STRATEGIES OF EARLY INTERVENTIONS ON ACADEMIC PERFORMANCE OF LEARNERS WITH PHYSICAL DISABILITIES IN PRIMARY AND SECONDARY SCHOOLS IN TWO SELECTED DISTRICTS, RWANDA

BY

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E55EA/23691/2013

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE DEGREE OF MASTER OF EDUCATION (DEPARTMENT OF SPECIAL NEEDS EDUCATION) IN THE SCHOOL OF EDUCATION OF KENYATTA UNIVERSITY.

APRIL, 2016.
DECLARATION

I confirm that this research thesis is my original work and has not been presented for a degree in any other university or any other award. This research has been complemented by referenced sources duly acknowledged. Where text, data, pictures have been borrowed from other sources, including the internet, these are specifically accredited and references cited in accordance in line with anti-plagiarism regulations.

Sign……………………………………..             Date…………………………
Jean Twagirimana
E55EA/23691/2013

We confirm that the work reported in this research thesis was carried out by the candidate under our supervision.

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DEDICATION

This thesis is dedicated to all my beloved friends who assisted and gave me a lot of encouragement throughout my writing of this thesis. May God bless you all.
ACKNOWLEDGEMENTS

I hereby acknowledge the Government of Rwanda for giving me a scholarship to come and pursue my studies at Kenyatta University in Kenya.

My regards goes to the Ministry of Education in Rwanda who gave me permit that allowed me to carry out my research in the schools of learners with disabilities in Nyanza and Huye Districts of Rwanda.

I highly convey my warm regards to all my beloved friends and classmates who tirelessly worked very hard with me up to the completion of course work and this thesis.

I cannot forget to convey the deepest acknowledgement to my supervisors Dr. Nelly Were Otube and Dr. Franciscah Irangi Wamocho who tirelessly worked very hard to make sure that I completed this thesis.

I would like to thank my mother and family members for prayers during this long period of study. May God bless them. Finally I cannot forget to thank Kenyatta University for having accommodated me throughout the period of my studies. May the Almighty God bless all.
# TABLE OF CONTENTS

DEDICATION........................................................................................................................................ iii  
DECLARATION...................................................................................................................................... ii  
ACKNOWLEDGEMENTS......................................................................................................................... iv  
TABLE OF CONTENTS .......................................................................................................................... v  
LIST OF FIGURES ................................................................................................................................... viii  
LIST OF TABLES ..................................................................................................................................... ix  
ABBREVIATIONS AND ACRONYMS ....................................................................................................... x  
ABSTRACT ............................................................................................................................................... xi  

## CHAPTER ONE: INTRODUCTION AND BACKGROUND ............................................................. 1  
1.0 Introduction ..................................................................................................................................... 1  
1.1 Background to the Study ................................................................................................................. 1  
1.2 Statement of the Problem ............................................................................................................... 7  
1.2.1 Purpose of the Study ................................................................................................................... 8  
1.2.2 Objectives of the Study ............................................................................................................. 9  
1.2.3 Research Questions ................................................................................................................... 9  
1.3 Significance of the Study .............................................................................................................. 9  
1.4 Delimitations and Limitations of the Study .................................................................................. 10  
1.4.1 Delimitations of the Study ....................................................................................................... 10  
1.4.2 Limitations of the Study .......................................................................................................... 10  
1.5 Assumptions of the Study ............................................................................................................ 11  
1.6 Theoretical and Conceptual Framework ..................................................................................... 11  
1.6.1 Theoretical Framework ........................................................................................................... 11  
1.6.2 Conceptual Framework ........................................................................................................... 13  
1.7 Operational Definition of Terms ............................................................................................... 14  

## CHAPTER TWO: REVIEW OF RELATED LITERATURE ............................................................. 16  
2.0 Introduction ..................................................................................................................................... 16  
2.1 Global Studies on Early Intervention Strategies ......................................................................... 16  
2.2 Teacher Professional Experience in Teaching Learners with Physical Disabilities .................. 22  
2.3 Early Intervention Strategies used at Early Class Levels ......................................................... 26  
2.4 Early Intervention and Play Materials ......................................................................................... 30  
2.5 Summary of Literature Review and Gaps .................................................................................... 34
CHAPTER THREE: RESEARCH METHODOLOGY .......................................................... 36

3.0 Introduction ........................................................................................................ 36

3.1 Research Design ................................................................................................ 36

3.1.1 Variables ....................................................................................................... 37

3.1.1.1 Independent Variables ........................................................................... 37

3.1.1.2 Dependent Variables ............................................................................. 37

3.1.2 Location of the Study .................................................................................... 37

3.2 Target Population .............................................................................................. 38

3.3 Sampling Techniques and Sample Size ............................................................... 38

3.3.1 Sampling Techniques ................................................................................... 38

3.3.2 Sample Size .................................................................................................. 39

3.4 Research Instruments ....................................................................................... 40

3.4.1 Questionnaire ............................................................................................... 40

3.4.2 Interview Guide ............................................................................................ 41

3.4.3 Observation Checklist .................................................................................. 42

3.4.4 Focus Group Discussion .............................................................................. 42

3.5 Pilot Study .......................................................................................................... 42

3.5.1 Validity .......................................................................................................... 43

3.5.2 Reliability ...................................................................................................... 43

3.6 Data Collection Techniques ............................................................................. 44

3.7 Data Analysis ..................................................................................................... 45

3.8 Logistical and Ethical Considerations ................................................................. 45

CHAPTER FOUR: PRESENTATION OF FINDINGS, INTERPRETATION
AND DISCUSSION ........................................................................................................ 46

4.0 Introduction ........................................................................................................ 46

4.1 Response Return Rate ....................................................................................... 46

4.2 Demographic Data of Learners ........................................................................ 46

4.3 Teachers’ Professional Qualification Level in Providing Early Intervention in
Special Need Education ......................................................................................... 52

4.4 Early Intervention Strategies Provided to the Children .................................... 56

4.5 Types of Materials Used by Teachers to Assist Learners .................................. 66

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS
...................................................................................................................... 70

5.0 Introduction ........................................................................................................ 70
5.1 Summary of Research Findings .................................................................70
  5.1.1 Teacher professional education level in providing early intervention in
        Special Need Education ............................................................................71
  5.1.2 Early Intervention Strategies used by the Teachers at Early Childhood
        Education Level ......................................................................................71
  5.1.3 Materials used for providing early intervention in instructions ............72
5.2 Conclusions ..................................................................................................73
5.3 Recommendations ..........................................................................................74
  5.3.1 Recommendations to the Ministry of Education in Rwanda .............74
  5.3.2 Recommendations for Teachers ..........................................................75
  5.3.3 Recommendations for Parents .............................................................75
  5.3.4 Recommendations for Further Research .............................................76
REFERENCES .................................................................................................77
APPENDICES .................................................................................................87
  APPENDIX I: QUESTIONNAIRES FOR THE TEACHERS .........................87
  APPENDIX II: QUESTIONNAIRES FOR LEARNERS / IBIBAZO
        BY’ABANYEYISHURI .............................................................................90
  APPENDIX III: QUESTIONNAIRES FOR PARENTS / IBIBAZO BY’ABABYEYI
        ..............................................................................................................93
  APPENDIX IV: INTERVIEW GUIDE FOR PARENTS ..................................96
  APPENDIX V: FOCUS GROUP DISCUSSION FOR LEARNERS ..................97
  APPENDIX VI: OBSERVATION CHECKLIST .............................................98
  APPENDIX VII: MAP OF RWANDA DISTRICTS .......................................100
  APPENDIX VIII: APPROVAL OF RESEARCH PROPOSAL ....................101
  APPENDIX IX: RECOMMENDATION LETTER ........................................102
  APPENDIX X: RESEARCH AUTHORIZATION ..........................................103
  APPENDIX XI: PERMISSION TO CARRY OUT RESEARCH IN RWANDA
        UNDER THE PROJECT TITLE ..............................................................104
  APPENDIX XII: APPROVAL TO CONDUCT RESEARCH IN RWANDA
        UNDER THE PROJECT TITLE ..............................................................105
  APPENDIX XIII: APPROVAL FOR ACADEMIC RESULTS ......................106
LIST OF FIGURES

Figure 4.1: Gender of Learners ......................................................................................47
Figure 4.2 The Level of Study for Parents ........................................................................49
Figure 4.3 Socio-Economic Status of the Parents .............................................................51
Figure 4.4: Teaching Experience .....................................................................................55
Figure 4.5 Consistency of Teachers Attendance to Learners with Physical Disabilities ......................................................................................................................64
LIST OF TABLES

Table 3.1 Selected classes and sample size .................................................................40
Table 4.1: School Level of Learners..............................................................................48
Table 4.2 Classification of Parents by Ages .................................................................50
Table 4.3 Professional Qualification of Teachers .........................................................52
Table 4.4: Academic level in Special Needs Education, .............................................53
Table 4.5 Importance of Early Intervention to Learners with Physical Disabilities....61
Table: 4.6 Teachers’ Level on Agreement of Strategies and Tools to Affect Academic Performance of Learners.................................................................62
Table 4.7 Methods used by Teachers’ in Assisting Learners in Class.......................65
Table 4.8 Types of Materials Used by Teachers to Assist Learners.............................66
Table 4.9 Academic Proficiency Rating of Learners by their Parents.........................67
Table 4.10 Rate academic results for learners at Gatagara Primary School ..............68
Table 4.11 Rate Academic results for Learners at HVP Gatagara Secondary School 68
# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CBM</td>
<td>Christian Blind Mission.</td>
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<tr>
<td>ECD</td>
<td>Early Child Development</td>
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<tr>
<td>EI</td>
<td>Early Intervention.</td>
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<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>HVP</td>
<td>Home de la Vierge des Pauvres</td>
</tr>
<tr>
<td>IDEA</td>
<td>Individual with Disabilities Education Act.</td>
</tr>
<tr>
<td>IFSP</td>
<td>Individualized Family Service Plan</td>
</tr>
<tr>
<td>IQ</td>
<td>Intellectual Quotient</td>
</tr>
<tr>
<td>KISE</td>
<td>Kenya Institute of Special Education.</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
</tr>
<tr>
<td>PL</td>
<td>Public Law.</td>
</tr>
<tr>
<td>REB</td>
<td>Rwanda Education Board</td>
</tr>
<tr>
<td>SNE</td>
<td>Special Needs Education.</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations.</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational Scientific and Cultural Organization.</td>
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<td>US</td>
<td>United States.</td>
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ABSTRACT

The purpose of this study was to determine the strategies of early intervention on academic performance of learners with physical disabilities in special primary and secondary schools in Nyanza and Huye Districts in Southern Province of Rwanda. The study was guided by social learning theory. Descriptive survey research was used to find out teacher professional education level in providing EI in SNE, to determine EI strategies used by teachers at early childhood level and to identify materials used for providing EI in instructions. The target population of parents, learners and teachers was 1,673. The number of learners with physical disabilities was 1364 in primary and secondary levels. 86 and 223 parents. A sample size of 10 teachers from primary, 10 teachers from secondary, 25 learners from primary, 45 learners from secondary and 6 parents were selected for learners of primary and 6 parents for learners of secondary which gave a total of 102 respondents. In the study purposive and simple sampling techniques were used to select teachers and parents while stratified sampling was used in selecting learners. The sample was drawn from two selected special schools for learners with physical disabilities with their teachers and parents. Four instruments: questionnaires, interview guide, focus group discussion and observation checklists were used to collect data on the strategies of early intervention on academic performance of learners with physical disabilities. The pilot study pre-tested to two schools of selected districts for learners, teachers in ordinal levels and for home mates of learners used as guardians. Descriptive statistics was used to present and analyse the results of the study. Findings showed that professional background was good enough for the teachers to generate informed data but it was noted that educational programs were not delivered as effectively as expected because of the big number of teachers not qualified in the area of SNE. It was also noted that early interventions weren’t provided as well due to the lack of experts in that area. The Ministry of Education should provide funds for organizing seminars and workshops in the area of the SNE to improve the number of teachers’ qualification to be able to teach effectively and the policy would be implemented from the parents in terms of team collaboration to raise the services of infants and toddlers with physical disabilities.
CHAPTER ONE
INTRODUCTION AND BACKGROUND

1.0 Introduction

This chapter presents background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitations and limitations of the study, assumptions of the study, theoretical and conceptual framework as well as operational definition of terms.

1.1 Background to the Study

Children with disabilities no doubt are highly disadvantaged and therefore require intervention measures. In the United States for instance, the history of early intervention services for children who are vulnerable and their families has been one of progressive expansion and refinement. The model projects operating in select communities or university settings and the beginnings of more widespread programs in the 1960s and 1970s have been transformed into a vibrant and visible national program providing early intervention services and supports to which all eligible young children with established disabilities have access (Guralnick, 2000a, in press 2000-b). Preventive intervention programs for children at risk for developmental disabilities have exhibited considerable growth as well, although these programs lack the many legislative mandates and the coherence of programs for children with established disabilities (Gilliam & Zigler, 2001).

Early childhood intervention and education is an integral part of basic education and represents the first and essential step in achieving the goals of Education-for-All. World conferences testify to a growing appreciation of the crucial importance of the child’s earliest years, and of the need to support
families and communities in their role as the child’s most influential educator. The learning capacity and value orientations of children are largely determined by the time the child reaches the age of formal schooling. For this reason, any sustained effort in Education for All must set targets and programmes for early childhood and attempt to raise the life-skills level of families (UNESCO, 1997).

Current studies show that infants and toddlers with physical disabilities benefit from early intervention in different ways such as mobility and independent. Physical disability includes upper or lower limb loss or disability, manual dexterity and disability in co-ordination with different organs of the body. Understanding of child development enables therapists to know when a child would benefit from early intervention programs as they would be able to recognize deviations from typical patterns of development (Schreiber, 2004). Correct positioning of the neonate is very important in the control of posture of those who are at risk of developing fixed deformities (Monterosso, Kristjanson & Evans, 2003). Proper positioning is important as numerous benefits have been found from the review which include a greater awareness of external stimuli, enhanced development, a calming effect, and quicker acquisition of developmental skills such as head and ocular control, upper and lower extremity function and decreased extensor patterns of the neonate with physical disabilities (Schoger, 2005).

Sitting was highlighted to promote stabilization to the pelvis and trunk allowing the hands and upper extremities to be free, facilitating manipulation of objects, exploration, increased learning opportunities and interaction with the environment for the infant. Achieving sitting and lying provides a foundation from which mastery of a skilled ability such as reaching for a toy and other motor skills is based upon (Stephens & Tauber, 2001). Numerous factors working together created the
conditions for these transformations as well as for the continuing support for further advances in contemporary systems of early intervention programs. Historical accounts of these factors, including philosophical shifts, knowledge gained from the developmental science of normative development and the developmental science of risk and disability, the results of intervention science, information derived from clinical practice, increased support for early childhood development programs for all children, and major legislative events can be found elsewhere (Gilliam & Zigler 2001). Taken together, what has emerged from all of these efforts is a strong commitment to make early intervention, in all of its forms and work.

This systems-level thinking was central to the Education of the Handicapped Act Amendments of 1986 (PL 99-457) and related early intervention legislative changes articulating a national agenda. In particular, focusing on the birth-to-3 age group, the purpose of this legislation was "to develop and implement a state wide, comprehensive, coordinated, multidisciplinary, interagency system that provides early intervention services for infants and toddlers with disabilities and their families" (Individuals with Disabilities Education Act [IDEA] Amendments of 1997, PL 105-17, Section 631). However, as pointed out by the UN Report, (2001) the Jomtien Declaration on Education for All in 2001 states that learning begins at birth and confirms that early childhood care and education is an essential component of basic education. Therefore, Dakar Framework for Action 2003 reaffirms the importance of early intervention and includes development of early childhood care and education as one of its six goals.

This trend is in part motivated by brain research findings which reveal that the foundations of human development are laid during the child's early years (UNESCO, 2002).
In UK, the need for intensive, very early intervention for infants with physical disabilities is crucial (Carpenter & Egerton, 2005), but again, they actually have the intervention strategies that truly maximize the learning of these vulnerable infants and minimize the impact of their traumatic birth and subsequent fragile health status. Champion (2005) details the brain development of very-low-birth-weight, pre-term infants and the neurological compromise they face. Many have complex health needs requiring invasive procedures such as supported nutrition, assisted ventilation and rescue medication for complex epilepsy (Brown, 2009).

For the provision of appropriate early education support to families who have children with disabilities, India serves an example for other developing countries in using various approaches including home-based programs (0-3 years), self-help groups (3-6 years) and the Anganwadi centres (self-help groups) (3-6 years) (UNICEF, 2003). Home-based programs are available for children with special needs up to three years of age. The community-based rehabilitation worker visits homes to provide early stimulation programs and training to parents or to the family members responsible for taking care of the child, perhaps sibling or grandparents (UNICEF, 2002). This enables them to look after their children more effectively. The self-help group is a multi-purpose disability centre, which uses any place that is available in the villages, including temples, community halls or mainstream schools. This program helps children from three to six years old to prepare for primary education. An Anganwadi centre is a government-sponsored preschool, run through the education or social welfare departments. The centre supports children with early care and education with an objective to provide supplementary nutrition and education.

In Netherland, on 4 February 2002, the Eindhoven city council approved the plan to create centres in the city within ten to fifteen years. By 2012, there were 45 centres of
which 20 were fully integrated under the same roof. The aim was to have 57 centres by 2015. Based on the principle of early identification of children at risk, the municipality of Eindhoven opted for a family support policy in which multifunctional services are directly linked to primary schools inside the centres. The idea was that schools, day care centres and kindergartens are the best organisations for identifying children at risk and their parents as they see children every day and for several years in a row. Secondly, at these centres organisations meet parents on a formal and informal basis, they can easily communicate with them about the child’s development or about the onset of problems. Research conducted in Eindhoven showed that neither the youth care teams at school nor the neighbourhood youth care networks were capable of such early identification of problems. Centres are also based on the notion of continuous and integrated learning and development track of children within one building. These centres also create an infrastructure that meets the needs of parents and children regarding preschool day-care, education, play, after school care, sports, educational and cultural activities (Kernan, 2012).

From 2006 to date, approximately 3,000 out of the total 9,000 child care centres in the German federal state of North Rhine-Westphalia are being developed into certified family centres. The concept of the state programme ‘Familienzentrum’ acknowledges the significance of early support and intervention for children and families as well as the growing number of families being challenged in their role as parents and the public debate around high-profile cases of child neglect. In spite of limited resources, the introduction of family centres has, after a relatively short time, already led to a high acceptance rate, a considerable increase in service provision and to positive effects for children and families. Within the framework of the state programme, family centres have become an important trademark and make a substantial
contribution towards achieving the political goal of turning North Rhine-Westphalia into Germany’s most child- and family-friendly state (Stöbe-Blossey, 2008).

According to National Treasury Department, Republic of South Africa (2007), South Africa is classified as an upper middle income country with pockets of developed contexts in an overall developing context (World Bank, 2007). Early intervention for children with special needs education includes those with physical disabilities in South Africa, have mainly focused on the screening and diagnosis of infant abilities. Early intervention services have mainly been centre- or school-based with several isolated programs spread around the country. It is only recently that the first home-based early intervention programme has been established. Efforts should be made to develop programs that involve families and are set up in homes. For example in South Africa a similar program is in place although it is in its infancy stage (Justice, 2007).

In Kenya, Christian Blind Mission (CBM)’s work in Kenya aims to improve the quality of life of people with disabilities through specialised service provision and by addressing the various barriers towards an inclusive society. Circle Academy is an early intervention centre based in Nairobi, which supports children with special educational needs from two and a half years right through to ten years of age. Although they are well resourced for children with Down syndrome, they are also supporting children with cerebral palsy and microcephaly (Panesar, 2003).

Early intervention services in most developing countries are designed to meet the developmental needs of children from birth to 5 years of age who have a developmental delay or challenges in physical, cognitive, communication, social, emotional, or adaptive development or have been diagnosed with a condition that has a high probability of resulting in developmental delay. The health and education
policies, and the infrastructure of countries south of the Sahara have not provided services or educational opportunities for children with disabilities and their families (World Bank, 2007; UNICEF, 2003). Generally these countries lack institutional supports enabling parents to raise children with disabilities in their natural home environment.

In Rwanda, the Ministry of Health has played a selective role in attempting to improve the livelihood of those physically impaired in the distribution of Prosthesis and are also engaged in the on-going process of attempting to include such specialized aiding equipment, wheelchairs and crutches into the National Health Insurance Scheme (Rwanda Ministry of Education Early Childhood Development Policy, 2012).

However, programs of early intervention strategies for learners with physical disabilities are not yet focused, because learners with physical disabilities are poorly performing at schools as indicated by the national results of 2014 academic year, where in Gatagara primary school, 38 candidates sat for national examination and only 14 (36.8%) candidates got letters for high schools (Republic of Rwanda, Education Board, 2015). On the other hand, G. S Gatagara secondary school registered a total of 53 candidates, however, only 31(58.4%) got passes (See appendix XIII). It against this background that the research sought to investigate the intervention strategies used to learners with physical disabilities.

1.2 Statement of the Problem

Generally, the main objective of early intervention is to positively enhance the holistic development of a child’s emotional, social, physical and intellectual welfare through providing critical support especially to the ones with physical development. However, research shows that there is a significant shortage of well-trained professionals with
expertise in serving school children with physical disability that negatively impact early learning, social interactions and the overall wellbeing. This was followed after the Rwanda genocide which immersed in a brutal wave of organized violence that left an estimated persons physically disabled and centres for rehabilitation and training centres demolished in April 1994. As a matter of fact, Rwanda now suffers a huge deficit in terms of well-trained men and women to support effective rehabilitation and specialised management of those with disabilities. As a result of this misfortune, numerous children also experienced substantiated abuse and neglect and a big proportion of these children received no post-investigation services and training. Children with disability were the most affected since they have high rates of physical, cognitive, social-emotional, relational and psychological problems. This situation has contributed to the poor performance of learners which has also created a serious gap to participation of learning for learners with physical disabilities and their peers without disabilities. This study investigated the strategies of early intervention on academic performance of learners with physical disabilities in special primary and secondary schools in Nyanza and Huye Districts in Southern Province of Rwanda.

1.2.1 Purpose of the Study

The purpose of this study was to determine the strategies of early intervention on academic performance of learners with physical disabilities in special primary and secondary schools in Nyanza and Huye Districts in Southern Province of Rwanda.
1.2.2 Objectives of the Study

The study was guided by the following objectives:

i) To find out teacher professional education level in providing early intervention in Special Need Education.

ii) To determine the early intervention strategies used by the teachers at early childhood education level.

iii) To identify materials used for providing early intervention in instructions.

1.2.3 Research Questions

The study sought to answer the following questions;

i) What professional education level do teachers have for early intervention process?

ii) Which intervention strategies are used by teachers at early childhood education level?

iii) What was the early intervention materials used in intervention?

1.3 Significance of the Study

The findings of this study may provide comprehensive information to the Ministry of Education and other stakeholders on the needs to avail relevant support services to learners with physical disabilities. The implementation of Free Universal Education for all since 2003 has led to increased enrolment of learners in school who have varying learning needs among them which need provision support services to learners with physical disabilities. Furthermore, it is hoped that the findings may be utilized by Rwanda Education Board (REB) to modify regular curriculum to incorporate the
support services to make it appropriate and meaningful to learners with physical disabilities.

The findings of this study may be used by Ministry of Education in Rwanda to set up the program of special teachers and specialists in collaboration of how to teach learners with physical disabilities from their early childhood. Moreover, it is hoped that, the study may also help Rwanda Education Board (REB) to modify assessing and grading procedures of learners with physical disabilities by taking into considerations of their special needs in terms of exam duration and needs for assistance during exams. Finally, the findings of this study may be useful in providing a base for future research in the field of learners with physical disabilities in Rwanda.

1.4 Delimitations and Limitations of the Study

1.4.1 Delimitations of the Study

The study was confined only to two selected districts in southern province of Rwanda. It was gave focus only to the learners with physical disabilities, parents and teachers of these learners. The study targeted early intervention measures provided to learners with physical disabilities because current studies have shown that these are mostly pre-requisite and they affect academic performance of learners with physical disabilities.

1.4.2 Limitations of the Study

The study was limited to a small sample of two selected districts of Rwanda; Nyanza and Huye. This means that the findings cannot be generalized to all learners with physical disabilities in the entire country. Also it was not possible to cover all parents of the learners with disability because tracing them required considerable time and financial as well as logistic constraints.
The findings were only generalized to learners with physical disabilities in schools located in two selected districts. They were not generalized to learners without disabilities and those with physical disabilities in schools out of those districts.

1.5 Assumptions of the Study

The study made the following assumptions:

i) All respondents were cooperative, truthful and were objectively able to give reliable information.

ii) The sample size and instruments to use in the research generated sufficient and authentic data which allowed the researcher to attempt answering the stated research objectives which the study sought to investigate.

iii) Every respondent provided the information required without fear or favour.

1.6 Theoretical and Conceptual Framework

1.6.1 Theoretical Framework

The study was guided by the social learning theory which was initially outlined by Bandura and Walters in 1963 and further detailed in 1977. It posits that learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement.

Social learning theory is a normative development vision that seeks to enhance the strengths and self-independence of individual. The theory is a philosophical approach to human development which transcends traditional growth indicators as long as proper intervention strategies design can be provided to learners with physical
disabilities. Bandura (1997) came up with four constructs in this theory which related to early intervention strategies for effective modelling:

**Attention**- various factors increase or decrease the amount of attention paid. They include distinctiveness, affective valence, prevalence, complexity, functional value. One’s characteristics (e.g. sensory capacities, arousal level, and perceptual set, past reinforcement) affect attention.

**Retention**- remembering what you paid attention to. It includes symbolic coding, mental images, cognitive organization, symbolic rehearsal, motor rehearsal

**Reproduction**- reproducing the image. Encompasses including physical capabilities, and self-observation of reproduction.

**Motivation**- having a good reason to imitate. Includes motives such as past (i.e. traditional behaviourism), promised (imagined incentives) and vicarious (seeing and recalling the reinforced model).

Therefore, social learning theory was used to explain the significance of different procedures used to offer early intervention strategies which were vital to learners with physical disabilities because they enhanced physiological needs, self-independence, mastery of skills and psychological needs.
1.6.2 Conceptual Framework
Figure 1.1 Conceptual frameworks on early interventions and their role on learners with physical disabilities for academic performance.

Independent variables

<table>
<thead>
<tr>
<th>Materials used for early intervention</th>
</tr>
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<tbody>
<tr>
<td>- Toys, books, pencils, block play, stacking plastic.</td>
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<table>
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<tr>
<th>Early intervention instruction strategies</th>
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<tbody>
<tr>
<td>- Arrangement of the classroom environment</td>
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<tr>
<td>- Scheduling, Implementing rules</td>
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<tr>
<td>- Rituals and routines</td>
</tr>
<tr>
<td>- Referral, diagnostic assessment, screening,</td>
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<tr>
<td>- Classification instructional and planning</td>
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<table>
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<tr>
<th>Teacher professional qualification experience</th>
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<tr>
<td>- Identifying accommodation</td>
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<tr>
<td>- Use of assistive technologies</td>
</tr>
<tr>
<td>- Physical task management</td>
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<tr>
<td>- Competence in use of alternative and augmentative communication</td>
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<tr>
<td>- Adapting and modifying curricula and use of specialized strategies.</td>
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<tr>
<th>Dependent variables</th>
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<tr>
<td>Skills for Academic performance</td>
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<tr>
<td>- writing skills</td>
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<tr>
<td>- Reading and calculating skills</td>
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<tr>
<td>- Cognitive</td>
</tr>
<tr>
<td>- Intrinsic motivation</td>
</tr>
<tr>
<td>- Emotional and social skills</td>
</tr>
<tr>
<td>- Motor abilities</td>
</tr>
</tbody>
</table>

Source: The Researcher (2014)

As shown in the diagram, the child benefit by receiving the early intervention strategies from different professional expert child get appropriate and becomes holistic in his or her development. Lack of early intervention makes the child to be dependent.
1.7 Operational Definition of Terms

Purposively, the following definitions are done to the terms found out as key to the study.

**Academic performance**: is the outcome of education, the extent to which a student, teacher or institution has achieved their educational goals (Ward, Howard, & Mildrres, 1996).

**Early Intervention**: is a support and educational system for very young children (aged birth to six years) who have been victims of, or who are at high risk for child abuse and/or neglect (*Early Childhood Intervention Association of Australia, 2006.*)

**Physical disabilities**: Physical disability pertains to total or partial loss of a person’s bodily functions (e.g. walking, gross motor skills, bladder control etc.) and total or partial loss of a part of the body e.g. a person with an amputation (*http://www.pdcnsw.org.au/index.php%3Foption%3Dcom_content%26id%3D49:what-is-physical-disabilities*).

**Referral** is assessment about the need to seek additional assistance from other school personnel. But teachers are generally the ones who make referrals (Batsche, *et al.*, 2006). *Response to Intervention: Policy considerations and implementation.* Alexandria, VA: National Association of State Directors of Special Education, Inc.

**Screening**, it is a first step in identifying” red flags” and whether additional assessment is needed (Batsche, *et al.*, 2006).

**A diagnostic assessment** is an in- depth assessment related determinant what students already know and can be done and identify needed instruction (Batsche, *et al.*, 2006).
**Classification** is determining a student’s eligibility for services students are assessed for purposes of judging the need for services and classifying the category of disability. (Batsche, et al., 2006).

**Instructional planning.** Assessment data are often used to classify and assist in planning an educational programme for individual students (Batsche, et al., 2006).

**Progress monitoring;** is measured by comparing expected and actual notes of learning. Instructional strategies are then adjusted to meet the individual students learning needs (Batsche, et al., 2006).
CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.0 Introduction
This chapter of reviewed literature related to research objectives which forms the themes for each of the following sections; global studies on early intervention, teacher professional experience in teaching learners with physical disabilities, early intervention strategies and play materials used for providing early intervention.

2.1 Global Studies on Early Intervention Strategies
Early childhood care and education programmes for children aged zero up to six years ought to be developed and reoriented to promote physical, intellectual and social development as well as school readiness. These programmes have a major economic value for the individual, the family and the society in preventing the aggravation of disabling conditions (UNESCO, 1994). A report by the UNICEF (2009) suggests that performance in the different domains of Early Child Development [ECD] described as the development of physical, socio-emotional and language-cognitive capacities in the early years can be modified in ways which improve health, well-being, and competence in the long-term. According to Mcakwayne & Hanson (2004), an Individualized Family Service Plan (IFSP) is a requirement devised for all recipients of early intervention service. The components of IFSP must include a statement of the child’s present level of physical, cognitive, communication and social or emotional and adaptive development.

In US, Examples of early years programmes delivered have been well documented: “The Perry Preschool Project” delivered during 1962–1967 and the “High/Scope Preschool Curriculum Study” (1967–1970) which showed positive outcomes for test
scores, high school completion, lower arrests and criminality, teenage pregnancies and higher home ownerships. The “Carolina Abecedarian Project” (1972–1985) and the “Syracuse Family Development Research Program” (1969–1975) had an impact on improving development and IQ scores (Ulijaszek, 2011). A study conducted by Goode et al., (2001) in the USA also demonstrated that more children, especially those with physical disabilities, are in need of early intervention services that are currently being provided. Powell and Diamond (2008) assert that early childhood education and interventions significantly promotes children’s acquisition of knowledge and skills which are linked to later social competence and academic success.

According to California Department of Developmental Services, infants and toddlers from birth to age 36 months may be eligible for early intervention services through Early Start if, through documented evaluation and assessment, they meet one of the criteria listed below:

- Have a developmental delay of at least 33% in one or more areas of either cognitive, communication, social or emotional, adaptive or physical and motor development including vision and hearing or

- Have an established risk condition of known etiology, with a high probability of resulting in delayed development or

- Be considered at high risk of having a substantial developmental disability due to a combination of biomedical risk factors of which are diagnosed by qualified personnel
Based on the child's assessed developmental needs and the families concerns and priorities as determined by each child's Individualized Family Service Plan (IFSP) team, early intervention services may include: assistive technology, audiology, family training, counselling, home visits, health services, medical services for diagnostic/evaluation purposes only, nursing services, nutrition services, occupational therapy, physical therapy psychological services, service coordination (case management), social work services, special instruction, speech and language services, transportation and related costs as well as vision services (California Department of Developmental Services).

In Germany, no annualized early intervention program for children under the age of 5 years exists. Only a limited number of therapy units per week are supported by public services, intensive early intervention programs are hardly affordable for parents. They therefore set out to develop a program which includes parent information and education, individual therapy with the child, training educational staff and eventually including the children into small therapy groups (Duketis, Wilker, Valerian, Feineis-Matthews & Freitag, 2011).

In Indian the focus is on prevention and early intervention and this has often been used as public health strategy with regard to physical health. More recently, it has been used to improve the social health of a community by offering early support especially at times of high stress such as the birth of a child. Broadly, the term ‘early intervention’ is used to mean activities, programs and initiatives designed to alter the behaviour or development of individuals who show signs of an identified problem or who exhibit risk factors or vulnerabilities for an identified problem, by providing the resources and skills necessary to combat the identified risks (Queensland Department of the Premier and Cabinet, 2006). Early intervention includes intervening early in
life, early in the developmental pathway, and early in the life of the problem. In this context, early intervention refers to services and programs to support children and their families that are designed to prevent entry or escalation into statutory child protection.

Australian strategies on early interventions are broadly grouped into three categories; parenting programs, child-focussed programs and multi-component programs. Parenting programs are short-term interventions which primarily target the parent or family and provide parenting education or skills training. Child-focussed programs target the child or young person directly and typically involve instructional or skills-based approaches delivered in the school settings. Multi-component programs involve more than one intervention and may target the entire school, the home and/or the community in addition to the child, (Anderson & Doyle, 2005).

As for Canada, professionalism is required in Special Needs Education; working with children should make families aware of the range of both universal and targeted programs that are available to them. Universal child development programs are open to all families in Ontario and they support developmental stimulation for all children. Targeted programs are designed for families with children who are at risk or have specific specialized needs. The services provided include: paediatric, children’s treatment centres and there is a wide range of materials that can support the play activities of children with special needs which include therapy balls, play materials with textured handles, beeping or ringing balls, large toy pieces or handles for an easier grasp, Adaptive bicycles, swings, or rockers for outdoor play (Greenwood, Walker & Buzhardt, 2010).
In Italy, early intervention program targets ‘mother-child’ family units, found in Rome, at high risk of social or psychological distress during the first year of the child’s life. It aims to identify families ‘at risk’ as early as possible, at the moment of the child’s birth. It offers programmed intervention in the home to promote secure attachment in the mother-child relationship and to include the family unit in a network of services and resources available in the area. Initiated in 1999, it was ‘trialled’ in six of the nineteen sub-municipalities of Rome and now extends to the whole city. The necessity for an intervention of support in the home during the first year of the child’s life is also based on the results of the most recent studies in neuroscience, which have drawn attention to the importance of taking action early in life for effective prevention, as maladaptive caregiving produces serious negative effects on the child’s development. These effects tend to persist unless substantial changes occur in the environment in which the child lives. At the same time, adaptability in the first year of life is such that even a small change can have significant long-term effects (Mundo, 2009).

Closer home in Ghana, early childhood intervention is an essential contributor and catalyst for the development of a culture of positive attitudes towards children with disabilities in a country. A better conceptualization of the term early intervention is relevant to providing effective early childhood education programmes for children with disabilities in Ghana. Early identification and early intervention are two most promising areas in contemporary special and inclusive early childhood education (Ackah & Appiah, 2011).

Kenya Institute of Special Education (KISE) in Kenya offers both certificate and diploma courses in special needs education in three modes namely: Full-time, part-time (Evening and holiday based), Open, Distance and Electronic Learning. The
programmes are tailored to give a holistic education that prepares learners for life-long learning and success in their profession and to enhance professional experience of teachers teaching learners with Special Needs Education (Wafula, et al., 2012).

In Rwanda, the goal of the Early Childhood Development Policy (2011) is to ensure all Rwandan children achieve their potential, are healthy, well-nourished and safe. Their parents and communities become nurturing caregivers through receiving integrated early childhood development services. However, Special Needs Education has not been given much attention and there is a lack of specialists, equipment and trained teachers for special needs education (Rwanda Journal of Education, 2013). Besides, the Ministry of Health has played selective role in attempting to improve the livelihood of those physically impaired in the distribution of Prosthesis and are also engaged in the on-going process of attempting to include such specialized aiding equipment like wheelchairs and crutches into the National Health Insurance Scheme (Rwandan Position Submitted by Human Rights First Rwanda Association).

Rwanda journal of education 2013, it is deduced from the analysis therefore, that the 34.3 % include a significant proportion of learners who do not access school or who drop-out because they encounter difficulties at classroom, school and community levels or because they required appropriately trained educators, learning resources, and support provisions and programs that are inadequate within the Rwandan education system, this is still contributing to the lower performance of learners with physical disabilities.

In a comparative qualitative study carried out by Muga (2003), two screening methods, multiphase sampling and multistage data collection techniques were uses. The findings showed that quality and effectiveness of early intervention strategies
were the major determinants of academic performance of children with disabilities. However, the gap between the needs of learners and the provision level of early interventions were not comprehensively evaluated. This study determined the role of early intervention strategies for children with physical disabilities in two selected districts in Rwanda.

2.2 Teacher Professional Experience in Teaching Learners with Physical Disabilities

The passage of the 1997 Amendments to the Individuals with Disabilities Education Act (IDEA), as well as the increased numbers of students with disabilities being educated part or full-time in general education classes (U.S Department of Education, 2002), create significant challenges for teacher preparation programs for both special and general education teachers. Therefore, 1997 Amendments to IDEA require that special educators are knowledgeable and skilled in the general education core curriculum standards and the use of accountability assessment systems in order to educate students with disabilities in general education settings. Although, Best, Heller and Bigge (2010) identify the following specific competencies that teachers who teach student with physical, health or multiple disabilities require to be effective in their instructional duties:

- Instructional skills
- Physical management of students and the educational environment
- Health maintenance
- Use of assistive technology and alignment active communication
- Curricular adaptation
Teachers who lacked concentrations or credentials to teach in the physical disabilities area felt inadequate to teach or provide direct services to this group of learners. The uncertainty regarding training was shared by special education directors and university personnel. The needs of learners with physical, health or multiple disabilities are many. However, The evolution towards inclusive educational environments, increased school attendance of children with severe and complex health needs, and the use of prevalence of students with physical disabilities supports teachers to specify competencies for meeting the needs of students with physical disabilities, (Heller & Swineheart-Jones, 2003; Hardman, Drew, & Egan, 2005).

Teachers teaching students with physical disabilities need skills in identifying accommodations, assistive technologies, and other supports necessary for students with disabilities to access. Participate, learn and progress in the curriculum. It is essential for students to have intensive and specialized instruction to learn how access, operate and use those accommodations and other tools both functionally and efficiently. Teachers need specific disability training skills to be able to respond to questions about curriculum adaptation, assistive technology, post-secondary supports and services and development of skills for self-determination in the learners. Then, teachers need competency in imparting knowledge on physical task management to learners with physical disabilities. Some individual know what to do but lacks skills of how to perform the tasks. They may be able to acquire physical skills through focused coordination or strength training exercise, or to be taught to compensate through the use of task accommodation (Best et al., 2010).

Furthermore, for teachers to "be effective in instructional procedures they require competence in the use of assistive technology and augmentative communication. 
Assistive technology represents an important avenue of physical task performance. They (assistive technologies) are used to:

- Augment a sense of movement
- Circumvent a sense of movement
- Provide alternatives or adaptation for means of communication and information expressed and received and
- Provide means of performance in learning demonstrations and in a variety of education life activities.

The term assistive technology device means any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized that is used to increase, maintain or improve functional capabilities of a child with a disability.

Teachers who work with students with physical disabilities must be able to adapt, modify curricula and use specialized strategies, apply knowledge of disability conditions to educational outcomes work collaboratively with a range of personnel, and provide resources for family and service providers (Best et al, 2010).

However, in Rwanda the challenges and the diversity of learners with SNE and related barriers, an increasing number of learners with SNE continue to access all levels of schooling. This trend continues to generate an equally rising demand for capacity building in order to realize the required minimum number of educators and related experts with specialized skills. There has not been any specific policy to address training needs to achieve the minimum teacher – pupil ratio in the domain of SNE yet.
Teaching learners with physical disabilities demand that teacher must be prepared to fulfil several educational service roles. Not only provide direct instruction, they frequently collaborate with related services personnel in the implementation of goals and objectives that are derived from their assessment. Specialist teachers are viewed as link for specialized instruction, resources and information with general education teachers. In addition to providing direct instruction to student, teacher must be prepared to provide other direct and indirect services. Specialist teachers need to have skills in adapting assessments as well as provide information about making accommodations and/or modifications regarding the students learning environment. Moreover, therapists cannot take the place of professional educators, even though they assist in equipment modification and training that increases functional skills in educational settings. Conversely, educators cannot provide direct therapy services, although they frequently follow through on therapeutic management regimes established by occupational therapists and physical therapist.

According to Pagliano (1990) early intervention team generally consists of teachers with early childhood education training, special education specialists, speech and language pathologists, physical therapists and occupational therapists. These skills enable the expertise to discuss and work on goals even when they are outside their discipline. Research studies further indicate that team work among trained teachers lead to a more effective and efficient services than those provided individually (Enderby, 2002).

Studies have shown that a strong relationship between trained teacher and learners with disabilities has bridged the home-school gap and in turn improved the child’s academic work (Cowan, 2005; Gakii, 2003; Mcwayney & Hanson, 2004). The studies also indicate that teacher-parent relationship influences teacher-child interaction;
children whose parents have good relationship with the teachers are treated well and perform better in their academic work too. Nevertheless, these studies failed to formulate policies that would promote more quality interactions between parents and teachers over their children’s education in order to realize the Education for All goals (EFA) and Millennium Development Educational Goals (MDGs) on the basis of teacher professional qualification. This study therefore established the role of teacher professional education level in providing early intervention in Special Need Education.

2.3 Early Intervention Strategies used at Early Class Levels

Centre for parental and research 2007, shows that interventions embedded into the child’s favourite play routines increase motivation and engagement of child and teachers while promoting skill development. Play-based learning is very effective for young children with and without special needs in that it is developmentally appropriate. Whether they are play or caretaking routines, intervention strategies should be related to realistic activities in which toddlers without disabilities would engage (such as playing peek-a-boo during diapering).

Instructional systems design is based on an open systems theory. An open system receives inputs from the environment, transforms them through operations within the system, submits outputs to the environment, and receives feedback indicating how well these functions are carried out. The use of instructional systems design helps to draw conclusions about how the training works. The main goal to design a product is to adapt the techniques of learning to practical realities for working out suitable and most appropriate methods. Adapting these techniques to practical realities is the basis for the instructional design. The social context that helps to facilitate the child's development is defined largely by the children's interactions with their primary
caregivers. Developmental systems are so intertwined, that factors influencing any aspect of development, whether internal to the child or part of the child's physical or social environment, and have broad implications. It is through the caregiver that the young child gains access to the environments. It is against this background, that an early intervention model was devised by applying the instructional systems design process (Freund, 1990).

Response to Intervention presents as well—integrated system of instruction and intervention designed for implementation across general and special education based on students’ academic performance and behaviours data. Response to intervention reflects the philosophy of the president’s commission on excellence the U.S department of education in special education (2000) states that “children placed in special education are general education first”. However, Batsche et al. (2006) define response to intervention as the practice of providing high quality instruction and interventions matched to students need, monitoring progress frequently to make decisions about change in instruction or goals and applying child response data to important educational decision.

Response to intervention was developed on the belief that all children can learn and educators are responsible for identifying and fostering conditions that promote learning for all children. It is best to intervene early when academic and behaviour difficulties are relatively small and employ a multi-tier model to effectively differentiate and intensify instruction to improve educational outcomes for all students. The system should identify the problem and why it is happening, then identify intervention that will help rectify the problems, and finally monitor program to determine if the interventions worked. In response to intervention assessment is used as the complete process of gathering information (data) about the students and
putting them into an interpretable form, by different types of decisions as follow; referral, screening, diagnosis, classification, instructions planning and progress monitoring, (Batsche et al., 2006).

Use evidence-based instruction; is the use of instruction practices and interventions that have foundations in scientifically based research. Curriculum and instruction should have demonstrated effectiveness for the students’ situation and the school setting. Although, monitor progress much of the assessment in response to intervention, is progress monitoring and should be a form of dynamic assessment that measures change in strengths levels or rate of learning. Use assessment measures that are sensitive to growth and can be applied frequently to monitor student progress, (Johnson, Mellard, Fuchs & McKnight, 2006).

Usage of data central to respond to intervention practices. It uses students’ data to make instructional decisions and take classification and programme placement decision (e.g. moving students from the first level to the second). This requires an ongoing data collection system. Moreover, many studies recommended that certain "structural" features are also related to the effectiveness of early intervention, regardless of the curriculum model employed. Successful programs are reported to be more highly structured than less successful ones. In fact, recommended practices were first developed by Division for Early Childhood in 1991 to provide guidance to the relatively new field of Early Intervention.

The fields of early childhood and early childhood special education incorporate instructional goals, language development, concept formation and curriculum content into normally occurring routines in the home, preschool, day care centre, and kindergarten settings (Bruder, 2000; Rainforth & Salisbury, 1988). Bearing in mind
that children with special needs require efficient, effective, and functional instruction directed at achieving socially, psychologically and educationally valid outcomes (Hanson, Blackman & Kaul, 2003), it is important that practitioners identify the nature of each child's disability, needs and the extent to which accommodation and support will be necessary for each child to be successful. Instructional arrangements, curriculum content and instructional procedures can and should be varied to coincide with the intensity of each child's learning needs. Such accommodations increase the likelihood that children with special needs can be included in a variety of mainstream classroom activities.

Action across the life course as described in the Strategic Review of Health Inequalities in England post (2010) shows that disadvantages starts before birth and accumulates throughout life. Therefore, action to reduce health inequalities must start during gestation and be carried out through the life of the child and into adulthood. This may be made effective by providing evidence-based interventions and delivery systems (Dyson, Hertzman, Roberts, Tunstill & Vaghri, 2009).

Mashburt et al., (2008) found significant associations between teachers’ use of specific instructional strategies to promote children’s higher-order thinking and creativity (e.g. talking about ideas, reasoning about future events), the provision of feedback to children about their ideas and their work, and children’s academic and language competence gains. The quality of teachers’ emotional support for children (e.g., sensitivity to children’s needs, effective use of behaviour support strategies) was positively associated with children’s social competence. In all of these analyses, teacher-child interactions that reflected higher levels of instructional quality and emotional support were associated with better child outcomes. This study therefore
determined the early intervention strategies used by the teachers at early childhood education level.

2.4 Early Intervention and Play Materials

According to Deborah (2006), whether disabilities are physical or health-related, early intervention programs provide a strong foundation for the child and family. To ensure the success of children’s intervention programs the early intervention team must support parents’ efforts and reinforce their enthusiasm. Motor development and positioning and the development of communication skills are often target areas for young children with physical disabilities (Spiker, Donna, Kathleen, Hebbler & Mallik, 2005).

In all early-intervention disciplines, play becomes a major focus of professional services for children with developmental delay and special needs. Play serves as a process for learning, a process for assessing developmental skill sets, and a process for delivering intervention procedures to improve a child’s developmental and learning abilities (Lifter & Karin, 2008).

In other words, early intervention may involve establishing developmentally appropriate play skills themselves as a goal and using play as a means of achieving other goals (Lifter, et al., 2011). These can be for instance, enticing a child to swipe at bubbles extends the range of motion in his arms or when coaxing a child to crawl toward a toy improves her mobility. The introduction of miniature lifelike toys, in another example, that may encourage pretend play and cooperative play. Humphrey and Wakeford (2006) showed that block play helps children improve motor skills (by picking up blocks), overcome their mild sensory difficulties (by learning to tolerate the texture of the blocks), and increase their social interaction (by learning to take
turns playing with the blocks). Providers select play materials suited to their intervention strategies (Nwokah and Gulker, 2006).

The material culture of childhood most commonly involves toys (Brookshaw, 2009), the material culture of early intervention includes many different objects, some already in the home and some brought by the therapists toys, games, instructional materials, everyday objects, and construction pieces (Nwokah, 2003). Previous studies show that early-intervention professionals spend approximately 69 percent to 72 percent of their therapy sessions using toys. Although most professionals used toys already in their clients’ homes, they also brought their own play materials (Campbell & Sawyer, 2007). Selecting and preparing play materials forms a major component of the service professionals provide because these materials affect most of the stages in the intervention process including planning, budgeting, interacting with the children and their families, and teaching parents how to continue the therapeutic play after the visits.

The way professionals use play materials in consultation with families reflects their philosophy and favoured methods of child and family intervention (Peterson, Carla, Gayle, Eshbaugh, Hyun-JooJeon & Kantz, 2007). Generally, play materials are essential in early intervention and there is much evidence that providers help many families in poverty, we know little about the actual practices and preferences of different types of early intervention service providers (Nwokah, 2003).

The Parent-Child Home Program (2012) indicated that, early interventions can be broadly grouped into three categories: parenting programs, child-focussed programs and multi-component programs. Parenting programs are short-term interventions which primarily target the parent or family and provide parenting education or skills
training. Child-focussed programs target the child or young person directly and typically involve instructional or skills-based approaches delivered in the school settings. Multi-component programs involve more than one intervention and may target the entire school, the home and/or the community in addition to the child.

Therapists and intervention professionals have developed numerous models and approaches to integrate a child’s individual goals and objectives into routine activities (Mc-William & Robin, 2010). Prior to changes in early-intervention laws, parents and care givers brought their children to a center, school, or clinic. Under the traditional child-centered approach, the professionals using the play materials at the site “treated” the child while parents sometimes lingered in a waiting room until the therapist finished. Back when providers interpreted “natural environments” to involve just a shift in location, they simply gathered their play materials and took them to the home with little change in the treatment model. There the therapist initiates a lesson or therapy plan, and the parents remained passive observers. Although providers could see children in day-care centers and other familiar setting, they more typically visited the children’s homes weekly or monthly and stayed about an hour each time. They brought toys to the homes and took them away at the end of a session, leaving the children no opportunities to practice skills (e.g., stacking blocks) throughout the week or integrate the skills learned into everyday routines e.g., stacking plastic dishes into a low cabinet, (Stoltzfus, Emilie & Lynch, 2009).

In the 1990s, a family-centered approach emerged, which refined the interpretation of natural environments. This new, participation-based approach called for a parent or care giver to assert the family’s priorities, values, and routine activities and for a therapist to devise strategies for a child to learn the family’s preferences by using natural materials and toys available at home. Parents and therapists, in this new
approach, worked together as a team parents were regarded as the experts of their own children (Campbell & Sawyer, 2009). This family-participant approach (Bruder, 2000) emphasizes using materials already present in a child’s environment. Despite this common or shared approach, few agree whether the professionals should use toys and play materials already available in the home (or neighbourhood) or supply some play materials themselves. Recommendations from experts on the importance of materials preparation prior home visits seem to clash with an emphasis from the same experts on the advantages of using household objects (Klass, 2003).

Rwanda’s commitment and efforts being made by both the Ministry of Education and College of Education to put in place a School for Inclusive Education and Special Needs Education services within the University of Rwanda, able to respond to the all required above, it is critical to highlight that, capacity building for SNE has to take into consideration training needs at all levels of schooling and sectors of related services, ranging from pre-primary through Post primary education to tertiary levels.

There are critical link between features of classroom of learners with physical disabilities such as the quality of teacher-learner interactions and the nature of teachers’ to children, and positive learner’s outcomes. Data collected in state funded primary classrooms in 11 states with established programs provide evidence that the quality of children’s interactions with the nature of their experiences with their peers and the instructional focus of the classrooms are among the most essential features of classrooms for improving outcomes (Mashburn, et al., 2008). In contrast, most infrastructure and program design features (i.e., structural features such as class size, child-to-teacher ratio and teacher credentials) were not directly related to children’s academic and social outcomes. The researchers suggest that structural features create the conditions in which high quality teacher-child interactions occur (Powell &
Diamond, 2009). In Rwanda, a range of specialized materials, equipment and services still need to be developed, procured and supplied to schools, because these are either inadequate, inappropriate, or are not known. The current study therefore sought to identify materials used for providing early intervention in instructions.

2.5 Summary of Literature Review and Gaps

The literature review has discussed the global studies, early intervention strategies provided to learners with physical disabilities at early class levels and it has also shown the materials used by multidisciplinary team in early intervention to improve learner’s skills in different domains. The studies in the literature show that the quality and effectiveness of early intervention strategies were the major determinants of academic performance of learners with disabilities. However, the gap between the needs of learners and the provision level of early interventions were not comprehensively evaluated. This study determined the role of early intervention strategies on children with physical disabilities in two selected districts in Rwanda. Studies have also shown that a strong relationship between trained teacher and learners with disabilities has bridged the home-school gap and in turn improved the learner’s academic work (Cowan, 2005; Gakii, 2003; Mcwayney & Hanson, 2004). Nevertheless, these studies failed to formulate policies that would promote more quality interactions between parents and teachers over their children’s education in order to realize the Education For All goals (EFA) and Millennium Development Educational Goals (MDGs) on the basis of teacher professional qualification. This study therefore established the role of teacher professional education level in providing early interventions to learners with disabilities. In Rwanda, a range of specialized materials, equipment and services still need to be developed, procured and supplied to schools, because these are either inadequate, inappropriate, or are not
known. The current study therefore sought to identify materials used for providing early intervention in instructions.
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

The chapter presents research design, variables, location of the study, target population, sampling techniques, sample size, research instruments, pilot study, validity and reliability, data collection techniques, data analysis, logistical and ethical consideration.

3.1 Research Design

The study used a descriptive survey research to describe characteristics of a population or phenomenon being studied. It addresses the "what" question. What were the characteristics of the population or situation being studied? The characteristics used to describe the situation or population which was categorical scheme also known as descriptive categories. Descriptive study was the best method for collecting information that demonstrated relationships and described the world as it exists. Bickman and Rog (1998) suggested that descriptive studies can answer questions such as “what is” or “what was.” The research design was suitable for this study because it helped to determine the early intervention strategies on academic performance of learners with physical disabilities in two selected districts in Rwanda.

The study used quantitative approach in collecting and analysing data because quantitative approach produced data that were quantifiable through questionnaires.
3.1.1 Variables

3.1.1.1 Independent Variables

The independent variables represent the inputs or causes and they can be tested to see if they are the cause (Dodge, 2003). Independent variables were those that the researcher had control over in order to determine their effect on other variable which constituted; Professional Qualification Level, Early Intervention Strategies and Teaching Materials used by learners with physical disabilities.

3.1.1.2 Dependent Variables

Dependent variable represents the output or effect and it can be tested to see if it is the effect (Dodge, 2003). The dependent variables constituted; academic performance.

3.1.2 Location of the Study

The study was conducted in two selected Districts of Southern Province of Rwanda which are Nyanza and Huye districts. The two districts were selected because they have a big number of learners with physical disabilities in primary and secondary compared to other districts. The choice of two districts was largely influenced by availability of different categories of children with physical disabilities and educational reports also reveal that the area of the study faces several limits based on adequacy of trained special education teachers and provision of quality early intervention services to increasing number of children with disabilities. Hence, programs of early intervention strategies for learners with physical disabilities are not yet focused, because learners with physical disabilities are poorly performing at schools.
3.2 Target Population

Target population included all learners, teachers and parents or guardians working with learners who have physical disabilities in the special schools in those two districts. The numbers of learner respondents were 1364, out of this 871 were primary and 493 secondary. The number of teachers was 86, 54 in primary while 32 in secondary. The number of parents was 223 out of these 134 were primary parents while 89 were parents of learners in secondary. It has been indicated that some learners were orphans. Therefore, the target population was 1,673 respondents from which the sample size was drawn. The justification for selecting the subjects was that, they were able to interpret the items in the questionnaires and respond adequately by giving relevant information.

3.3 Sampling Techniques and Sample Size

3.3.1 Sampling Techniques

For the purpose of the study the researcher picked two districts, Nyanza and Huye Districts. Two special schools were included; 1 primary school from Nyanza District and 1 secondary school from Huye District. It is only in these districts the two special schools are located. The primary school was sub-divided into 3 classes (P4, P5 and P6) and a stratified random sampling procedure was employed to select 17 boys and 8 girls translating to a total of 25 learners in the primary level. On the other hand, secondary school was sub-divided into 3 classes (F4, F5 and F6) and 23 boys and 22 girls were sampled using stratified sampling procedure giving a total of 45 students. This made a total sample of 70 learners. This sampling technique helped the researcher to compare the aspects of early intervention of learners with physical disabilities at different educational levels. Purposive sampling technique was also used to select 10 teachers from primary and 10 teachers from secondary levels.
totalling to 20 teachers. Purposive sampling was also employed to select 6 parents of learners in primary and 6 for learners in secondary schools leading to 12 parents. The sampling procedure was used because parents and class teachers were considered to understand better the status of the early interventions in the schools and were directly in touch with the children with physical disabilities most of the time hence could provide relevant information on early intervention strategies. Additionally, the school records were used to provide information on parents’ residential addresses.

3.3.2 Sample Size

Sample size was made up of two special primary and secondary schools for learners with physical disabilities of HVPs Gatagara in Nyanza and Huye districts. It comprised 10 teachers from primary and 10 teachers from secondary levels totalling to 20 teachers, 25 learners from primary and 45 learners from secondary translating to 70 learners and 6 parents of learners in primary and 6 for learners in secondary schools leading to 12 parents. The total of 102 respondents was used. The sample taken was considered adequate to make generalization on the actual population size.
Table 3.1 Selected classes and sample size

<table>
<thead>
<tr>
<th>HVP Gatagara in Nyanza district</th>
<th>HVP Gatagara in Huye district</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary level</strong></td>
<td><strong>Secondary level</strong></td>
</tr>
<tr>
<td>Classes</td>
<td>Classes</td>
</tr>
<tr>
<td>P4</td>
<td>Form4</td>
</tr>
<tr>
<td>P5</td>
<td>Form5</td>
</tr>
<tr>
<td>P6</td>
<td>Form6</td>
</tr>
<tr>
<td>Others</td>
<td>Others</td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Boys</td>
<td>5</td>
</tr>
<tr>
<td>Girls</td>
<td>3</td>
</tr>
<tr>
<td>Teachers</td>
<td>3</td>
</tr>
<tr>
<td>Parents</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
</tr>
<tr>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>102</td>
</tr>
</tbody>
</table>

**Source:** Researcher

### 3.4 Research Instruments

Questionnaires, observation checklist and focus group discussion were used as research instruments in the study. The research instruments were formulated by the researcher.

#### 3.4.1 Questionnaire

A questionnaire has the ability to collect a large amount of information in a reasonably quick space of times (Orodho, 2010). It also ensures confidentiality. Closed-ended 11 items in the questionnaire were used to elicit salient and specific data to enable the study to be more focused and realistic in its findings. The open-ended 17 items allowed the respondents to give their views and opinions on the early interventions provided to learners. The questionnaire for teachers was used to seek background information which revealed teachers’ personnel data. It also provided for collection of information on the teacher professional, tools and strategies used for
learners with physical disabilities and impact on academic performance. The questionnaire for teachers consisted of three sections. Section one contained background information on teachers’ demographic characteristics with 4 items. Section two comprised of early intervention provided for learners with physical disabilities, the impact on academic performance and how it can be improved. This was made up 4 items. Sections three comprised of student’s academic levels, the tools and strategies used and how they impede teaching and learning process. It had 4 hence a total of 12.

The questionnaire for learners consisted of two sections; section one combined items on the background information which sought personal data; these were 3 items. Section two comprised the early intervention to manipulation of curriculum and the items were 6 giving us a total of 9 items. The questionnaire for parents consisted of two sections; Section one comprised the items on the background information to elicit personal data which comprised 3 items. Section two consisted of information related to early childhood for learners and the items were7 this made a total of 10 items.

Teachers, learners and parents required to respond by putting a tick, yes/ no and giving some explanations.

3.4.2 Interview Guide

This instrument consisted of a set of general eleven questions that the interviewer asked when interviewing a respondent. The instruments helped to cover a broad area of the study and allowed in depth information through constant probing. This was used for parents who were not able to fill questionnaires because of their academic level in gathering data on early interventions, teaching learning process’ facilities and
impacts as well as recommendations for improving the academic performance of learners with physical disabilities.

3.4.3 Observation Checklist

This instrument was useful in the classroom during instruction the researcher sat in classes during the teaching and learning process to observe the learner’s behaviour, manipulation of curriculum, materials, strategies and teachers professional in teaching learners with physical disabilities. Observation schedule were considered appropriately because; it yielded data which was used to supplement the questionnaires and interviews for relevant information.

3.4.4 Focus Group Discussion

The strength of FGD relied on allowing the participants to agree or disagree with each other. This took place in one room where the researcher with learners sat down together and discussed the questions prepared on the subject of the study. The focus of FDG was to confirm what had been collected from questionnaires and so that, it provided an insight into how a group thought about the research topic.

3.5 Pilot Study

The piloting was carried out in one of the sampled schools because there were no other schools with similar characteristics as the sampled schools in the province. During the process, the research instruments of this study were pre-tested at HVP Gatagara in Nyanza district. After two days, then instruments were administered to learners and teachers in the same school. Questionnaires for parents were also administered. Piloting involved 2 teachers, 3 learners and 2 parents. The respondents who participated in the pilot study did not take part in the final study. Piloting was done to check the clarity of the research instruments.
3.5.1 Validity

Validity is the extent to which a concept, conclusion or measurement is well-founded and corresponds accurately to the real world. The validity of a measurement tool is considered to be the degree to which the tool measures what it claims to measure (Ogince, Hall, Robinson, Blackmore, 2007). To ensure validity of instruments we used the expert judgment which ascertained that the items of questions were related to the objectives of the study and suitable for their task. This means that consultation with the experts in the area of special needs education was done and the instruments were modified and redesigned accordingly to determine the relevance of the content of questionnaires and objectives and to ensure the clarity of information in the questionnaires. Following the feedback, ambiguous items were also deleted from the instruments in order to enhance easy interpretation of the questions.

3.5.2 Reliability

Reliability is the degree to which an assessment tool produces stable and consistent results (Cozby, 2001). To test reliability, test-retest technique used. The instruments were administered in schools for physically handicapped HVPs Gatagara in Nyanza and Huye districts to the subject involved in the pilot study. After two weeks, the results were analysed and the reliability coefficient was calculated using the Spearman’s rank order and correlation coefficient (Rho). It indicated that there was a strong positive correlation between three tests of scores where Rho=0.825 for the teachers questionnaire and 0.812 for the learners questionnaire and 0.806 for the parents questionnaire. Therefore the instruments were found to be reliable for data collection for this study.
3.6 Data Collection Techniques

Prior to the final study, the researcher obtained a research permit from the Ministry of Education in Rwanda upon receiving an authorization letter from the graduate school of Kenyatta University. The study took duration of 2 weeks; during the first day of the week, the researcher personally visited the schools under study and explained the purpose of the study to the head teachers. Following the visit, the head teachers helped to inform the teachers and learners who were involved based on their participation in the study. This also assisted the researcher to establish a good rapport before the actual study. On the second day at HVP Gatagara in Nyanza district, the questionnaires were administered to the teachers in the staffroom in the morning and in the afternoon questionnaires were administered to the learners in class. This was done by a researcher with the help of one research assistant and the questionnaires were collected immediately.

On the third day, group discussion between the researcher and learners took place in a reading room and information was gathered before the end of the day. The researcher agreed with teachers the day of observation checklist which took place after two days of administration of FGD with learners. On the day of observation checklist the researcher requested head teacher of the school to be given the address and contacts of some parents who had learners with physical disabilities from the records of the school. The purpose was to contact and inform parents about the research, then the parents were visited by the researcher with one researcher assistant according to appointment and appropriate place of the parents. Questionnaires for parents were administered to parents who were able to fill the forms. The researcher also conducted interviews on those parents who were not able to fill the questionnaires because of
their level of education. All the parents participated in the study while at home. During the second week the same process was done at HVP Gatagara in Huye district.

3.7 Data Analysis

Collected data from the study was both quantitative and qualitative in nature following the research questions. Quantitative data collected from questionnaires was coded and analysed with the aid of Statistical Packages for Social Sciences. The analysed data was then presented descriptively using frequency distribution, percentage and tabulation. Qualitative data collected through interview, observation checklist and focus group discussion was analysed qualitatively and the dominant themes were captured and presented through narratives based on the research objectives. Conclusions were then drawn and recommendations made on the basis of the research findings.

3.8 Logistical and Ethical Considerations

The researcher obtained an introductory letter from the Graduate School at Kenyatta University after that, the researcher went to the Permanent Secretary in the Ministry of Higher Education Science and Technology in Rwanda to seek permission to carry out the research. After wards, the researcher informed head teachers in order to conduct research in an appropriate way. Last but not least, the researcher asked respondents not to write their names on questionnaires, this assured the respondents of confidentiality that the information collected from them would be used for the purpose of the study.
CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

4.0 Introduction

This chapter presents the data analysis and discussion of the study findings. In two sections: section one on demographic information; and section two covers the descriptive statistics focusing on the objectives of the study. The objectives of the study sought to:

i) Find out teacher professional education level in providing early intervention in Special Need Education;

ii) Determine the early intervention strategies used by the teachers at early childhood education level and;

iii) Identify materials used for providing early intervention in instructions.

SECTION ONE: DEMOGRAPHIC INFORMATION

4.1 Response Return Rate

The study sample consisted of 20 teachers, 70 students and 12 parents. Response rate was however obtained from 20 teachers, 68 students and 9 parents giving a response rate of over 90%. This response rate was considered adequate enough to have the data analysed and recommendations made. The findings have been organized and presented based on research questions of the study.

4.2 Demographic Data of Learners

The demographic data for this category of respondents included gender and school level. The data were collected from both HVP Gatagara Primary school in Nyanza
district and HVP Gatagara Secondary School in Huye district for learners with disabilities. These data was collected to get equal representation between boys and girls in the study. School level was considered to seek varied information from the sample of 70 students.

4.2.1 Distribution of the Learners by Gender

The finding in Figure 4.1 shows a representation of the students by gender of which 39 (57.4%) of the students were males and 29 (42.6%) were females. The total number of learners was 70. Two of the respondents did not respond which made total of 68. The finding implies that there were more male learners in both primary and secondary schools levels than the females.

Figure 4.1: Gender of Learners

Source: Research data (2015)
### Table 4.1: School Level of Learners

<table>
<thead>
<tr>
<th>School level</th>
<th>No. of learners</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=68)</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>P5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>P6</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Form4</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Form5</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Form6</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

Source: Research Data (2015)

The findings from table 4.1 reveal that 24 (35.4%) were from the primary school, while 44 (64.6%) of the students were from the secondary school. This provided the best representation of the respondents. Hence learners from different educational levels gave reliable information based on their academic background and provided reliable information about the early intervention offered to them.
4.2.3 Distribution of Parents by Educational Levels

The study also established the levels of education of parents. Data was presented in Figure 4.2.

![Distribution of Parents by Educational Levels](image)

**Source: Research data (2015)**

**Figure 4.2 The Level of Study for Parents**

As shown in the figure above, 6 (66.7%) of the parents did not have any formal education, 2 (22.2%) had attained primary and only 1 of them (11.1%) had secondary education. None of the parents has studied to university level. This implied that most of the parents were not well informed on early intervention matters pertaining to their children. According to Mc-William and Robin (2010) parents are important partners in the whole education process of Special Needs Education (SNE). They ensure birth registration, safeguard children's rights and link the child to basic services. Critically, parents are primarily responsible for early identification of disabilities, assessment and intervention. Hence, without parental involvement in
early intervention services, social, emotional, intellectual and psychological developments among learners are inadequate (Pagliano, 1999).

4.2.4 Distribution of Parents by Age

The study set to establish the classification of ages for parents. The information was presented in Table 4.2.

<table>
<thead>
<tr>
<th>Age bracket</th>
<th>Frequency</th>
<th>Per cent</th>
<th>Valid Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>31-40 years</td>
<td>3</td>
<td>4.4</td>
<td>33.3</td>
</tr>
<tr>
<td>61-70 years</td>
<td>3</td>
<td>4.4</td>
<td>33.3</td>
</tr>
<tr>
<td>41-50 years</td>
<td>2</td>
<td>2.9</td>
<td>22.2</td>
</tr>
<tr>
<td>51-60 years</td>
<td>1</td>
<td>1.5</td>
<td>11.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>13.2</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Research data (2015)

The findings in Table 4.2 indicates that 3 (33.3%) of parents were between 31-40 years, 2 (22.2%) were in the range of 41-50 years, 1 (11.1%) was between 51-60 years and 3 (33.3) were between 61-70 years old. There were no parents within 21 -30 and 70 above age brackets respectively. This implied that majority of the parents were old enough to fully comprehend and identify the early intervention services that should be provided to their children with disabilities towards enhancing their academic performance.
4.2.5 Socio-Economic Status of the Parents

The socio-economic status of the parents was investigated to determine whether it contributed to parents’ awareness of intervention and services which would have been given to their children. Findings on the socio-economic status of parents were presented in Figure 4.3.

![Pie Chart](image)

**Figure 4.3 Socio-Economic Status of the Parents**

**Source: Research data (2015)**

Figure 4.3 indicates that majority 6 (66.7%) of the parents were farmers while 2 (22.2%) were business persons/ however, only 1 (11.1%) was an employee. These findings implied that parents in employment and business respectively sought intervention early for their children with disability while those in farming had been reluctant or slow to seek intervention.
SECTION TWO
This section covers the descriptive statistics focusing on the objectives of the study.

4.3 Teachers’ Professional Qualification Level in Providing Early Intervention in Special Need Education

Objective One: To find out teacher professional education level in providing early intervention in Special Need Education.

The respondent characteristics were considered important for the study to generate required data.

4.3.1 Professional qualification of teachers

Table 4.3 Professional Qualification of Teachers

<table>
<thead>
<tr>
<th>Teacher qualification</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>p1</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td>bachelor's degree</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td>Diploma</td>
<td>3</td>
<td>15.0</td>
</tr>
<tr>
<td>Masters</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Research data (2015)

The data on Table 4.3 shows the level of professional qualification of the 20 teachers sampled. 9(45%) were P1 (A2), 3(15%) were diploma holders while 8(40%) had bachelor’s degree in education and there was no teacher who had master’s degree in education. This indicates that majority of the teachers were in a position to respond and use the appropriate strategies in providing basic early intervention services to the learners with physical disabilities. Despite the fact that professional background was
adequate, holistic development of learners was still inadequate in terms social, psychological and intellectual growth. This implied that most of the teachers were not adequately trained due to lack of in-service training on new methods of early interventions on learners with physical disabilities. These findings coincide with the findings of Pagliano (1990) who revealed that a strong early intervention team involves teachers with early childhood education training, special education specialist, speech and language pathologists, physical therapists and occupational therapists. These skills are positively significant towards the achievement of effective provision of basic early interventions goals in training centres. Enderby (2002) and Artiken et al (2009) further indicated that trained teachers always work as a team and effectively provide more efficient services than those provided individually by untrained teachers.

4.3.2 Academic level in Special Needs Education

The study set to establish the academic level of teachers in special needs education.

The information was presented in Table 4.4.

Table 4.4: Academic level in Special Needs Education.

<table>
<thead>
<tr>
<th>Academic level in SNE</th>
<th>Frequency</th>
<th>per cent</th>
<th>Valid per cent</th>
<th>Cumulative per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>N=20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular teacher in education</td>
<td>17</td>
<td>25.0</td>
<td>85.0</td>
<td>85.0</td>
</tr>
<tr>
<td>Diploma in SNE</td>
<td>3</td>
<td>4.4</td>
<td>15.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Bachelor’s degree in SNE</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Masters in SNE</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>29.4</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data (2015)
According to Table 4.4 the numbers of the sampled teachers only 3(15%) were trained in Kigali Institute of Education (currently College of Education) by experts and offered diploma in Special Needs Education while 17(85%) were regular teachers who had acquired some knowledge and skills from different experts during workshops and seminars organized by NGOs and Ministry of Education on how to teach learners with special needs. According to Cowan (2005) there is a positive significant relationship between trained teachers and learners towards bridging the home-school gap which in turn improves the learners’ academic work. Nevertheless, it was noted that educational programs were not delivered as effectively as expected. This implies that the findings contributed to poor academic performance of learners with physical disabilities. Learners with physical disabilities need teachers who have knowledge and skills adequate enough in the area of SNE in order to be able to adapt teaching/ learning resource and be able to meet their individual academic needs (Gakii, 2003; Mcwayne & Hanson, 2004)

The number of diploma teachers qualified in SNE is few because in Rwanda there is a lack of colleges and higher institutions which offer certificates and degrees in the area of SNE. However, 1997 Amendments to IDEA require that special educators be knowledgeable and skilled in the general education core curriculum standards and the use of accountability assessment systems in order to educate students with disabilities in general education settings.
4.3.3 Teaching Experience

In an attempt to establish teaching experience from teachers, they were asked to indicate the period they had taught. The responses are shown in Figure 4.2.

![Teaching Experience Diagram]

**Figure 4.4: Teaching Experience**

**Source: Research data (2015)**

Based on data shown in Figure 4.4, majority 10 (50%) of the teachers had taught from (1-5) years, while 7 (35%) had teaching experience between 6-10 years and 2 (10%) had teaching experience between 11-15 years. However, only 1 (5%) had taught less than 1 year. The finding implied that majority of the teachers sampled had from 1-5 years of teaching experience and had varied exposures to early intervention issues and thus were in a position to respond to the items as enquired by the research tools from the varied experience. If this period could be translated to good teaching and accumulation of knowledge, then these teachers should be considered to be competent and able to provide adequate knowledge about the early intervention services provided to students. However, Best *et al.* (2010) suggested that teachers need
specific disability training skills to be able to respond to questions about curriculum adaptation, assistive technology, post-secondary supports and services as well as development of skills for self-determination in the learners. Thus, teachers need competency in imparting knowledge on physical task management to learners with physical disabilities.

4.4 Early Intervention Strategies Provided to the Children

**Objective Two:** To determine the early intervention strategies used by the teachers at early childhood education level.

The question on what had been done upon realizing a child had disability was asked to both the children and interview with the parents who involved in the study.

4.4.1 Early intervention Strategies as reported by Learners

The findings revealed that majority of the 53 (77.9%) learners reported that they were offered hospital services while 9 (13.3%) indicated that they were taken to centres for persons with disabilities. However, while 6 (8.8%) reported that they remained at home. This implies that early interventions did not cater for all learners with physical disabilities. This finding is supported by the findings of Batches *et al.* (2006) who revealed that the major challenge towards early intervention on learners with physical disabilities is failure to match high quality instruction to learners’ basic requirement. Freund (1990) also opines that it is through the caregiver that the young child gains access to the environments.
4.4.2 Early intervention Strategies as reported by the Parents

On the other hand, majority 6 (66.6%) of the parents reported that, “Bagiye bajyana abana babo kwa muganga gushaka ubufasha bujyanye n’ ubumuga bwabo”. Translated into English as they used to take their children to the hospital to seek help regarding their disabilities. In addition, 2 (22.2%) of the parents reported that they took their children to the disabled centres. However, only 1 (11.2%) parent reported that he did not take his child anywhere. This means that even though majority of the parents involved in providing early intervention services to their children, some were not aware of the importance of early intervention. This finding is supported by the notion of Bailey et al (2005) who recognized the importance of parental involvement in early intervention on children with disabilities and at the end of early intervention, most parents felt competent in caring for their children, advocating for services and gaining access to formal and informal supports. If a child had been referred for an evaluation for early intervention (EI) services, it is easy to feel a little overwhelmed. There’s a good chance that parents do not have prior experience with the EI system and if a child was recently diagnosed with a disability, parents may not have previous knowledge of his or her condition. Always parents should remember that while a clinician diagnoses and treats a child, they know the child better. They are familiar with his or her needs, desires and struggles. The active involvement of the parents in the EI program is highly critical for a successful individualized family service plan (IFSP) or treatment plan.

Children who are given a firm developmental foundation are likely to achieve maximum benefits. Research has also shown that investment in the early years outperforms other public policy options in terms of savings on remedial programs (UNESCO, 1997; Lifter et al., 2011). For children from poor families, if incorporated
into rich intervention programs, early childhood is a time-bound opportunity to break the cycle of poverty.

Early intervention strategies would be identified to help child and family meet the IFSP outcomes. An IFSP is a plan for special strategies for young children with developmental delays. An IFSP only applies to children from birth to three years of age. Once a child turns 3 years old, an Individualized Education Program (IEP) is put into place. This program was created by US Public Law 99-457. The IFSP is developed with service coordinator for a Part C eligible child and family. The service is available "Part C" (formerly Part H) to the Individuals with Disabilities Education Act (IDEA) The IFSP is set up to identify individualized supports and services that would enhance the child’s development. The IFSP is usually done at 6 month intervals but can be done more often if necessary. The plan must include an assessment of child's present level of development, a statement of goals, support services that would be put in place to achieve those goals (Hallahan, Kauffman & Pullen, 2009).

Early intervention services are designed to meet the developmental needs of children who have a developmental delay in physical, cognitive, communication, social, emotional or adaptive development or have a diagnosed condition that has a high probability of resulting in developmental delay. States must offer all early intervention services to children with developmental delay or those with an established disability; they have the option of serving those at risk of having poor developmental outcomes. The type and extent of services varies on the basis of the Individualized Family Service Plan (IFSP) (Shore, 1997). These services have been developed because early intervention is recognized to be important if children with disabilities are to achieve their full potential.
4.4.3 Involvement of other Personnel in Collaboration.

The question was addressed to parents, children and teachers in order to find out the collaboration team in early intervention strategies and gives the responses presented by the personnel and interview with the parents who participated in the study. Based on the findings, 8 (88.9%) of parents reported that they collaborated with nurses and other family members to help their children and only 1 (11.1%) indicated that only family members were aware of the child’s disability and offered support.

All the teachers (100%) reported that they worked with other teachers and non-teaching staff members and parents in helping learners with disabilities. On a similar enquiry, majority 59 (86.8%) of learners responded that personnel involved in intervening in their disabilities included their parents, family members and nurses, 6 (8.8%) indicated that only parents and family members helped them while 3 (4.4%) didn’t respond to the question.

An early childhood intervention team generally consists of teachers with early childhood education training, special education specialists, speech and language pathologists, physical therapists (physiotherapists), occupational therapists and other support staff, such as music therapists, teacher aides/assistants and counsellors. A key feature of early childhood intervention is the trans-disciplinary model, in which staff members discuss and work on goals even when they are outside their discipline: "In a trans-disciplinary team the roles are not fixed. Decisions are made by professionals collaborating at a primary level. The boundaries between disciplines are deliberately blurred to employ a 'targeted eclectic flexibility' (Pagliano, 1999).

The concept of multidisciplinary team was originally mandated in PL 94-142 and was recently reiterated in 2004 reauthorization of IDEA (PL108-446). The
multidisciplinary approach utilizes the expertise of professionals from several disciplines, each of whom usually performs his/her assessment intervention and other tasks independent of the others. This ensures that there is a high degree of professionalism, autonomy and integration. A team exist only in the sense that each person shares a common goal.

4.4.4 Early Intervention Strategies Provided to Learners with Physical Disabilities on Attending School for the First Time.

The study sought to determine the types of early intervention strategies offered to students with physical disabilities when they attended school for the first time. The responses from the question above indicated that there was not early intervention teachers provided in schools to learners with disabilities. All teachers mentioned that they helped the learners to locate where classes, offices, wash rooms and hostels were on the first day and proceeded to teach on the following day. This contrasts with the view that the teacher’s role which is to encourage the cognitive and fine motor development of each child through a range of playful activities that support the development of all the key cognitive developments of early childhood which include: understanding of similarity and difference, colour concepts and number concepts (Spiker, Hebbeler, Wagner, Cameto, & McKenna, 2000). Each child is regularly assessed, mostly through careful observation and the understanding gained guides the setting of developmentally appropriate goals.

Teachers were further asked whether it was necessary to provide early intervention to learners with physical disabilities. The findings were presented in Table 4.6.
Table 4.5 Importance of Early Intervention to Learners with Physical Disabilities

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Valid Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Necessary</td>
<td>16</td>
<td>80.0</td>
</tr>
<tr>
<td>Not responded</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Researcher data (2015)

The findings in Table 4.5 show that majority 16 (80%) of the teachers reported that it was necessary to intervene when learners report to school for the first time because it helped them to feel comfortable within the school environment and it enhanced learner’s confidence as he/she envisages the teaching-learning process to take place, nevertheless, 4 (20%) of the respondents didn’t respond to the question.

4.4.5 Strategies Used by Teachers in Teaching Learners with Physical Disability

Teachers were asked to give the strategies and tools they used in teaching learners with physical disabilities. The responses from this item showed that a majority of the teachers 8 (40%) indicated that they used question and answer method, flow charts, adapted writing materials e.g. adapted pencils and pens with learners who had finger dexterity problems while 5 (25%) indicated the use of ability groups and learner centred methods and real objects as tools where applicable. The remaining 7(35%) stated that they used different methods and teaching/learning materials depending on the subject and content to be taught.

As noted earlier, many teachers do not have special needs education training and therefore they use methods and teaching/learning aids that they consider to meet their learners needs more effectively. Practice of educating learners with special needs is a
way that addresses their individual differences and needs. Ideally, this process involves the individually planned and systematically monitored arrangement of teaching procedures, adapted equipment and materials, and accessible settings. These interventions are designed to help learners with special needs achieve a higher level of personal self-sufficiency and success in school and their community, than may be available if the student were only given access to a typical classroom education (Goode, Diefendorf & Colgan, 2011).

Teachers were also asked whether strategies tools used affect the academic performance of learners. The findings were presented in Table 4.6.

### Table: 4.6 Teachers’ Level on Agreement of Strategies and Tools to Affect Academic Performance of Learners

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong agree</td>
<td>11</td>
<td>55.0</td>
</tr>
<tr>
<td>Agree</td>
<td>6</td>
<td>30.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>3</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Source: Research data (2015)*

Table 4.6 indicates that 11(55%) of the teachers strongly agreed that as a teacher one must think over the best methods of teaching learners with a view to meeting their individual needs. They observed that it took a long time to complete a program if a teacher must deals with individual learners in a class. Failure to cover the content of program often affects learners. On other hand when they are in hurry to complete the program they don’t take care of the needs of learners with disabilities. Moreover, 6
(30%) of them agreed by saying that it depended on the subject especially in sciences while 3 (15%) disagreed.

From focus group discussion, majority of learners reported that they were provided support in sport services by teachers and staff. However, they did not mention the involvement of either a nurse or occupational therapist as one way of strengthening their physical ability and motor skills. They also said that teachers assist them in accomplishing their tasks both in studies and exams by providing the books and other teaching-learning materials and extra-time. As for the learners they answered that they were comfortable with strategies and materials used by teachers but the challenges they faced in academics were as results of poverty because most of them were from poor family backgrounds. However, Part C of IDEA is a federal grant of early intervention program that assists in recognition of "an urgent and substantial need" to:

- Enhance the development of infants and toddlers with disabilities;
- Reduce educational costs by minimizing the need for special education through early intervention;
- Minimize the likelihood of institutionalization, and maximize independent living.
- Enhance the capacity of families to meet their child's needs.

From the observation checklist learners in a wheelchair were so hard to involve in group discussion once teachers asked them to sit in groups.

The same focus group discussion with the leaners was subjected to check if the strategies and tools used by teachers fit the learners. The findings of the study revealed that out of 20 respondents 10(50%) strongly agreed by indicating that "the way teachers provide the notes it took long for some learners to complete them
because they even use their weekends to complete the notes, 5(25%) of them disagreed while others 5(25%) didn’t indicate their position.

4.4.6 Consistency of Teachers Attendance to Learners with Physical Disabilities

From the observation checklist, it was noted that teacher’s availability in teaching and facilitation of learners when teaching and learning is taking place was not enough. The data gathered during observation of six teachers visited in their classes are indicated on the figure below.

Source: Research data (2015)

Figure 4.5 Consistency of Teachers Attendance to Learners with Physical Disabilities

Figure 4.5 indicates that out of the respondents (6 teachers visited), 3(50%) teachers some time paid attention to the learners, 2 (33.3%) of them always paid attention to the learners while only 1(16.7%) rarely paid attention to the learners. In that lesson observation had mentioned that teachers organise the lesson by grouping learners.
4.4.7 Teachers’ Mode of Assisting Learners in Class

During observation checklist the researcher wished to observe the time teachers used to help learners to accomplish their tasks.

Table 4.7 Methods used by Teachers’ in Assisting Learners in Class

<table>
<thead>
<tr>
<th>Methods</th>
<th>Very effective</th>
<th>Effective</th>
<th>Ineffective</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Assisting learners</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Marking learner’s book</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Monitoring group work in class</td>
<td>16</td>
<td>80</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.7 revealed that the time provided for group work was very effective at 80%, while time for teachers to assist learners was effective at 50%. However, time spared for marking learners’ books was not effective (85%). However, a big percentage (50%) of learners with disabilities went unassisted during learning. According to Mashburt et al. (2008) the enhancement of thinking and creativity entirely depends on the quality of instructional strategies used by teachers during teaching/learning activities. Hence failure to use the appropriate strategy leads to poor social competence among learners with physical disabilities. This implies that early intervention was inadequately implemented in the two schools under study hence this lowered the quality of early interventions provided to learners by teachers.
### 4.5 Types of Materials Used by Teachers to Assist Learners

**Objective Three: To identify materials used for providing early intervention in instructions.**

In observing the materials and how they were used, the researcher identified the materials used by teachers in teaching learners with physical disabilities.

#### Table 4.8 Types of Materials Used by Teachers to Assist Learners

<table>
<thead>
<tr>
<th>Resource materials in class</th>
<th>Availability (N=20)</th>
<th>Available</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Books</td>
<td></td>
<td>18</td>
<td>90</td>
</tr>
<tr>
<td>Charts</td>
<td></td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>Models</td>
<td></td>
<td>4</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 4.8 shows that majority 18(90%) of teachers used books as the major resource materials used were books. However, other essential teaching/learning materials such as charts and models were inadequate. This implies that materials were not sufficient for effective implementation of early interventions on learners with physical disabilities in the two schools under study. Hence this led to poor holistic development and poor performance in academics among learners with disabilities. This finding coincides with the findings of Nwokah (2003) who found that selecting and preparing appropriate materials forms a major component of the early intervention service and without it learners with physical disabilities will eventually fail to improve because these materials affect most of the stages in the intervention...
process. For instance, motor development and positioning and the development of communication skills are often target areas for young children with physical disabilities (Spiker, Donna, Kathleen, Hebbler & Mallik, 2005). In addition, some of the students had problems with their upper limbs and this necessitated adapting of writing materials which had been as noted earlier. This could be interpreted to mean that the resource materials are crucial without which the learners could remain passive or wait until the teacher comes round to perform a task for them. It could be observed from the checklist that classrooms were arranged to create space for mobility to allow the use of wheel chairs.

4.5.1 Class Placement of Learners

Parents were asked to indicate academic proficiency of their children. The findings were summarized in Table 4.9.

Table 4.9 Academic Proficiency Rating of Learners by their Parents

<table>
<thead>
<tr>
<th>Response rate</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>5</td>
<td>55.6</td>
</tr>
<tr>
<td>Very good</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>Poorly</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>Excellent</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Research data (2015)

Table 4.9 presents the academic proficiency rating of learners by their parents where no learner performed at the “excellent” rating. The findings revealed that majority 5(55.6%) reported, “bashubije ko abana babo batsinda k’uburyo bushimishije”. Translated in English means, there was good performance among their children. Similarly, 2(22.2%) parents reported that their children performed very well. Nevertheless, 2 (22.2%) parents indicated that their children poorly performed. This is
an indication that even though the majority of the children were envied by the parents due to their good performance, it was evident that a good number were still performing poorly. This was maybe due to lack of sufficient provision of early interventions by both teachers and other collaborators. Moreover, most parents did not participate in the process due to lack of awareness and poverty reasons.

Table 4.10 Rate academic results for learners at Gatagara Primary School

<table>
<thead>
<tr>
<th>Response rate</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division II</td>
<td>15</td>
<td>65.2</td>
</tr>
<tr>
<td>Division III</td>
<td>6</td>
<td>26.1</td>
</tr>
<tr>
<td>Division IV</td>
<td>2</td>
<td>8.7</td>
</tr>
<tr>
<td>Division I</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Research data (2015)

The table above indicates the rate of academic results of learners which shows that from 23 learners who sat for primary national examination there was no learner performed at “division I” while 15 were classified in “division II”, 6 learners were in “division III” and 2 of them were classified in “division IV”

Table 4.11 Rate Academic results for Learners at HVP Gatagara Secondary School

<table>
<thead>
<tr>
<th>Response rate</th>
<th>Frequency</th>
<th>Valid Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass</td>
<td>32</td>
<td>69.6</td>
</tr>
<tr>
<td>unclassified</td>
<td>14</td>
<td>30.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4.11 shows the rate academic performance results of learners from HVP Gatagara secondary school where 32 out of 46 learners got pass and 14 learners rest were unclassified. Poor academic performance shows that planning, budgeting, interaction between learners and families and informing parents were not taken into account. According to Mashburn *et al.* (2008), quality of children’s interactions with the nature of their experiences with their peers and the instructional focus of the classrooms are among the most essential features of classrooms for improving outcomes in academics among learners with physical disabilities.

Teachers, learners and parents were further asked to suggest what could be done to improve academic performance of learners. The teachers suggested that it was very important to provide more training for them to enhance their capabilities in teaching learners with physical disabilities and the use of different materials used in the teaching/learning process. They also recommended the improvement of materials used in teaching learners with physical disabilities.

Basing on the same enquiry, learners recommended the need for a plan to be provided with learning materials, support services and a subsidy of school fees which they claimed their families couldn’t afford. Parents of children with disabilities said it is more expensive to get what child’s needs to meet the needs of their children and suggested provision of supports either in kind or financial from different benefactors.
CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction
The purpose of this study was to determine the strategies of early intervention on academic performance of learners with physical disabilities in Nyanza and Huye districts of Rwanda. The chapter presents summary of the study findings following research objectives. Data was collected from teachers, parents and learners using questionnaires, focus group discussions with students and observation checklist. The summary was based on the responses of 20 teachers, 68 learners from the two special schools for learners with physical disabilities and 9 parents. The data were analysed using descriptive statistics and discussed. The data was presented descriptively using tables and figures showing frequencies and percentages. Conclusions were drawn and recommendations made based on the research objectives. Recommendations for further research were also made on the basis of the research findings.

5.1 Summary of Research Findings
The findings showed that early intervention provided to learners with physical disabilities was inadequate. The infants and toddlers provided with early intervention are those whose families were able to take them to the centres that help people with disabilities. These learners comprised a small number compared to the sample size used. Most of the learners and their parents mentioned that they used to go to the hospitals with a hope that their children would recover from the disabilities as other illnesses. Assessing the learners before designing exercises for the individuals affected lacked adequate apparatus which lowered the quality of early childhood intervention of learners with physical disabilities.
5.1.1 Teacher professional education level in providing early intervention in Special Need Education

The findings revealed that teaching professional experience was necessary as one of the key services in teaching learners with physical disabilities. Nevertheless, most of the teachers used in the sample had vast experience in teaching typical learners but not qualified in the area of Special Needs Education. The numbers of the sampled teachers only 3(15%) were trained in Kigali Institute of Education (currently College of Education) by experts and offered diploma in Special Needs Education while 17(85%) were regular teachers who had acquired some knowledge and skills from different experts during workshops and seminars organized by NGOs and Ministry of Education on how to teach learners with special needs. Based on experience majority 10 (50%) of the teachers had taught from (1-5) years, while 7 (35%) had teaching experience between 6-10 years and 2 (10%) had teaching experience between 11-15 years. However, only 1 (5%) had taught less than 1 year. The finding implied that majority of the teachers sampled had from 1-5 years of teaching experience. The findings revealed that teachers who lacked credentials to teach in the physical disabilities area felt inadequate to teach or provide direct services to this group of learners. Therefore educational programs were not delivered adequately to learners with disabilities.

5.1.2 Early Intervention Strategies used by the Teachers at Early Childhood Education Level.

The findings indicated that when the learners went to school they were only shown and guided around the school compound. Majority 6 (66.6%) of the parents reported that they used to take their children to the hospital to seek help regarding their disabilities while 2 (22.2%) reported that they took their children to the disabled
centres. However, only 1 (11.2%) parent reported that he did not take his child anywhere. Based on the involvement of other personnel in collaboration, all the teachers (100%) reported that they worked with other teachers and non-teaching staff members and parents in helping learners with disabilities. On a similar enquiry, majority 59 (86.8%) of learners responded that personnel involved in intervening in their disabilities included their parents, family members and nurses, 6 (8.8%) indicated that only parents and family members helped them while 3 (4.4%) didn’t respond to the question. All teachers also mentioned that they helped the learners to locate where classes, offices, wash rooms and hostels were on the first day and proceeded to teach on the following day. The methods used to teach learners with physical disabilities were effective as far as availing extra-time and adapting the sitting arrangement while learners performed learning tasks. It was revealed that teachers made adaptations when working with learners in class to improve their academic performance.

5.1.3 Materials used for providing early intervention in instructions.

However, the teaching/learning materials used in teaching were noted not to be very ideal for the learners. Majority 18(90%) of teachers used books as the major resource materials used were books. However, other essential teaching/learning materials such as charts and models were inadequate. The findings also revealed that majority 5(55.6%) mentioned that there was good performance among their children. Similarly, 2 (22.2%) parents reported that their children performed very well. Nevertheless, 2 (22.2%) parents indicated that their children poorly performed. The teachers suggested that it was very important to provide more training for them to enhance their capabilities in teaching learners with physical disabilities and the use of different materials used in the teaching/learning process. Learners recommended the
need for a plan to be provided with learning materials, support services and a subsidy of school fees which they claimed their families couldn’t afford. Parents of children with disabilities said it is more expensive to get what child’s needs to meet the needs of their children and suggested provision of supports either in kind or financial from different benefactors.

5.2 Conclusions

From the foregoing findings of the study, the following conclusions were drawn

1. Professional qualification showed a bias towards teaching regular learners but not in Special Needs Education. Lack of professional qualification in special needs education leads to inadequate teaching-learning process for learners with physical disabilities which results into low performance among learners.

2. Early intervention strategies to learners with physical disabilities were inadequate due to lack of professionally qualified personnel, inadequate apparatus and a proper education policy for learners with disabilities. Even though methods used to teach learners with physical disabilities were effective, they were not adequate to fully enhance the holistic development of learners with disabilities. Hence, appropriate early intervention strategies must be tailored to meet the unique needs of the learners with disabilities and their families. This is likely to address the problems of individual family members and the family as a whole.

3. Materials used by teachers in delivering early interventions were inadequate despite the fact that regular education teachers have improvised materials, models and adaptations to enhance academic performance of leaners. If a country like Rwanda cannot afford all these due to limited resources or lack of qualified personnel, paraprofessionals could be trained to support the early intervention programs. Childhood risks associated with poverty or similar adverse conditions,
such as lack of stimulation or excessive stress, affect brain development. The risks begin prenatally by influencing the foetal brain through exogenous factors that produce maternal stress. Thus, early child development (ECD) will influence many aspects of wellbeing, health, competence in literacy and numeracy, criminality and social as well as economic participation throughout the life experience of the learners.

5.3 Recommendations

The following recommendations were made based on the findings of the study which are as follows.

5.3.1 Recommendations to the Ministry of Education in Rwanda

1. There were inadequate trained teachers in delivering early intervention to learners with physical disabilities. Therefore, there is a need for the teachers to be given opportunities to pursue Special Needs Education courses to be able to accomplish their role in teaching learners with physical disabilities effectively. The Ministry of Education should organize seminars and workshop for regular education teachers on how and/or materials used to teach learners with physical disabilities.

2. The early intervention strategies used by teachers on learners with physical disabilities did not fully enhance the holistic development of children with physical disabilities in the schools under study. Hence, appropriate early intervention strategies on learners with physical disabilities should be implemented for future acquisition of skills to promote the self-dependence of learners with disabilities. This should be done by involving experts in all domains of SNE to visit schools to help the parents and teachers once disability is identified.
3. Materials for delivering early interventions were the most important requirement during the process. Hence there is need for a multidisciplinary approach in the provision of teaching/learning materials and enhanced collaboration among all professionals dealing with learners with physical disabilities. The Ministry of Education with other stakeholders should therefore increase and deploy more professionals qualified within SNE knowledge to schools of learners with physical disabilities. Materials used to teach learners with physical disabilities must also be improved in order to increase the ability of the learners.

5.3.2 Recommendations for Teachers

The findings indicated that even though teachers used different strategies in the implementation of early interventions, learners’ development levels were still very low. Therefore, teachers should be supervised towards the utilization of appropriate strategies in early interventions. This will provide oral instruction for learners with reading disabilities.

Teachers should also provide learners with frequent progress checks. This will assist in giving learners immediate feedback. Moreover, a good relationship between teachers and parents will be established.

5.3.3 Recommendations for Parents

Quality provision of early intervention service requires general efforts from not only teachers and school administrators but also parents. Thus, through educational awareness campaigns, parents should be encouraged to participate in early intervention programs in special schools in order to improve the academic performance of learners.
5.3.4 Recommendations for Further Research

Due to limited scope of this study, the researcher made the following suggestions on areas in which further research should be carried out.

1. This study only covered two districts (Nyanza and Huye Districts) which is only a small part of Rwanda. Therefore, the study would not be generalized for the entire country. Therefore a similar study should be carried out in other regions of the country in Rwanda in order to enhance the generalization of findings.

2. This study only collected opinions from teachers, students and parents. The study did not collect opinions from other stakeholders. Hence, further research is needed which focuses the perceptions and roles of other stakeholders towards early interventions on learners with physical disabilities.
REFERENCES


http://www.dds.ca.gov/EarlyStart/WhatsES.cfm

http://www.kise.co.ke/index.php?option=com_content&view=article&id=44&Itemid=133


Michael International Disability Alliance (IDA, 2012). *In The Developmental Systems Approach to Early Intervention*, edited by Suggestions for disability-relevant questions to be included in the list of issues for 62nd-63rd pre-sessional working group of the CRC Committee.


Rwanda Ministry of Education Early Childhood Development Policy, (2011)


Retrieved from: [http://www.marmotreview.org](http://www.marmotreview.org)

The Individuals with Disabilities Education Act Amendments, PL105-17 (1997) (codified as 20 USC §1431-§1445)


UNESCO (1997). Education Sector Monograph No 8


APPENDICES

APPENDIX I: QUESTIONNAIRES FOR THE TEACHERS

Instructions

I am conducting a study on ‘Influence of Early Intervention Strategies on Academic Performance of Learners with Physical Disabilities in Nyanza and Huye Districts, Rwanda.’ You are assured that your responses will be treated with strict confidence and the information you give will be used for this research only. There is no right or wrong answers. Do not write your name and you are requested to respond to all questions in each section.

Thank you.

Section one.

Tick your answers where necessary

1. Name of your school…………………………………………………………………………

2. Highest level of professional qualification

   P1 (A2)  
   Diploma  
   Bachelor’s degree  
   Masters  
   PHD  

3. Have you been trained in Special Education? Yes   no

4. How many years have you been teaching?
Less than one year  
1-5 years  
6-10 years  
11-15 years  
16-above  

**Section two**

5. A (i) are there any early interventions strategies you provided to learners with physical disabilities who join school for the first time? If yes mention them

................................................................................................................................................
................................................................................................................................................
................................................................................................................................................
................................................................................................................................................

(ii) If the answer above is yes, which other professionals do you work with in providing early interventions?

................................................................................................................................................
................................................................................................................................................
................................................................................................................................................
................................................................................................................................................

B. If there are no early interventions, is it necessary to provide them to learners?

If yes or no

why?................................................................................................................................................
................................................................................................................................................
................................................................................................................................................
Section three

6. (i) what are strategies do you use in teaching learners with physical disabilities?

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

(ii) Are there any tools used to teach learners with physical disabilities?

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

(iii) Do they influence the academic performance of the learners? if yes please explain how?
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

(iv) What suggestion would you make for improvement of academic performance for learners with physical disabilities?

........................................................................................................................................
........................................................................................................................................
APPENDIX II: QUESTIONNAIRES FOR LEARNERS / IBIBAZO

BY’ABANYESHURI

Instructions /Amabwiriza

I am conducting a study on ‘Strategies of Early Interventions on Academic Performance of Learners With Physical Disabilities in Primary and Secondary Schools in Two Selected Districts, Rwanda.’ You are assured that your responses will be treated with strict confidence and the information you give will be used for this research only. There is no right or wrong answers. Do not write your name and you are requested to respond to all questions in each section.

Thank you.

Ndimo gukora ubushakashatsi k’ “umumaro w’ingamba zifashishwa ku mitsindire y’abanyeshuri bafite ubumuga bw’ingingo mu gihe bahawe ubufasha bubanziriza imyaka yo gutangira ishuri mu turere twa Nyanza na Huye mu Rwanda.” Tubijeje kwita no kugirira ikizere ku makuru mutanga kandi akifashishwa muri ubu bushakashatsi gusa. Igisubizo cyose n’ingirakamaro, musabwe kutandika amazina yanyu kandi mugasubiza ibibazo byose bya buri kicro.

Murakoze.

Section one / Ikiciro cy a mbere

Tick your answers where necessary / Hitamo igisubizo cy’ukuri

1. State the level of your school a) primary b) secondary

Garagaza ikiciro wigamo a) abanza b) ayisumbuye

2. State the level of your class / Garagaza umwaka w’ishuri wigamo
3. State your gender / Garagaza niba uri Gabo cyangwa Gore

Female ☐ Male ☐

Section two / ikiciro cy a kabiri

4. (i) Did your family seek any help regarding to your disability before you went to school? / Umuryango wawe waba warigeze ugushakira ubufasha bujyanye n’ubumuga bwawe mbere y’uko ujya mu ishuri?............... (ii) If yes, what did they do? / Niba ari yego wakoze iki?

........................................................................................................................................................................
........................................................................................................................................................................
........................................................................................................................................................................

5. (i) Are there other people who helped in minimizing the effects of your disability before you joined school? / Haba hari abandi bantu bagerageje kugira icyo bakora k’ubumuga bwa we mbere yo kujya mu ishuri?................................. (ii) If yes, who are they? /Niba ari yego ni bande?

........................................................................................................................................................................
........................................................................................................................................................................
(iii) What did they do? / Bakoze iki?

...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................

6. (i) Do you think the help you got from family and others has contributed to your academic performance? Yes…. No…/ Utekereza ko ubufasha wahawe n’umuryango wawe n’abandi bantu haricyo wongereye ku myigire n’imitsindire yawe? Yego….Oya……………………………………………………………………

(ii) What other help would you need to improve your academic performance? / Ni ubuhe bufasha bundi wifuza yagufasha kuzamura imitsindire yawe?………………………………

...........................................................................................................................................
...........................................................................................................................................
APPENDIX III: QUESTIONNAIRES FOR PARENTS / IBIBAZO
BY’ABABYEYI

Instructions / Amabwiriza

I am conducting a study on ‘Strategies Of Early Interventions On Academic Performance Of Learners With Physical Disabilities In Primary And Secondary Schools In Two Selected Districts, Rwanda.’ You are assured that your responses will be treated with strict confidence and the information you give will be used for this research only. There is no right or wrong answers. Do not write your name and you are requested to respond to all questions in each section.

Thank you.

Ndimo gukora ubushakashatsi k’ "umumaro w’ingamba zifashishwa ku mitsindire y’abanyeshuri bafite ubumuga bw’ingingo mu gihe bahawe ubufasha bubanziriza imyaka yo gutangira ishuri mu turere twa Nyanza na Huye mu Rwanda.” Tubijeje kwita no kugirira ikizere ku makuru mutanga kandi akifashishwa muri ubu bushakashatsi gusa. Igisubizo cyose n’ingirakamaro, musabwe kutandika amazina yanyu kandi mugasubiza ibibazo byose bya buri kicro.

Murakoze.

Section one

Tick your answer where necessary./ Hitamo igisubizo cy’ukuri

1. State level of your education/ Garagaza urwego rwawe rw’imyigire

Primary /labanza

Secondary /layisumbuye

University / kaminuza
None / ntayo □

2. Indicate your age / Garagaza ikiciro cy’imyaka yawe

21-30 □
31-40 □
41-50 □
51-60 □
61-70 □
71-above □

3. What are your daily activities: / Nakahe kazi kawe ka buri munsi

farming/ umuhinzi □ Business / umucuruzi □
Employee / umukozi wa leta □

Section two / Ikiciro cy a kabiri

4 (i) Was your child born with his/her disability? / Umwana wawe yaba yaravukanye ubumuga?

Yes /Yego □ No / Oya □

(ii) If no, at what age did he/she become disabled? / Niba ari oya yamugaye afite imyaka ingahe?

(iii) What help did you seek or was given to your child when the disability was noted?/ Ni ubuhe bufasha mwaba mwarahaye umwana nyuma yo kubonako afite cyangwa agize ubumuga?
(iv) Who are the other people that were involved in providing services to your child? / Ni bantu ki baba barabafashije mu kwita k’umwana m’ubumuga bwe?

(v) What is class level of your child? Ni ikihe kiciro umwana wanyu yiga mo?
Primary/ abanza   secondary / ayisumbuye   

5. (i) How do you rate the academic performance of your child at school? / Ni uruhe rwego umwana wanyu atsindiraho mu ishuri?

Excellent/ruanitse   verygood/rushimishijecyane   good/ rushimishije   poor / rudashimishije   

(ii) What do you think would be done to improve the academic performance of your child? / Ni iki ukeka ko cyakorwa ngo imitsindire y’umwana wawe yiyongere?
APPENDIX IV: INTERVIEW GUIDE FOR PARENTS

1. What is your level of education? *Ni ikihe kiciro cy’amashuri ufite?*

2. How old are you? *Waba ufite imyaka ingahe?*

3. What are your daily activities? *Ukora iki mu buzima bwa buri munsi?*

4. Was your child born with disabilities? *Umwana wawe yaba yaravukanye ubumuga?*

5. What services and support did you provide to him/her after his/her birth? *Ni ubuhe bufasha yaba yarahawe akivuka?*

6. Were there other people who did something on the life of your child after birth? *Haba hari abandi bantu bagize icyo bamufasha k’ubumuga bwe?*

7. Where did your child go to school? *Ni he umwana yaba yarajyanywe mu ishuri?*

8. How is the academic performance of your child? *Atsinda ate mu ishuri?*

9. Do you think he/she is comfortable with materials used at school? *Utekereza ko uburyo n’ibikoresho byifashishwa kuriwe bimuhagije mu myigire?*

10. What would you propose to be done to enhance the academic performance of the child? *Ni iki wifuza cyakorwa ngo umwana wawe arusheho gutsinda neza mu ishuri?*
APPENDIX V: FOCUS GROUP DISCUSSION FOR LEARNERS

1. School

........................................................................................................................................

2. Boys.............. Girls......................... Total..........................

3. Are you provided with support sport services?

4. If the answer above is yes, what other people assist you in sport activities?

5. Are there services provided by the nurse in your daily life?

6. How do teachers assist you in accomplishing your tasks in both studies and exams?

8. Are you comfortable with strategies and materials used by teachers?

9. What challenges do you face in your academic performance?

10. What do you think would be done to remove those challenges in order to improve your academic performance?
APPENDIX VI: OBSERVATION CHECKLIST

The instrument used to find out strategies and materials used by teachers to help learners with physical disabilities when the lesson proceeds.

**General Information**

Date …………………… School ………………………………………

Class ……………….. Number of learners ………………………

1. Professional qualification of teacher……………………………..

2. Teaching experience (how many years) ………………………

3. Gender. Male □ Female □

**Lesson observation**

4. Does the teacher pay attention to the learners with physical disabilities?
   - Always □
   - Some time □
   - Rarely □
   - Very rarely □

5. How teacher organize learners in a lesson?
   - Individually □ Pairs □ Groups □ Whole class □

6. How are the following adequate in assisting the learners with physical disabilities
   - A) Very adequate  B) adequate  C) inadequate  D) not available
(i) Time to assist learners
(ii) Time to mark learner’s book
(iii) Group work in class

7. Availability of materials and how they are used to assist learners with physical disabilities in class.

<table>
<thead>
<tr>
<th>Resource materials in class</th>
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APPENDIX VII: MAP OF RWANDA DISTRICTS

Nyanza district

Huye district
APPENDIX VIII: APPROVAL OF RESEARCH PROPOSAL

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

DATE: 13th December, 2014
REF: E55EA/23691/13

FROM: Dean, Graduate School
TO: Mr. Jean Twagirimana
     C/o Special Needs Education Dept.
     KENYATTA UNIVERSITY

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that the Graduate School Board at its meeting of 10th December, 2014 approved your M.Ed. Research Proposal subject to removing the words “Assess the” from the title.

Thank you.

JOHN M. ODONGI
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Special Needs Education Dept.

Supervisors:

1. Dr. Nelly W. Otsibe
   C/o Special Needs Education Dept.
   KENYATTA UNIVERSITY

2. Dr. Fransiscah I. Wamicho
   C/o Special Needs Education Dept.
   KENYATTA UNIVERSITY

JMO/cao
APPENDIX IX: RECOMMENDATION LETTER

UNIVERSITY OF RWANDA
COLLEGE OF EDUCATION
OFFICE OF THE PRINCIPAL

17th December 2014
Ref: 01/P-CE/GKN/fb/2014

Hon. Minister of Education
P.O.Box 622
Kigali – Rwanda

Hon. Minister,

RE: Recommendation for Mr. Jean Twagirimana to conduct a research study in Rwanda

The above mentioned is a Masters Degree candidate at Kenyatta University, Kenya. He wishes to conduct a research entitled “Influence of Early Interventions on Academic Performance of Learners with Physical Disabilities in Nyanza and Huye Districts, Rwanda”.

Mr. Jean Twagirimana has requested for affiliation with UR-College of Education during the period of his research and we have agreed to support his request on condition that on completion of his research, he will deposit a copy of his thesis with UR-College of Education. During this period he will be closely followed by Dr. Evariste Karangwa, the Dean of School of Inclusive and Special Needs Education.

We therefore request for permission on his behalf to access data sources in his field of survey. Attached, please find a copy of his CV, a research proposal and other related documents.

Any assistance accorded to him will be highly appreciated.

Yours sincerely,

Prof. George K. Njoroge
Principal

CC.
- Vice Chancellor, University of Rwanda
- Director General of Science, Technology & Research, MINEDUC
- Dean, School of Inclusive and Special Needs Education – CE

EMAIL: principal.ce@ur.ac.rw
P.O. Box 5039 Kigali
WEBSITE: www.ur.ac.rw
APPENDIX X: RESEARCH AUTHORIZATION

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
        dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: E55EA/23691/13
Date: 4th March, 2015

The Principal Secretary,
Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MR. JEAN TWARIGIMANA - REG. NO. E55EA/23691/13

I write to introduce Mr. Jean who is a Postgraduate Student of this University. He is registered for a M.Ed. degree programme in the Department Special Needs Education in the School of Education.

Mr. Jean intends to conduct research for a thesis Proposal entitled, “Influence of Early Intervention on Academic Performance of Learners with Physical Disabilities in Two Selected Districts, Rwanda”.

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

JMO/cao
APPENDIX XI: PERMISSION TO CARRY OUT RESEARCH IN RWANDA

[Image of the document]

REPUBLIC OF RWANDA

MINISTRY OF EDUCATION
P.O.BOX 622 KIGALI

Re: Permission to Carry out Research in Rwanda - No: MINEDUC/S&T/284/2015

The Permission is hereby granted to Mr. Jean TWAGIRIMANA, MSc Student in Special needs Education at Kenyatta University, Kenya, to carry out research on: “Influence of Early Intervention on Academic Performance of Learners with Physical Disabilities in Nyanza and Huye Districts, Rwanda”.

The research will be carried out in selected Primary and Secondary Schools located in Nyanza and Huye Districts of Southern Province.

The researcher will need access to Academic results of learners in those selected schools of study. He will administrate questionnaires addressed to Teachers, Parents and Learners. He will also conduct the focus group discussions with Parents and Learners.

The period of research is from 08th January, 2015 to 31st March, 2015. It may be renewed if necessary, in which case a new permission will be sought by the researcher.

Please allow the above mentioned researcher, any help and support he might require to conduct this research.

Yours sincerely,

Marie-Christine GASINGIRWA (Ph.D)
Director General,
Science Technology and Research
Ministry of Education
APPENDIX XII: APPROVAL TO CONDUCT RESEARCH IN RWANDA UNDER THE PROJECT TITLE.

REPUBLIC OF RWANDA

MINISTRY OF EDUCATION
P.O.BOX 622 KIGALI

Mr. Jean TWAGIRIMANA
MSc Student
Kenyatta University
Kenya
Email: jeny93@gmail.com

RE: Approval to Conduct Research in Rwanda under the Project Title: “Influence of Early Intervention on Academic Performance of Learners with Physical Disabilities in Nyanza and Huye Districts, Rwanda”

I am pleased to attach a copy of research clearance, which has been granted to you to conduct research on the above title.

I wish to remind you that the research permit number should be cited in your final research report. The research should be carried out under affiliation of the University of Rwanda-College of Education (UR-CoE), under supervision of Dr. Evariste KARANGWA, UR-CoE.

You are requested to submit the report after completion of your research activities to the Ministry of Education of Rwanda.

I wish you success in your research.

Yours sincerely,

Marie-Christine GASINGIRWA (Ph.D)
Director General, Science Technology and Research
Ministry of Education

Cc.
- Hon. Minister of Education
- Hon. Minister of State in Charge of Primary and Secondary Education
- Hon. Minister of State in Charge of TVET
- Permanent Secretary, Ministry of Education
- Dr. Evariste KARANGWA, UR-College of Education
### APPENDIX XIII: APPROVAL FOR ACADEMIC RESULTS

**School:** G.S Gатаagara

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**Results for Rwanda Advanced Certificate of Education Examination 2014**

**Option:** Mathematics-computer Science-Econom

*Wednesday, February 18, 2015*
## Results for Rwanda Advanced Certificate of Education Examination 2014

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**OPTION:** Mathematics-computer Science-Econom

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### Results for Rwanda Advanced Certificate of Education Examination 2014

**SCHOOL:** G.S GATAGARA  
**OPTION:** Mathematics-computer Science-Econom

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