA, 2006). However in the San community where I did my research, there is a state school, a clinic and a church. The school has a feeding program subsidized by the government, where learners are provided with soft porridge.

As reflected in Chapter Two, traditionally the San are regarded as a mobile society. In fact, this was not the case to the selected San community where this study was done.

These people have their permanent place where they are staying and living with their families so-called “farmers”.

Furthermore, the selected San community speaks Oshiwambo, as the literature review states that many San people in existence now speak the Bantu language of their dominant neighbours, (Namibia. Ministry of Education, 2006).

In the literature chapter it is noted that many of the San people are dropping out of school due to lack of funds. This is however not the situation I found at the selected school, because all the interviewed parents with their children explained that parents do contribute to the school development fund, even though the interviewed teacher reviewed that there were only a few who did contribute. However, I was not informed about a case of learners dropping out from this school.

The literature stressed the involvement of parents with their children’s school activities. This was specifically emphasized by Ndlazi (1999:1) by saying that “most of the parents do not involve themselves in activities of the schools which their children attend”. By interviewing parents and learners they indicate that parents are involved in school activities. While on the other hand, the interviewed teacher stated that it is hard for some of the San people to be involved in school activities. With some reasons like; parents are illiterate and stay at the cuca shop till late. This is also stated in the literature review chapter by Pieters, (2007) that, “many parents are not English speakers and the majorities are illiterate”.

It is also stated in the literature review chapter that parents should be directly and indirectly involved in the learning process of their children. In my findings using the selected tools, I came to notice that parents attend parents’ meeting, some turn up at school to check their children’s books, and some play mathematical games with their children. All the interviewed learners stated that their parents encourage them to finish their education and that in itself is indirect involvement.

The literature chapter (Cornbleth, 1996), indicates that there exists a myth that mathematics is a difficult subject, and that teachers label learners as being dull in mathematics. From my findings however, none of the interviewed learners claimed that mathematics was a difficult subject. For example, L2 said that he liked mathematics because “it is the easiest subject”.

5.4 SIGNIFICATE OF THE STUDY

The findings of this case study will hopefully contribute towards the improvement of parental involvement in school activities, particularly among the San people. I hope that learners will also benefit from this study once parents engage more in various school activities of their children. It is also hoped that the study will alert other educational stakeholders to enforce and mobilize parental involvement in the education of their children.

5.5 GAPS LEFT IN THE STUDY

The main emphasis of this research was the involvement of San parents in the mathematics learning process of their children. From the data collected I found that illiteracy is one of the contributing factors to non/low involvement of parents in school activities. While only one interviewed parent was unable to read, the gap left in the study is the extent to which illiteracy really has a negative impact on parental involvement.

5.6 LIMITATION OF THIS STUDY

A potential limitation of the research is that the outcomes of the research cannot be generalized because of the small size of the sample and the limited length of the investigation. Participants may also have felt inhibited to tell the entire truth.

5.7 PROBLEMS ENCOUNTERED DURING THE STUDY

I encountered the following problems:

- When I was conducting the interviews I found myself at some point not asking people to clarify or elaborate. Instead I just proceeded to the next question and possibly missed out on deeper insights.
- One of the parents whom I was supposed to interview passed away, therefore I just managed to interview four parents.
- I planned to collect the contribution of parents for two months, but unfortunately the mathematics teacher who was supposed to fill in the forms went on sick leave. Therefore he just managed to collect data for 6 days, (appendix 2).

5.8 RECOMMENDATION FOR FURTHER RESEARCH

This was a half thesis but further research should be carried out due to the fact that only a small community within the San culture investigated. I propose that more research needs to be done on this topic, to compare differences and similarities of San communities (rural and urban schools) in all 13 Namibian political regions. This will give a more comprehensive picture and a better understanding of whether all the San parents do participate in education of their children.

I would like to advise schools to create an environment whereby parents are strongly encouraged to be involved in school development programs. Parents should also encourage and motivate one another to assist their children with assignments and homework.

Therefore teachers should ensure that parents are given enough opportunity to bring their initiatives and creativities as well as their inputs toward the development of the school. In

doing this, it will assist and inspire learners to be actively engaged in their homework. Moreover, the emphasis should be placed on the possible strategies that allow parents to be directly or indirectly involved in school activities.

5.9 PERSONAL REFLECTION

By carrying out this research for the duration of one year, I realised that indeed there are some San parents who are willing to assist their children with homework despite their poor educational background. Some parents are willing, but due to the fact that they are illiterate or staying away from home during the day, makes it difficult for them. I found the transcribed interviews difficult to analyse – this was frustrating, however, the assistance and guidance that I received from my supervisors helped me a lot. I hope that this thesis will inspire others as it was a learning experience to me especially engaging with my participants and their interviews.

To conclude this thesis, as a novice and beginner-researcher, I wish to encourage all interested researchers to conduct their research with the San people. This will bring much needed awareness to a community that continues to be marginalized.

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APPENDIX 1 -Photos



Fig 1a *Oshigadhi*



Fig 1b San homestead



Fig 1c *Ondota*

APPENDIX 2 -Recorded parental contribution and involvement in the learning of mathematics

Learner 1

Date	Brief description of the homework or assignment give to learners that requires parental assistance	Ask learners if he/she got any assistance from the parent. If yes, a learner can explain what assistance was given
30.06.08	Division of decimal fraction by 10	No assistance given
02.07.08	Division of fractions by 100	No assistance given
03.07.08	Paying out of the change	No assistance given
04..07.08	Rounding off money to the nearest N\$	No assistance given for unknown reasons
08.07.08	Rounding off money to the nearest N\$ 10.00	No assistance given as the parent was not available.
09.07.08	Rounding off money to the nearest 10c	No assistance given

Learner 2

Date	Brief description of the homework or assignment give to learners that requires parental assistance	Ask learners if he/she got any assistance from the parent. If yes, a learner can explain what assistance was given
<i>30.06.08</i>	Division of decimal fraction by 10	No assistance given
<i>02.07.08</i>	Division of fractions by 100	No assistance given
<i>03.07.08</i>	Paying out of the change	No assistance given
<i>04..07.08</i>	Rounding off money to the nearest N\$	Assistance was given by helping a learner to estimate.
<i>08.07.08</i>	Rounding off money to the nearest N\$ 10.00	No assistance given. Parent was not available
<i>09.07.08</i>	Rounding off money to the nearest 10c	No assistance given, as the one to give assistance was unavailable.

Learner 3

Date	Brief description of the homework or assignment give to learners that requires parental assistance	Ask learners if he/she got any assistance from the parent. If yes, a learner can explain what assistance was given
30.06.08	Division of decimal fraction by 10	No assistance given
02.07.08	Division of fractions by 100	No assistance given
03.07.08	Paying out of the change	Assistance given by calculating together but unsuccessful as may be the learner did not give clear ideas of what to do.
04..07.08	Rounding off money to the nearest N\$	Assistance was given by the parent by bringing about different coins and help the learners to estimate.
08.07.08	Rounding off money to the nearest N\$ 10.00	A learner was assisted by the parent to estimate different kinds of money by using notes and coins.
09.07.08	Rounding off money to the nearest 10c	Assistance was given by helping the learner to approximate.

Learner 4

Date	Brief description of the homework or assignment give to learners that requires parental assistance	Ask learners if he/she got any assistance from the parent. If yes, a learner can explain what assistance was given
<i>30.06.08</i>	Division of decimal fraction by 10	No assistance given
<i>02.07.08</i>	Division of fractions by 100	No assistance given
<i>03.07.08</i>	Paying out of the change	No assistance given
<i>04..07.08</i>	Rounding off money to the nearest N\$	No assistance given as it was said that no parent was available
<i>08.07.08</i>	Rounding off money to the nearest N\$ 10.00	No assistance given as no parent can do that.
<i>09.07.08</i>	Rounding off money to the nearest 10c	No assistance given

Learner 5

Date	Brief description of the homework or assignment give to learners that requires parental assistance	Ask learners if he/she got any assistance from the parent. If yes, a learner can explain what assistance was given
<i>30.06.08</i>	Division of decimal fraction by 10	No assistance given
<i>02.07.08</i>	Division of fractions by 100	No assistance given
<i>03.07.08</i>	Paying out of the change	No assistance given
<i>04..07.08</i>	Rounding off money to the nearest N\$	No assistance
<i>08.07.08</i>	Rounding off money to the nearest N\$ 10.00	No assistance as it is said
<i>09.07.08</i>	Rounding off money to the nearest 10c	No assistance given as it is said that none can help as the parents don't know how and none else.

APPENDIX 3 -Transcription of interview with San learners, a mathematics teacher and San parents

Appendix 3a –Learner’s Interviews

Learner 1

R1: What do you do at home after school?
L1: Fetch water, mm, and look after goats, mm, correct fire wood and do study.
R2: Ooo, do you play games? If yes, can you give me an example?
L2: I play soccer.
R3: That’s all.
L3: mmm
R4: Did your teachers give you homework at home?
L4: Yes. Like in English, the teacher gives us homework to answer some questions.
R5: What about in mathematics?
L5: In mathematics, mm..m.
R6: You don’t have homework?
L6: In mathematics we only write notes.
R7: What kind of assistance concern about mathematics do you receive from your parent?
L7: They help me.
R8: Mmmh.
L8: They teach me mathematics that I don’t understand.
R9: Soo. Do you have some homework in your book where you get assistance from your parent?
L9: Yes.
R10: Can you show me?
L10: Like (.. paging) like here (pointing)
R11: Do your parent check your homework? If yes, how often? And if no, can you explain why?

L11: They check in my books.
R12: Is it many times?
L12: Yes.
R13: Oooo.
L13: Unless I didn't find them at home, but if I find them they have to check in my book.
R14: Where did they used to go if you did not find them?
L14: At the cuca shop
R15: mmh. are your parents involved in school activities?
L15: Yes, like when there was a meeting at the hospital
R16: mmh.
L16: They were there to get the water treatment.
R17: What else?
L17: Paying school fund
R18: mmh.
L18: If they didn't give it to me at home, they can bring it at school.
R19: Ooh. Do your parents encourage you to finish school?
L19: mmh.
R20: What did they say?
L20: They say I have to study hard other wise my school mates will left me behind.
R21: Ooh.
R21 What do you want to be after finishing your education?
L22: A police officer
R22: A police?
L23: Mmmh.
R23: What subject do you like most?
L24: Natural Science
R24: Why Natural Science?
L25: it has easy words.
R26: What about mathematics?
L26: I like mathematics as well.

R27: Even mathematics?
L27: Yes.
R28: Oooh. Ok. Thanks.

Learner 2

R1: What do you do at home after school?
L1: What? Can you repeat the question?
R2: What do you do at home after school?
L2: Playing onkona and omboloko
R3: What else?
L3: mmh, ondota.
R4: mmh, so after school you only play onkona, omboloko and ondota?
L4: i...i...i also study.
R5: mmm, that's all?
L5: Yes.
R6: Do you play games? If yes, give example?
L6: What?
R7: Do you play games?
L7: Just playing
R8: Playing?
L8: mmm.
R9: What type of activities do you receive from your mathematics teacher that requires assistance from your parent?
L9: What?
R10: What type of activities do you receive from your mathematics teacher that requires assistance from your parent?
L10: No.
R11: You don't get homework from your teacher?
L11: No.
R12: What kind of assistance concern about mathematics do you receive from your parent?
L12: mmmh
R13: They don't help you?

L14: No.
R14: Why, may be your parent are not assist you in mathematics?
L15: They don't check in my books.
R15: What?
L16: They don't check in my books.
R16: They didn't check in your book or you didn't go with your book at home?
L17: I go with them.
R17: Even books for mathematics?
L18: Yes.
R18: Ooo, mmh.
R19: Are your parents involved in school activities?
L19: mmh.
R20: Like?
L20: Like when I broked the window glass of the classroom.
R21: Broke the window glass?
L21: Yes.
R22: Eeeeh.
L22: And when she (the mother) comes to visit the school.
R23: What did she do, when you broke the window glass?
L23: She was told to pay money not to buy another glass.
R24: Then she pays?
L24: Mmmh.
R25: Ooo. Do your parents encourage you to go and finish school?
L25: mmm.
R26: What did they say?
L26: They say, even you did not finish paying the school fund, mmmm, take this money to pay your school.
R27: What do you like to be after your education?
L27: Become a nurse.
R28: What subject do you like most?

L28: Mathematics and Natural Science
R29: Why do you like mathematics?
L29: Because it is the easiest.
R30: The easiest?
L30: mmm.
R31: ooo, ok. Thanks.

Learner 3

R1: What do you use to do at home after school?
L1: I wash, pound, cook, and chase bird from the crops.
R2: So, you don't read?
L2: m' em! (Shock)
R3: mmmh
L3: And study.
R4: Do you play games? If yes, give example?
L4: Ohaye, omboloko, okasholo and ondota.
R5: What type of activities do you receive from your mathematics teacher that requires assistance from your parent?
L5: mmmh
R6: Can you show me in your book examples of the homework given by your teacher and you get assistance from your parent?
L6: (paging) Like here!
R7: Ooo, (pointing), so this was a homework?
L7: Yes.
R8: Did your parent assist you?
L8: Yes.
R9: Who helped you?
L9: My mom, like here (showing in the book), she say this one goes this direction, and the other goes the other direction.
R10: Oooo. What kind of assistance concern about mathematics do you receive from your parent?
(No respond)
R10: You mother don't assist you?
L11: She does.
R11: mmm, did she correct you if you are wrong in your homework?
L12: Yes, if I'm wrong she told me the right answer.

R12: Oooo-ok.
R13: Do your parents check your homework? If yes, how often? If no, why?
L13: Yes.
R14: Is it many times?
L14: Yes, when I come from school and during the weekend.
R15: Ooo. What did she say when she is checking your book?
L15: She can even say I did well or not.
R16: mmmh
R16: Are your parents involved in school activities?
L17: Yes, like, like the meeting which was at the hospital.
R17 What about at school?
(Pause)
L18: If we told to bring the school development fund, she used to pay.
R18: What else you were asked to bring at school?
L19: Like, that time when you where here, we were told to inform our parent to come at school and my mother come.
R19: Oooo.
R20: Do your parents encourage you to go and finish school?
L20: She used to say, I should study and finish school, pass so that I can look for work, like working in the kitchen, teaching or become a police officer.
R21: What subject do you like most?
L21: Mathematics, oshindonga, social studies and craft and technology
R22: Why do you like mathematics?
L22: It is easy.
R23: Easy?
L23: Yes.

Learner 4

R1: What do you use to do at home after school?
L1: I harvest, look after the field crops and make sure birds are not destroying the crops and fetch water.
R2: mmh. What about reading?
L2: I do so.
R3: Do you play games? If yes, give example?
L3: Sport
R4: That's all?
L4: and ohaye.
R5: Oo, did you receive homework in mathematics?
L5: Yes.
R6: Can you show me some examples of homework?
L6: Yes (paging) like here (showing)
R7: So, here you ask assistance at home?
L7: Yes.
R8: Did you get assistance?
L8: Yes
R9: Who assist you?
L9: Its ma' am Namatati.
R10: So it's ma' am Namatati?
L10: Yes
R11: Eee, did your parent assist you in the learning of mathematics?
L11: Still just ma' am Namatati who assist me.
R12: Did you parent check in your book?
L12: Yes.
R13: How often?
L13: What?
R14: How often your parents check in your book? Is it many times?

L14: Yes.
R15: Ooo. What about if parent are invited to the meetings? Do they turn up?
L15: mmm, like when they went to correct water treatment.
R16: What else at school?
L16: Sometimes they used to be invited to come and check in our books, but they never turn up.
R17: What excuse do they give?
L17: We don't know, but we used to tell them.
R18: Did you ask them why they did not turn up for the meeting?
L18: No.
R19: mmm
R19: Do the parents encourage you to finish school?
L20: Yes.
R20: What do they say?
L21: They give me money to finish paying school fund.
R21: What do you want to be after school?
L22: I want to be a teacher.
R22: Ooo. Which subject do you like most?
L23: English, Oshindonga, Social Studies and Mathematics
R23: Why do you like mathematics?
L24: I know it.
R24: So, you know it?
L25: Yes
R25: Oo. Thanks.

Learner 5

R1: What do you use to do at home after school?
L1: Chasing birds from the crops field, looking after goat and I read.
R2: Do you play games? If yes, can you give me example?
L2: Playing soccer, osholo, ohaye, omboloko and okasholo
R3: Did your mathematics teacher give you homework to do?
L3: Yes
R4: Can you show me one of the homework which was given to you?
L4: (paging) Like here (pointing in the book)
R5: Did you get assistance?
L5: No
R6: So, you just did it yourself?
L6: Yes.
R7: Why you did not ask your parent to assist you?
L7: They were at the cuca shop
R8: Why you didn't ask when they back from the cuca shop?
L8: They come very late.
R9: Ooo. Do your parents assist you in the learning of mathematics?
L9: No.
R10: Do your parents check your book?
L10: Yes, they did.
R11: What do they say?
L11: Where I did well they congratulate me and where I did wrong they say I did not do well.
R12: Do they come for parent meeting?
L12: Yes, they use to come?
R13: What else do they do to school?
L13: Like if they are invited, they use to turn up.
R14: Do your parents encourage you to finish school?

L14: Yes.
R15: What do they say?
L15: They say I should finish school, so that I can work.
R16: What do you want to be after completing your education?
L16: What?
R17: What do you want to become after finish school?
L17: Become a teacher.
R18: Which subject do you like most?
L18: Natural Science
R19: Why Natural Science?
L19: The teacher teaches well.
R20: Is she is the best teacher compare to others?
L20: Yes.
R21: Ooo. Thanks.

Appendix 3b –Teacher’s interview

R1: To what extend do San parents help learners to any subject?
T1: (pause) Thank you, madam Shemunyengetse (pause). I, I can give you the evidence for your question that parent can help their children at home. Once I give them a task to do then the learners the next day can brought this completed task and then parent can assist their children in – in many different activities. For example, assist them with school development fund, yaa-aa, but sometimes, only some, only some of them, because I as you can see some of the parent can not afford to pay school development fund for their child. They also sometimes unable to give them something to – to eat. Yaa- aa.
R2: What do you think these parents assist school with?
T2: These, these, these, these people are sometimes are not able to assist the school. Because they are, they don’t have, they don’t have something aaa-aa, to afford the school. Therefore we are just struggle to come up with, with a different activities in order to upgrade our school, ourselves, but some of the, some of them, they want to give assist but, ...
R3: They can not afford?
T3: Jaaa, jaa this is the only problem they have, they can not help the school, and thus why you can see our school is suffering. But sometimes we are suffered.
R4: But they understand the quality of education, why education is important?
T4: Only some, some of them, jaa some few, few, few, they understand. But the majority aaa.. aayee, they don’t understand, jaa the education.
R5: Do parents should/should not help in the learning process of their children?
T5: Ok, aaa, for point of view should parent should or should not help if we they should, they should help, if (pause) when you invite them, especially for the meeting some of them they, they can they can decide to give assistance but (very loud), after that, after the meeting, these people they ignore, they, they ignore. Because there is a lack of understanding jaa- aa lack of understanding. Communication, lack of communication, thus why they, you can see them just working around doing nothing in order to assist their children. So thus why, they need to be forced, they need to be encouraged in order to come up with little, little what they have, jaa..aa not always.

R6: Then, do you give learners homework?
T6: Yes
R7: To get assist from the parent?
T7: Yes.
R8: Do you think these learners they really get assistance from their parent?
T8: Only some, some of them. Those who are from the the..the house where educated learners are or parents they give them little education. So those parents can assist children at home, but some of them their parents ignore to give assistance. May be I can say, when I give them a task to do at home or their home work the next day learners come, poor learners come without doing their homework.
R9: But what are the excuses they give?
T9: Their parents, sometimes they spend the whole day at the cuca shops until late.
R10: Ok. Then, what area in mathematic parents could help?
T10: Jaaa.a
R11: Because mathematics have different areas; counting, what, what, then, this San parents may be in which area they can assist?
T11: They can assist in all areas.
R12: mmh.
R12Those who understand, those who don't understand, the areas of mathematics they are have a problem to. .. to help their child. Thus why, I told you that some of them the parents are not always at home. Jaa, they are always somewhere, some are there hunting for food, some are there, a..aa..a hunting for beers at the cuca shops, some are just don't understand education. Thus why you may find some of the learners become poor.
R12: Because they do not get any assistance?
T13: Jaa.. jaa. Jaa.
R13: Ok. The last question, what possible strategies could you uses to help parents involve in the learning of mathematics? And what can you do or what do you use to do? If you give learners home work and there is no assistance? Do you use to do any thing or you take any step, like what I'm going to know and if you don't do any thing, what possible strategies can you use?

T14: There are many different strategies I can use as a mathematics teacher. So, for example, I can create more, I can create more activities which are enough for the learners at school. Ee..e, or after school we can do our work at school in order my learners to know to become competence and know all the strategies. And all the activities before they go home. Example in counting, jaa the learners can, we can create, we can come up with our local materials in order learners how to count. Thus why, that's I can do with learners so that they can, they can improve.
R14: Ok. My focus is on parent. What possible strategies could you use for parents to involve? If they are not involves, because they are in two sides. Some are educated some are not?
T15: aa.a, jaa, parents can also, I can invite them to come and join us during the period. That's the only way I can use. Call them from home they come and attend the period at school together with their children. Then I also tasked the parents to bring along the activities, the materials, and example small stones, small sticks which well prepared. Then when I start teaching parents also can give us help during my period. Jaa.a that's the only way I can do with the parents. When I send the learners, back home some parent they can't give enough assistance at home, thus why I took this way of calling them and join during the period at school.
R15: It is a very good strategy. Thanks.

Appendix 3c –Parent’s interviews

Parent 1

R1: What is your educational level?
P1: mmm, eee
R2: Up to which grade did you attend school?
P2: Standard 3
R3: Ok. Did you talk with your other parents about school activities?
P3: Yes.
R4: Do you use to talk?
P4: Yes, we do.
R5: Do you assist school if there is a need?
P5: I did so.
R6: Can you give example?
P6: Like when we are invited to the parent meeting.
R7: What about contributing to the school development fund?
P7: I also contribute.
R8: Do you use to know the content you child comes with from school?
P8: She can not tell me.
R9: Why can’t you ask him?
P9: I ask him, but aa – i.
R10: So, there is no time or what ma’ aam?
P10: mmmmm
R11: Did you assist your child in mathematics or even to check in his book?
P11: I check what they learn, and he can tell me what they learn in mathematics.
R12: What about if he has a problem?
P12: I also assist him.
R13: Ok. Did you play with your child mathematic games?
P13: mmmm – aa, I just left him alone.

R14: Are you aware that playing with your child help him in cognitive development?
P14: Yes. But there is no time.
R15: So, there is no time?
P15: Jaa. (she lough)
R16: Ok. What game your children play at home?
P16: He plays soccer and ondota
R17: Like ondota, is it you who teach him?
P17: He learns it from school and then he plays it himself.
R18: mmm. Did he draw some mathematical shape?
P18: He draws babies or writes some numbers.
R19: Ok. Thanks.

Parent 2

R1: Did you attend school?
P1: Yes.
R2: What is your highest grade?
P2: Standard 4
R3: Oooo. Did you discuss with other parents issue concern about your child's education?
P3: We discuss during the school meeting.
R4: Ok. What about supporting the school?
P4: I did, I give my child school shoes and uniforms.
R5: Ok. Did you assist your child in school works when he comes home? To check in his book and find out whether he was right or wrong in his homework?
P5 Yes. Yes, I do.
R6: Eee. Did you know that assisting learners is very important?
P6: mmmh
R7: So that when he goes to school tomorrow he does not have problems?
P7: mmh, Yes, I really do.
R8: It is really needed to assist your child.
R8: Did you play with your child any mathematics game?
P9: He just plays with sticks and does counting. He also uses his figure to count. Sometimes I ask him, what will be the sum if I add this number together.
R9: Ok. What about games, does he play?
P10: He play Soccer
R10: What about ondota and osholo?
P11: He also plays.
R11: Are you aware that playing with your child help him in cognitive development?
P12: mmmm
R12: Did you teach him these games?
P13: He learns them from others.

R13: Mmm, ok. Thanks.

Parent 3

R1: Did you attend school ma'am?
P1: Yes.
R2: What is your educational level?
P2: Standard 4
R3: Standard 4? Ok, mmm.
R3: Did you talk with other parents about school activities?
P4: We meet with other parents at school if we are invited.
R4: What about if you meet at other places?
P5: We also discuss.
R5: Did you support the school?
P6: mmmm
R6: can you please give me example?
P7: Like when we renovated the school fence.
R7: Ok. Did you check in your child's book?
P8: No, I don't, because I don't know how to read. I just saw him paging his book. I just ask him if he has homework.
R8 mmh
P9: If he say yes, then I have to tell him to go and do his homework, then I left him and go with my ways.
R9: That's good to give him time to do home work.
R10: Are you aware that assisting child is needed?
P10: Yes I know.
R11: Because, sometimes the child did not understand the lesson well at school, but if you assist him at home it will help him to understand better.
P11: The problem is I don't know how to read. It doesn't mean any thing whether I check in his book or not.
R12: Ok. Did you play game with your child?
P12: Some children are too young. What can I play with him? Is it osholo or what? He

can just play ondota and do his drawing, may be I can just say, that's not how to draw the baby's head, etc.
R13: mmm, ok. It is really needed to play with your child. You can play ondota together or do competition on who draw a nice picture. The child can feel love and he can say: oh mom you draw a nice picture or not. From there a child can see that my mother is also interest in my education.
R13 Ok. What game your children play at home?
P14: Soccer
R14: Only soccer?
P15: Jaa, just soccer.
R15: Do he learn it at home?
P16: May be he learns it from others at school.
R16: Ok. Thanks

Parent 4

R1: Did you attend school ma' aam?
P1: Yes.
R2: What is your educational level?
P2: Standard 9
R3: Grade 9?
P3: Yes
R4: Did you discuss about your child's school activities with other parents?
P4: Yes.
R5: Did you assist in school acclivities?
P5: Yes, I did and really support.
R6: Can you please give me some example?
P6: We were asked to renovate the school fence and I participated.
R7: mmmmh
P7: I also pay school development fund.
R8: Ok. Do you understand the content of the subject that your child comes home with?
P8: I ask her what she learns at school and ask her where she has a problem so that I can assist where I can.
R9: What about in mathematics, did you also assist her?
P9: Yes, I also assist.
R10: Did you play mathematics game?
P10: Yes. For example we play together with my child ondota.
R11: That's great. Are you aware that playing with your child is really helpful in their cognitive development?
P11: Yes.
R12: Ok. What does your child do at home after school?
P12: She study and draw some picture in her books. I can also ask her if she does not have homework, because she like drawing cars and babies.
R13 What game did the child play at home?

P13: She like playing ondota and make dolls.
R14: Are you the one who teach her ondota?
P14: No, she learns it from others. When she plays ondota then I can also join her.
R15: Ok. Thanks ma' am.

Appendix 4 -Permission letters and responses

Appendix 4a -Permission letter to the regional educational Director

To: The Director of Education

Omusati Region, Ministry of Education

Dear Sir

Re: Request for permission to do research.

I am a registered student at Rhodes University-South Africa and a Head of Mathematics and Science Department (Name of school)

I am currently doing the Masters Degree (in Mathematics Education) with the stated University on a part-time. I am intending to carry out a research in the field of Mathematics Education focusing on the participation of San parents in the learning of mathematics for their children. The research will help me to see whether San parents do involves in the learning process of their children and how can we assist them if they do not involve.

I therefore hereby request your permission to allow me to carry out an action research at (Name of School and the Circuit). I intend to interview 5 learners in grade 5 with their parents and a mathematics teacher at the stated school. The research ethics will be followed and adhered to as the names of the learners, parents, the teacher and the school will not be revealed in the final report.

Thank you for your consideration.

Yours faithfully,

Shemunyenge T. Hamukwaya

Appendix 4b -Permission letter to the circuit Inspector and the school Principal

To: The Inspector (Name of the circuit)

 The Principal (Name of the school)

Re: Request for permission to do research.

I, **Shemunyenge T. Hamukwaya** (Student Number: 601H0013) is a registered student at Rhodes University-South Africa. I am currently doing the Masters Degree of Education (in Mathematics) with the stated University on a part-time basis. I am intending to carry out a research in the field of Science Education focusing on parental involvement of San parent in the learning of Mathematics for their children.

I therefore hereby request your permission to allow me to carry out an case study at (Name of school). I intend to interview 5 learners from grade 5 with their parents and a Mathematics teacher. The research ethics will be followed and adhered to as the names of the learners and the school will not be revealed in the final report.

Thank you for your consideration.

Yours Sincerely,

Shemunyenge T. Hamukwaya

Appendix 4c -Response from the regional education Director, Omusati region

Dear Ms Hamukwaya

SUBJECT: Permission to conduct the educational research

Your letter requesting permission to do research as part of the post-graduate studies for a Masters of Education Degree, through the Rhodes University, Grahamstown, South Africa, has reference.

Kindly be informed that the Ministry of Education recognizes your effort and the possible contribution your research initiative can make towards successful curriculum implementation fro education in a broader sense.

This letter grants you permission to do the required work in terms of consultations, interviews and other related interactions at school, circuit and regional office levels.

Kindly note that the Ministry of Education would also ensure that your research activities do not interfere with normal school programmes.

Best wishes for success in your academic endeavour.

Yours faithfully

.....

Regional Director, Omusati

Appendix 4d -Response from the school Principal

To: Ms ST Hamukwaya

Re: Permission to do research at school

Your request to conduct an action research at (Name of school) has been positively considered. However you are be advised that your research activities do not interfere with normal school programmes.

Best for your study.

Yours in Education

.....

Principal