



COLLEGE OF EDUCATION
UNIVERSITY of
RWANDA

SCHOOL OF SPECIAL NEEDS EDUCATION

PERCEPTIONS ABOUT SOCIO-ACADEMIC OUTCOMES OF FUNCTIONAL CURRICULUM AMONG LEARNERS WITH COGNITIVE AND DEVELOPMENTAL DELAY IN SPECIAL SCHOOLS OF HVP GATAGARA
CASE STUDY: HVP GATAGARA AT GIKONDO SCHOOL AND NDERA SCHOOL IN 2015 - 2021

By:

MUNYENTWARI OLIVIER

220018051

The work presented to School of Inclusive and Special Needs Education in predisposed of the exigency of the Master's Degree in Special Needs Education

University of Rwanda

College of Education

Supervisor: Dr. HABINSHUTI GONZAGUE

March, 2022

Certification

I attest that the here thesis in title of “PERCEPTIONS ABOUT SOCIO-ACADEMIC OUTCOMES OF FUNCTIONAL CURRICULUM AMONG LEARNERS WITH COGNITIVE AND DEVELOPMENTAL DELAY IN SPECIAL SCHOOLS OF HVP GATAGARA

CASE STUDY: HVP GATAGARA AT GIKONDO SCHOOL AND NDERA SCHOOL IN 2015 - 2021” is a thesis of MUNYENTWARI Olivier, presented in predisposed of the exigency of the Master’s Degree in Special Needs Education

Signature.....

Supervisor: Dr. HABINSHUTI Gonzague

Date:/...../ 2022

Proclamation & Holding

I, MUNYENTWARI OLIVIER do herewith proclaim that this thesis is my own work and was not presented to any Institution or a University for any award or any publication.

Signature: Date:/...../...

MUNYENTWARI OLIVIER

No character of this thesis will be replicated, kept over repossession way or expand in any user in the absence of the author’s authorisation or permission from the University of Rwanda, College Of Education.

Dedication

To my parents,

To my beloved wife,

To my children,

To my relative and friends.

Acknowledgement

First and fore more, thanks to God the supreme, from heavy guide, comfort, the courage and strength that he has rendered me without which I could not have completed.

I express my grateful thanks to all whom we involved in steps for the achievement of this study.

My sincere thanks and appreciation go too particularly to Lecturers Dr HABINSHUTI GONZAGUE who despites much of his occupation read and reread various drafts of this work and put his valuable time into correction in order to give shape to the present study

My gratitude goes to all my university lecturers who prepared me for this study.

I also thank all my correspondents who spared their most valuable time in completing the questionnaires and attending to the interviews, which enabled me to collect the data corresponding to my study.

Thanks again to all those whose contribution is appreciated to this study in different ways, my God replenish tenfold for their kindness.

Finally, I thank any person who directly or indirectly contributed materially or morally to achievement of this work.

MUNYENTWARI OLVIER

The Abstract of the study

Significant target for present research might inquiring or determining perceptions about the socio-academic outcomes of functional curriculum to learners with cognitive and developmental delay.

Sixty eight (68) participants were taken for sample to contribute in this study. Their ages were in the range of 17 to above 32 years old. Sample included learners for schools and administrative staff in schools of HPV GATAGARA- NDERA and HPV GATAGARA- NDERA.

Collection of data was done using questionnaire, 2 groups for interview were piloted with participants.

The results proposed that the functional curriculum contributes the individual support services like delivering the learning opportunity in order to prepare their future lives.

The functional curriculum then offers the knowledge and skills which help get them ready for not only paid jobs but also volunteer works and provide the independent living skills in their society. The functional curriculum provides social skills and Independent living skills. A functional curriculum is presumed to include functional academic content, skills for financial aspects, long life living, transportation, vocational education, access to community, skills to social and relationships, Independent living skills & self-determination that prove a successful academic performance outcome.

The students who graduated from functional curriculum, present the hope of good future life due to their successful academic performance.

The design of functional curriculum is shaped in the way that every educator is facilitated to find out which best orientation of the appropriate supports for each group of students and this guarantee the improvement of academic performance of them.

The learners who follow functional curriculum expect: Simple Calculation and language skills, financial skills and independent daily living, small and soft businesses creation, social-skills building or social/relationships, and self-determination and social first aid acquisition, and societal living skills community access

Table of Contents

Certification.....	ii
Proclamation & Holding.....	iii
Dedication.....	iv
Acknowledgement.....	v
The Abstract of the study.....	vi
Abbreviations and Acronyms.....	xii
CHAPTER 1: GENERAL INTRODUCTION.....	1
1.0. Introduction to the chapter.....	1
1.1. Background for this study.....	1
1.2. Statement of the research problem.....	7
1.3. Purpose and objectives of the study.....	8
1.3.1. Purpose of the study.....	8
1.3.2. The specific objectives of the study.....	8
1.3.3. Research questions.....	8
1.4. Significance of the study.....	8
1.5. Scope of the study.....	9
1.6. The limitation of this study.....	9
1.7. Definition of key terms.....	10
1.7.1. Functional curriculum.....	10
1.7.2. Academic performance.....	10
1.7.3. Cognitive and developmental delays.....	10
1.7.4. Impairment.....	10
1.7.5. Disability.....	10
1.7.6. Special education.....	10
1.7.7. Special school.....	10
1.8. Theoretical framework.....	11
1.10. Conceptual framework.....	16
CHAPTER TWO: LITERATURE REVIEW.....	17
2.0. Introduction.....	17
2.1. THEORETICAL REVIEW.....	17
2.2. THE RELATED LITERATURE REVIEW.....	17
2.2.1. The Vocational Function of a Functional Curriculum gives Skills to be employed....	18

2.2.2. Functional curriculum provides students the participation in socio- community life.	20
2.2.3. The Design Of Functional Curriculum Clarifies The Effective Orientation For Educators To Guarantee The Desired Academic Performance.....	21
Activities of Daily Living (A.D.L.....	26
2.3. The gap in literature.....	27
CHAPTER THREE: RESEARCH METHODOLOGY.....	28
3.0. Introduction.....	28
3.1. Research design.....	28
3.1.1 Study setting.....	28
3.1.2 The population.....	28
3.1.3 Sampling strategies and sample size.....	29
3.1.4 Research instruments.....	31
3.2. Position of the researcher.....	32
3.3. Validity and reliability.....	33
3.3.1 Validity.....	33
3.3.2 Reliability.....	33
3.4. Ethical Considerations.....	34
CHAPTER FOUR: PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA.....	35
4.1. Introduction.....	35
4.2. QUANTITATIVE DATA.....	35
4.2.1. Demographic Data of the respondents.....	35
4.2.2. THE VOCATION CONTRIBUTION OF FUNCTIONAL CURRICULUM VIRUS ACADEMIC PERFORMANCE.....	38
4.2.2.1. The individual support services towards future lives.....	38
4.2.2.2. The functional curriculum engages learners in basic competences.....	39
4.2.2.3. The components of a functional curriculum towards academic performance outcome.....	39
4.2.2.4. The graduated from functional curriculum, present the hope of performance.....	41
4.2.2.5. The outcomes of learners who graduate for functional curriculum.....	41
4.2.3. THE FUNCTIONAL CURRICULUM OFFERS KNOWLEDGE AND SKILLS TO ACCESS COMMUNITY.....	42
4.2.3.1. The functional curriculum offers students with knowledge and skills to social life... ..	42
4.2.3.2. The functional curriculum provided the social skills and independent living skills....	43
4.2.4. USAGE OF FUNCTIONAL CURRICULUM CLARIFIES A GOOD ORIENTATION.....	44

4.2.4.1. Adaptability of functional curriculum in educational process.....	45
4.2.4.2. Educational Resources Accessible In Functional Curriculum Increase Performance	45
Adapted Teaching Methods of Functional Curriculum Increase the Academic Performance of Learners with Cognitive and Developmental Delay.....	46
4.2.4.4. Adapted Content of Functional Curriculum Increase Performance.....	46
4.2.4.5. The Use of Instructions helps to Increase Academic Performance.....	47
4.2.4.6. The design of functional curriculum towards the best orientation of performance..	48
4.3. QUALITATIVE DATA.....	48
4.4. Summary of qualitative results.....	49
CHAPTER FIVE: SUMMARY, DISCUSSION, CONCLUSION, RECOMMENDATIONS.....	51
5.0. Introduction.....	51
5.1. Summary of the study.....	51
5.1.1. Vocational function of a functional curriculum provides students skills that help to be employed;.....	51
5.1.1.1. Contribution of functional curriculum to preparation of future life.....	51
5.1.1.2. The outcomes of learners who graduate for functional curriculum.....	52
5.1.2. Significant contribution of functional curriculum on access to socio-community life.....	53
5.1.3. Usage of Functional Curriculum in the Special Schools in Rwanda.....	54
5.2. DISCUSSION.....	55
5.3. CONCLUSIONS.....	57
5.4. RECOMMENDATIONS AND SUGGESTIONS.....	58
5.4.1. Recommendations to school management.....	58
5.4.2. Recommendations to educators.....	59
5.4.3. Recommendations to the Ministry of Education.....	59
5.4.4 Recommendations for further research.....	59
REFERENCE.....	61
APPENDIX.....	64

LIST TABLES

Table 1: The target population of the study, academic year 2015 - 2021.....	29
Table 2.Sampling table.....	30
Table 3. Learners need the individual support services.....	38
Table 4. Components of functional curriculum.....	39
Table 6. The graduated students present the hope of good future life.....	41
Table 7: The graduated from functional curriculum.....	42
Table 8. The functional curriculum offers knowledge and skills for paid jobs.....	43
Table 9. The social and Independent living skills towards employers.....	44
Table 10: adaptability of functional curriculum.....	45
Table 11. The accessible teaching and learning resources increase the performance.....	45
Table 12: The adapted teaching methods improve the performance.....	46
Table 13. The adapted content towards academic performance.....	47
Table 14. The instructions used by teachers help to perform well.....	47
Table 15. The design of functional curriculum is keen to best orientation.....	48

LIST OF FIGURES

Figure 1: Interaction of variables.....	16
Figure 2. Age and gender of respondents.....	36
Figure 3. Group of education.....	37

Abbreviations and Acronyms

% Percentage

& And

NCPD National Council of persons with Disability

CWDs Children with disabilities

DPO Disabled people organization

EDPRS Economic Development and poverty reduction strategy

ESSP Education sector strategic plan

IDEA Individual with disabilities education act

MINEDUC Ministry of Education

No Number

P Page

ICT information and computer Tools

PWDs People with Disabilities

ID Intellectual Disability

REB Rwanda Basic Education Board

OSDE Oklahoma State Department of Education

SPSS Statistical package for social sciences

WHO World Health Organization

CHAPTER 1: GENERAL INTRODUCTION

1.0 .Introduction to the chapter

This chapter presents a background for this study, statement for research problem, objectives of a study, questions of research, and significance for a study, scope & limitation, definition for key terms.

1.1. Background for this study

Children and adults with special needs are one of the target groups in the Education for All.

This was clearly laid down at the Jomtien Conference (Salamanca, 1994) & most recently in Dakar framework for Action 2000 (Mberimana, 2018). One curriculum advocated for students with cognitive and developmental delay is a functional curriculum (EC Bouck, 2012). Even though literally, a functional curriculum is related to students with multi disabilities, like cognitive and developmental delay. Researchers have been in favour of usage of the program of functional curriculum with other population including in students with higher incidence disabilities (Ganiah I. Ain, 2018). This curriculum in its universal design and its nature of usage, it is implemented in the way that teachers or educators get what the students with cognitive and developmental delay are lacking in their daily activities.

It is in this idea that who follow this functional curriculum should be taught the content in the relationship with functional life skills that are in place to develop and create or deliver the ability of combining knowledge, skills and attitude & values to live in the local community and in the society in which the students live or will live. The curriculum also provide the opportunity to the students with cognitive and developmental delay to acquire all necessary skills to work because all the best become from working. This means that none should be developed without working. The functional curriculum is designed referred that the students get funny in a comprehensive or inclusive local community in where they live.

The schools should become child friendly at every corner of education process. The aspect or the shape of the education process is due to the design of the curriculum being followed the reason why functional curriculum is included in such skills to basic needs of students with cognitive and developmental delay.

The functional curriculum should not only include basic needs but also the application of academic core subjects like calculation and languages.

The functional curriculum should design the vocational education training to provide technical and vocational practices that help people to create jobs, local community access, the basic dairy living needs, financial education, how to make own cleanliness as the independent live, how to keep in any transportation cases within self-determination. The students of cognitive and developmental delay and others with intellectual disability have to be taught how relations is between the members of family and other local community (social/ relationship).

Normally, the general curriculum miscarries to deliver students with cognitive and developmental delay and other kinds of students with intellectual challenges the chance or the opportunity to grow and develop competence needed to be fruitful in the life when they cover the program in the curriculum designed for them.

Hence, the functional curriculum is characterised by considering teaching students with cognitive and developmental delay, as a main focus of giving the capacity or the ability skills help them become productive supporters of their families and the society, and raising positive academic performance rate in their real life.

At the end of academic education process while the absence of the ancient researches related to the results or the impact of functional curriculum with learners with cognitive and developmental delay in commonly analysis proposes good results. There are some researchers and studies that showed that we should expect the positive outcome and the good impact at the post school period. Among of these researches, we should highlight the one which point out learners with disabilities who played a part in Youth Transition Program, that intended to give life skills, including in what help finding jobs earning wages, works experience, personal or independent life skills , personal skills; functional academic skills; and self- determination), experienced increased graduation rates, higher engagement in postsecondary outcomes of employment or education, and higher wages (EC Bouck, 2012).

In other survey in Australia noted students with disabilities who graduated from high school (J Kregel, 2020). They matched pupils' reactions that joined transition projects, by where the

curriculum focused on educating vocational skills, access to community or access on living, functional academics, recreation and leisure, the skills that they will use during transportation periods and personal management, compared to those who did not get any participation in this program activities.

Finally, EC Bouck, (2014) in his research targeted the students with multiple incidence disabilities, put forward students who benefited in and after being taught through a functional curriculum.

The implementation or improvement of a functional curriculum must respect the personal and individual choice of each student and arise an ability of decision making. The functional curriculum detects the adapted content to be taught and its results (outcomes).

Then, using the functional curriculum guide, educators individualize the student's program in expectation of maximum outcomes that build on strengths and opportunities, and address individual needs. In the execution of the curriculum, it is important that educators emphasis on the transfer and generalization of knowledge and skills to everyday life situations leading to support their daily decision making (Lisa Holland and Kendel St. John, 2021).

In many countries on the whole wide world, the functional curriculum has been placed in the education systems and has the different status accordingly to opportunity being taken from this curriculum.

In the study conducted in States of America, Bree Jimenez, Ya-yu Lo & Alicia F Saunders (2012), established the status of functional curriculum in this country. They confirmed that the curricula for students with developmental disabilities have lifted the focus from working on functional skills to line up with the general education curricula for typically developing.

This means that at this case, the students with multi disabilities did not have supports like other students they share the common studies in the general classrooms while due to their individual challenges or limitation in teaching and learning process. These students could be taken at the first time being placed the emphasis in order to identify what challenges or limitation they face in their learning process.

It is empirically supported to help students with severe disabilities generalize academic content, as well as daily life skills. Further, experiential learning is thought to be essential for developing social skills (Elizabeth Schmidt, Megan Dougherty, Natalie Robek & Carolyn M.Somerich, 2021).

Through these study, the use of functional curriculum made a significant change in each level of education in either general or special education.

Because, years ago, it is found in general studies or general education that students with disabilities are not well equipped for adult life considering their individual needs and make them able to be their long life problem solvers, within this problem. With the educational policy, addressing the individual academic needs of students with special needs has been shifting from both development of appropriate curricula to functional curricula/curriculum (FC), and standards-based curricula/curriculum (SBC) (Ganiah I. Ain, 2018).

Considering the baseline of academic performance and the recent impact of educational system from these schools of USA before using functional curriculum and after the usage of it, it is seen that the outcome is being improved due to the design of adaptive and inclusive curriculum in the school. The baseline is changed to the condition of the students and increasing percentage rate of scores through different tests and in the impact of this curriculum in education process nowadays.

SLs + GNs condition for two participants. Furthermore, acquisition of science content was maintained over time for all participants. Implications for research and practice are discussed change in level from baseline to the SLs condition for all three participants and additional slight improvement in scores during the SLs + GNs condition for two participants. Furthermore, acquisition of science content was maintained over time for all participants. Implications for research and practice are discussed change in level from baseline to the SLs condition for all three participants and additional slight improvement in scores during the SLs + GNs condition for two participants. Furthermore, acquisition of science content was maintained over time for all participants. Implications for research and practice are discussed change in

level from baseline to the SLs condition for all three participants and additional slight improvement in scores during the SLs + GNs condition for two participants. Furthermore, acquisition of science content was maintained over time for all participants. Implications for research and practice are discussed

change in level from baseline to the SLs condition for all three participants and additional slight improvement in scores during the SLs + GNs condition for two participants. Furthermore, acquisition of science content was maintained over time for all participants. Implications for research and practice are discussed

The findings from the research made in Europe on Curriculum research for students with intellectual disabilities based on Curriculum content identified that it is critically to easily find out the content to teach. For students with intellectual disabilities (ID), the choice of educational content is crucial in a life span perspective (Goril Moljord 2017). This means that up to now, there is few researches that confirm the large opportunity of engaging this group of learners. The solution for the curriculum is yet thin in the use of approaches that encourage and improve the quality teaching of them.

The same research above continued to make a comparison between cognitive academic articles and functional life skills articles, where by the functional life skills articles are still stepping up at the chat of the education process of this country.

It is well understood that the literature is intensive to the cognitive academic reading. This means that the cognitive academic is much excessive to the European education for years in the way that we may conclude that it was their main educational system or approach, while functional life skills are new education being implemented due to its new understanding.

So, in this country, when research on curricula that provide functional life skills becomes inactive, the policy for the curricula could not give students with ID the skills necessary for social and practical adaption in their communities. A broad connection to normative curricular contexts is crucial to analyse and guide curricular choices.

In the research done by Bouck, (2015) in Kenya, he shows that the functional curriculum misplaced favour, it has also weakened its use of practices due to recent decentralised

policy pushing inclusion, and so far it still rests a significant option for secondary students with disabilities

Functional curriculum in Kenya prove and work in place of curriculum models designed to educate functional life skills in order to make access the child friendly schools in order to meet and attract the students basic needs on how to live, how to make a work appreciated.

The functional curriculum come as the results from the trust of attracting the students' attention while the ancient general curriculum did not take the part of reflecting the skills necessary for post-school positive outcome or positive impact.

In their curriculum focusing in life management includes solicitations of core subject as academic aspect, educating vocational courses, access to community, daily living skills, finance, independent or individual living, skills to transport cases, social/relationships, and self-determination as main content of this curriculum being taught to the students with cognitive and developmental delay.

Unfortunately, this curriculum is not well applied in all the style of education process and all level of education system because many studies are still being made in the area of secondary special education.

The problem still in general education is to equilibrate academic, functional, and social skills conferring to the participants' individual needs in ways that are meaningful and purposeful to their lives.

In Rwanda, Rwanda has placed emphasis on curriculum reform in order to phase out the old curriculum that the education is based on knowledge (knowledge based curriculum) to the new curriculum that the education is based on competence (competence based curriculum).

The aim is to develop students' independent, lifelong learning habits; appropriate skills and knowledge; and applications to real-life situations (Ernest Ngendahayo MEd & Helen Askill-Williams PhD, 2016).

The competence based curriculum should be the curriculum that gives the maximum opportunities to the learners with different challenges accordingly to their engagement in their dairy learning. This curriculum has to develop both basic and generic competences that will help the learners in critically thinking on their future life in the society. It not only that but also the cross cutting issues that will help them to get the required skills for problem solving within their long life living.

On other hand, with my views, learners with moderate and severe cognitive and developmental delay are able to learn but not effectively when they are kept in the same condition as other learners in ordinary schools. They should have a good academic performance for preparing their future life if they are given appropriate supports relating to individual needs and when they follow effectively their appropriate curriculum as known as functional curriculum as the solution of letting the learners with moderate and severe cognitive and developmental delay to improve the academic performance. The curriculum should be adaptive to the level and to the types of disabilities. Functional curriculum should not only be implemented in special schools of Rwanda but also in general schools where moderate and mild intellectual challenges are included in accordingly to the individual needs of them in order to improve their academic performance. It is in this reasons we have to conduct this scientific research for investigating the relationship between functional curriculum and academic performance among learners with moderate and severe cognitive and developmental delay in special of Gatagara and Ndera schools of Rwanda.

1.2. Statement of the research problem

In general and special schools, students with cognitive and developmental delay need the teaching that leads to exceed the expectation from the basic themes like numeracy and literacy, as one part of a functional curriculum that state standards required.

In this functional curriculum, teaching and learning process should avail supports towards vocation, building skills to social life, education to finance and capacity to personal or

independent daily living that could help learners with disability, especially those with cognitive and developmental delay being accessible and inclusive in teaching and learning process in order that they become long life living problems solvers in their local community as its outcomes.

Although the good performance of functional curriculum for several years ago, the analysis noted that the attention to a functional curriculum is being reduced accordingly and less applied to general education for most of countries due to inaccessibility of schools and attention to the policies of educational practice, the way curriculum is designed due to lack of individual challenges identification, lack of enough special schools that accommodate the learners with cognitive and developmental delay

This is clearly meaning that the educational policy in Rwanda is strengthening and focusing much more on the accessibility on physical infrastructure in order to accommodate the students with different disability through the inclusive curriculum nowadays

Then, with my views, in Rwanda functional curriculum is least applied because of many factors that include in lack of the knowledge by teachers and schools, lack of enough physical infrastructures, lack of appropriate adjustments of school programs and lack of enough adequate materials therefore there is a few learners with disability achieved the level of higher learning, where by the world, 95% of learners with special needs studied in the same schools with other normal students in regular schools; only 3% studied in separate schools for students with disabilities.

That is why my study came in to show a relationship between functional curriculum and academic performance of learners with cognitive and developmental delay.

1.3. Purpose and objectives of the study

1.3.1. Purpose of the study

The general objective of this study is to determine perceptions about the socio-academic outcomes of functional curriculum among learners with moderate and severe cognitive and developmental delay in special school of Gatagara and Ndera of Rwanda

1.3.2. The specific objectives of the study

Specific objectives here below were taken in consideration in conducted well my research:

- To analyze whether vocational function of a functional curriculum provides students with cognitive and developmental delay skills that help them to be employed;
- To testify whether the functional curriculum provides students with cognitive and developmental delay the participation in socio- community life;
- To identify the usage of functional curriculum that clarifies the effective orientation for educators to adapt students with cognitive and developmental delay that guarantees the desired academic performance of students with cognitive and developmental delay as their adapted curriculum.

1.3.3. Research questions

These questions were taken in consideration to guide this research:

1. Does the vocational function of a functional curriculum provides students with cognitive and developmental delay skills that help them to be employed?
2. Does the functional curriculum provide the skills that enable learners with cognitive and developmental delay to participate in socio-community life?
3. Which usage of functional curriculum that clarifies the effective orientation for educators to adapt young people with cognitive and developmental delay that guarantee desired academic performance of students with cognitive and developmental delay as their adapted curriculum?

1.4. Significance of the study

My research was important not only attracting my attention to find which relation is between the adaptive curriculum and academic performance but also be significant to me by myself since it is predisposed of the exigency of the Master's Degree in Special Needs Education. This research helped to find out how to increase in attention of functional curriculum in practice that leads to eradicate the poorer post school outcome or negative implication for students.

The findings from this research may be important to the teachers, parents and stakeholders because data may help them to improve effective development of basic competences and helping learners to become the own problems solving instead of being a burden to the society within the good engagement of learners with moderate and severe cognitive and developmental delay.

My research may help the Ministry of education in putting into practice education for all, by improving the implementation of functional curriculum as the improvement of academic performance of learners with moderate and severe cognitive and developmental delay in Rwandan schools.

My research may also help the management of Rwandan special schools in terms of guidance to policy designers on problems being considered when designing the ongoing policies, especially policies to learners with cognitive and developmental delay about teaching so that they can have a better life.

1.5. Scope of the study

This work was piloted in a selection of two special schools; GATAGARA GIKONDO in KIGALI city, in KICUKIRO District; and GATAGARA NDERA in KIGALI city in GASABO District. These two schools were selected because they are among of special schools here in Rwanda which have mission of teaching learners with intellectual challenges include in learners with cognitive and developmental delay and where the functional curriculum are applied in. The study was delimited to learners with moderate and severe cognitive and developmental delay. The research considered the period of six years from 2015 to 2021.

1.6. The limitation of this study

The research was limited to two special schools GATAGARA GIKONDO and GATAGARA NDERA only due to financial aspect and both students and educators of these schools.

1.7. Definition of key terms

1.7.1. Functional curriculum

In this study, functional curriculum may be understood as the curriculum whose content and facilities are centred to provide the required skills towards independent life, the education that focuses on vocational ability or skills, communication skills and social ability.

1.7.2. Academic performance

In this study an academic performance is explained as the positive result or positive outcome of education expected to which a learner, educator or establishment has attained to their academic objectives.

1.7.3. Cognitive and developmental delays

Cognitive and developmental delays describe a congenital (present at birth) or an early- acquired cognitive impaired.)

1.7.4. Impairment

In this study, impairment has the meaning of any part of the body that lost its capacity of functioning. It means that any part of the body may have inability or weakness of working effectively.

1.7.5. Disability

Disability in this research expresses any limitation of opportunities of functioning to perform any activities through the impairment. This means that it is impairment that can prevent the equal normal character to the others without disabilities in society.

1.7.6. Special education

In this research, special education refers to exceptional teaching and learning process that contains the skills that respond to the problems regarding to individual needs. The special education can be considered as the opposite of general education, it is reserved to the students with special education needs.

1.7.7. Special school

Special school is considered as the separate schools reserved to accommodate students with special education needs. This means that it is a school in which has a particularity with certain needs. The special school is also taken as the mainstream school.

1.8. Theoretical framework

The theoretical frame work the organization of ideas can clarify the reason why the problem being researchable. It the collection of the ancient ideas and the observation or views from the other researchers regarding the present problem. This research is based on two theories in which have to describe and support the importance of functional curriculum towards the academic performance of learners with cognitive and developmental delay.

1.8.1. Learning theories.

Jean Piaget, Lev Vygotsky, B.F. Skinner, Ivan Pavlov, Carl Rogers, John B. Watson and Abraham Maslow and others are the main proponents of these theories. This learning can be

explained as a practice that gets individual and ecological capabilities and effects in terms of securing, inspirational or revising one's behaviour, knowledge, skills, world views & attitude and values. These theories including in, are more considered as learning theories for 21st Century skills. In this century, adaptability & flexibility, initiative & self-direction, leadership & responsibility, productivity & accountability, social & cross-cultural skills that are Life/career skills, were at the top to education.

The basic idea of learning theories go with the category of theories included in below;

The first basic idea concerns with behaviourism developed by B.F. Skinner, Ivan Pavlov, and others, should be the consistence of reinforcement, application, and acquisition in behavioural change and association between incentive from the local environment and recognizable answers of the person.

Teachers' attitudes are the key factors that can motivate the learners to express their views through the means of engagements to achieve the objectives set.

The teachers should create positive conducive learning environment in order to create the good atmosphere while teaching learners with cognitive and developmental delay. So, the teachers are the ones who have to find out which measures and which strategies applied to learners in order that the students show their views and make them the sources of learning.

The good condition or the bad condition that the teachers put the students while teaching and learning process, influence the participation and the success rate of the students' objectives achievements. The reason why, we say that "no failure to learners but failure the teacher".

Students with cognitive and developmental delay like the other students with special needs always needs the individual intervention from the different supports. Among of these interventions, we must highlight the direct instructions as the first intervention that the students with cognitive and developmental delay have to emphasize while teaching and learning process.

The behavioural analysis is the second intervention being taken in consideration in education in order to help learners with cognitive and developmental delay have met the expectations from the inclusive settings. The activities or all the objectives set should be assessed, evaluated and

making feedback in order that the executer find out the achievement of any objectives set. All of the above mentioned, are the best interventions that we could place to the learners with cognitive and developmental delay in the interest of their assessments placement.

The second basic idea of cognitivism by Jean Piaget is that cognitive theory focuses on not only understanding how children obtain knowledge, but also understanding the nature of intelligence

This means that cognitive theory has the role of giving meaning to the knowledge and give the opportunity to the learners to be organized by themselves and relate new information to thinking on knowledge acquired and kept in the memory or stored in it. It also means that cognitive theory undergoes the approaches that emphasize the processes of thinking and their usage in learning, where highlighted memory as the main place in which all the information captured , thinking, reflection and abstraction which are all needed in teaching and learning process. In learning process, inclusive education should rely on the explications of constructivism practices which highly focuses on process of mental information and students learning interactions towards learners with cognitive and developmental delay.

The third two main basic ideas of constructivism by Levi Vygotsky are learning includes in learners- Centred , task- based, hand and mind on activities(Shi,2016). This means that constructivism theory focus on letting students be the source of the knowledge and being the source of content.

The educators should give to the students the time for critically think on what is being done to them, instead of giving what is already done. The students should progressively perform the achievement of the activities by being engaged actively in learning and teaching process. The educator should not become a teacher by himself but become a facilitator of the learners' activities in the classrooms. The students are not empty, they have disorganised and disordered ideas, the reason why main role of educators is normally organising and coordinating what the students know as prior knowledge.

classroom activities based on the constructivism should provide scaffolding (a progressive learning in which a teacher demonstrates how to solve a problem and then step back, offering support as needed) strategies for all learners, which is essential for students with special

educational needs(Shi, 2013). The educators should simply increase all the activities that lead the education process in the way of demonstrating how to do certain planned activities and give all the required supports that help them to fulfil the objective by themselves. The students learn well when they are reserved the opportunities to learn from the mistakes, at where students get few from the educators and do more through the constructive intervention from the educators. This means that the educators are for showing the way and the students pass in the way.

This work focuses more on social constructivism with Lev Vygotsky as its founding father.

The origin of constructivism dates back to the days of Socrates who suggested that learners and their teachers should engage in continuous talking by means of which the unravelling of the unknown may be possible through questioning (Amineh & Asl, 2015).

In education process, learning is not only from the educators to the school but also from the intrinsic and extrinsic motivation of the students. This means that the students should grow their and increase their knowledge from different areas like own researches from the external sources or from the experience in which they live. This is consistent with the education of learners with cognitive and developmental delay that need to be involved in group activities, collaboratively participate in learning processes and communicate actively with the societal area.

An important concept in this theory is the Zone of Proximal Development which emphasizes that children should not be left to solve a problem alone but instead, they should be taught lessons just beyond their levels of attained skills by asking probing questions (Amineh & Asl, 2015).

The weakness of this theory is that it may pose a challenge for evaluation where learners contribute diverse interpretations of an observation in a natural social setting. This weakness is better addressed by the Behaviourist theory which narrows learning processes and academic achievement to goals that are predetermined by teacher who specifically designs the lesson to meet those goals. In this way learners' assessment and evaluation is made easier.

According to my opinion, learners with moderate and severe cognitive and developmental delay encounter the different behaviours from their environment and their peers they live with. The functional curriculum should be the adapted curriculum that provide the required skills that will

help the educators to manage these behaviours. These learners also need to be stimulated in order to change their behaviours in order to earn better academic performance.

These learners are able to think and make reflection. Educators should give the complex tasks that will help them to develop their critical thinking and their reflection towards their future life accordingly to their individual challenges. Educators should accommodate learners with moderate and severe cognitive and developmental delay in which educators should engage them in many activities in order to make them source of skills in terms of learner centred approach implementation.

So, the above mentioned view of learning theories as stimuli, adaptability & flexibility, initiative & self-direction, leadership & responsibility, productivity & accountability, social & cross-cultural skills, zone of Proximal Development and the best intervention for the students with moderate and severe cognitive and developmental delay should be the expectation of functional curriculum and academic performance.

1.8.2. Competence Based Curriculum

Rwanda has embarked on curriculum reform to improve the quality of education. This is a crucial step in the direction of Rwanda's ambition to "develop a knowledge-based society and the growth of regional and global competition in the jobs market" (Ernest Ngendahayo Med & Helen Askill- Williams PhD, 2016). It is the curriculum that leads to shift the knowledge based curriculum that was used years ago to the new curriculum that leads to the competence based.

The main idea of this curriculum is to develop students' independence, lifelong learning habits; appropriate skills and knowledge for situational life; and applications. The competences proposed for Rwanda's educational system include critical and problem solving skills; Creativity and innovation for creating new things that are needed on the

labour market; research for the capacity building; communication in official and non-official languages; cooperation for teamwork spirit, interpersonal management and life skills; and lifelong learning.

The most importance of this curriculum is to create the common understanding on the strategies, the approaches and appropriate means of letting the teaching becomes centred on the students, skills and practicable conducts needed to demonstrate practice in a specific discipline.

In other hand, curriculum based on competences uses coaching or direction and strategies that facilitate the transforming the knowledge into the skills, attitude and values that help in the development and demonstration of competency. The both functional curriculum and competence based curriculum play the main function of offering the skills that help the learners to be critical thinkers in interest of preparing their future life.

The competence based curriculum should be the curriculum that is often used in the ordinary classes in order that offers the basic competences and generic competences. These both competences are useful to the learners for becoming lifelong learning problems solvers.

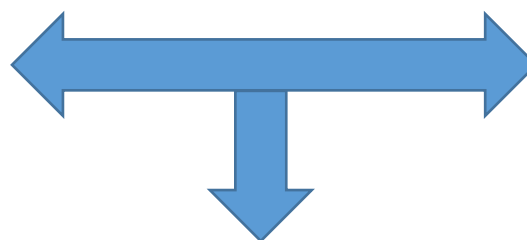
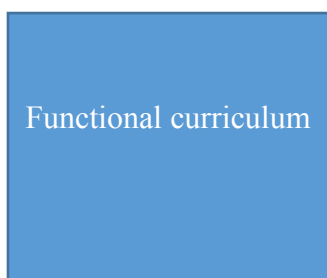
Learners with cognitive and developmental delay, do not really need much knowledge required at the University level but need to have the skills and the competence that help them to solve their own problems meet in the society and in the whole local community their live in.

1.10. Conceptual framework

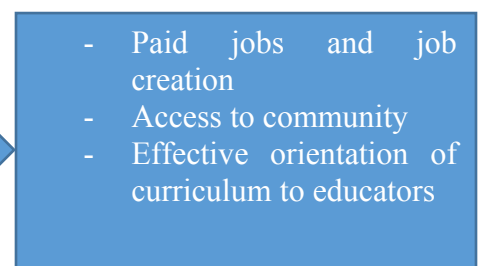
Figure 1: Interaction of variables

Independent Variables

Variable



Dependent



Extraneous variables

- Degree of individual disability.
- Teachers & learners' attitude towards curriculum implementation
- Parental engagement

Source: researcher's own design 2020

The implementation of functional curriculum effectively that lead to the achievement of application of Adapted Teaching methods, Appropriate teaching/ learning materials , Adapted teaching/ learning resources Accessible, Adapted content and Direct instructions are the components of teaching and learning process that enable teachers or educators to implement functional curriculum towards learners with cognitive and developmental delay.

Functional curriculum as a real adapted curriculum for learners with cognitive and developmental delay lead to have the good academic performance including in Vocational skills, Participation in society, Independent living skills, Societal communication skills and Awareness of optimum potential in professional skills. These academic out comes tend to resulting Better future life of learners with moderate and severe cognitive and developmental delay by Getting a jobs and different employments within Job makers and creative and innovation in society

CHAPTER TWO: LITERATURE REVIEW

2.0. Introduction

This chapter deals with other key point of views as well as some policies, which facilitate the good understanding of the study. The part of literature is very important in research because it helps the researchers and readers to understand what is found out on the research field and appropriate further meaning of a given concept.

2.1. THEORETICAL REVIEW

More than a billion people are estimated to live with some form of disability, or about 15% of the world's population (based on 2010 global population estimates) (World Health Organization ,2011).

The constitution of Rwanda, article 40 also says that education is among of the rights of children. Thus, the inclusion is important, as it is effective in combating discriminatory attitudes and aim to build an inclusive society (Mberimana Emmanuel, 2018).

According to policy of Rwanda about special education needs, EDPRS 1 and 2, ESSP, they focus on improving the education quality of learners with special educational needs by infrastructures more accessible to learners with disabilities, content being involved in curricula and pedagogical facilities.

Thus, functional curriculum content should be the main key of improving academic performance and preparing for future life of learners with cognitive and developmental delay of the whole Nation.

Learners with cognitive and developmental delay have the right to education as the other learners without disabilities in the same classes.

The problem is that the limit of achieving the same goal of education should not be equal to the normal standards of achieving the goal. The learners with cognitive and developmental delay need their special schools that include in the appropriate teaching and learning facilities that are ready to meet their special educational needs.

2.2. THE RELATED LITERATURE REVIEW

This Literature is reviewed against the objectives of the study namely in the list here below

To find out whether the vocational contribution of a functional curriculum gives students with cognitive and developmental delay skills that help them to be employed;

To testify whether the functional curriculum provides students with cognitive and developmental delay the participation in socio- community life;

To identify the usage of functional curriculum that clarifies the effective orientation for educators to adapt young people with cognitive and developmental delay that guarantees the desired academic performance of them as their adapted curriculum and investigate the components that make the design of functional curriculum that guarantee the effectiveness of academic

performance for young people as a real adapted curriculum for students with cognitive and developmental delay.

Ambitions for this chapter should be:

- To refer to and study the effects of a program of vocational trainings on the adaptive behaviour of people with Cognitive and Developmental Delay, and
- To analyse social impacts of paid works on the life of the employees with Cognitive and Developmental Delay.
- The vocational function of a functional curriculum provides students with cognitive and developmental delay skills that help them to be employed;

2.2.1. The Vocational Function of a Functional Curriculum gives Skills to be employed

It provides students with cognitive and developmental delay skills that help them to be employed. Many aspects that can help learners with cognitive and developmental delay, to be preparative to the future life are here listed:

2.2.1.1. Learner with cognitive and developmental delay needs individual support to prepare future life,

In the same classroom as the field of education process, number of students that the school should accommodate have the different disabilities that limit or hinder their appropriate learning process achievement.

The educators and the teachers are obliged to identify in which area, the students have the limitation in learning process and find out what supports should reserve to them in order that the teaching becomes fruitful to all learners in the classroom.

The students do not only need to be admitted in the classroom but also to find out their expectations during their schooling ages. It means that the school should become their source of their future life at all. The education achievement start from the policy making. The policy being made is to implement functional curriculum.

The functional curriculum plays the important role in overcoming the long life living problems being faced by the students with cognitive and developmental delay.

Thus, the vocational function of a functional curriculum offers students, knowledge and skills that will help to get them ready for jobs that earns wages or volunteer work.

The functional curriculum should be the curriculum that offer the ability from its basic core subjects that the students, teachers and caregivers use as their sources of information.

2.2.1.2. Evidence-base of a functional curriculum for secondary students with mild intellectual disability.

Finding what to teach that meets the individual needs is not an easy task. It needs to this on the particular program referring to the noticed individual challenges.

Bouck and Joshi (2012) in their study, explored the link between functional curricula and post school outcomes for secondary pupils with mild intellectual disability through the National Longitudinal Transition Study-2 (NLTS2). They found no relationship between curriculum one received in school functional or academic and pupils' outcomes of employments, independent living or postsecondary education attendance.

Bouck and Flanagan (2010) conducted a systematic review of the literature on functional curriculum for pupils with mild intellectual disability between 1994 and 2009. They found 7 research base articles involving functional curriculum and pupils with mild intellectual disability published in four reading journals. All seven articles showed pupils gained in skill acquisition or knowledge following an intervention of some aspect of a functional curriculum (e.g.: cooking, purchasing), although none of the articles connected the interventions.

2.2.2. Functional curriculum provides students the participation in socio- community life.

The functional curriculum provides students with cognitive and developmental delay the capacity or the competences that are very necessary in order that they live in the society safely. Some arguments that prove the capacity of participation are here below:

2.2.2.1. Social skills and postsecondary outcomes.

Learning environments structured to genuinely meet rigorous standards support the development of students' social and emotional skills (Hillary Johnson & Ross Wiener, 2017) and The issue of employability is targeting dynamics on the relationship between higher education institutions and the labour market (Elena Lisa, Katarina Hannelova & Denisa Newman, 2019)

The social skills are at the first range of letting students be disciplined. The discipline of individual should influence the achievement of activities. So, the positive outcome from the functional curriculum should be influenced by the social skills relating to the discipline at all.

2.2.2.2. Academic achievement and postsecondary outcomes

Age, gender, first language, citizenship status, and early **academic performance** were among of the **predictors** of later performance (Tricia L. da Silva, Konstantine Zakzanis, Joanna Henderson & Arun V. Ravindran, 2017).

In teaching and learning process, the academic achievement need the conducive learning environment that have to place the emphasis on making the students with cognitive and developmental delay to be accessible within their learning difficulties.

Level of learners and the gender can be the factors that influence the academic achievement. This explain that the learners with low ages cannot have the same capacity of learning effectively as learners with upper ages.

When considering post school outcomes of students with disabilities, researchers typically discuss the big three: component, postsecondary education, and independent living (Emily C Bouck, 2017).

These components refer to provide the living pace in which the students have to use while living with their classmates in the classrooms, with their relatives in their relative family members and in their respective coworkers in the field of their workshops. Collaboration and communication are among of generic competences that students with cognitive and developmental delay have to develop for active listening in group of working and group homes.

2.2.2.3. Educational experiences

The current state of educational experiences for students with mild intellectual disability, when considering curriculum and instructions, is generally focused or split along two camps: a functional curriculum and an academic curriculum (Emily C Bouck, 2017).

Functional curriculum and academic curriculum are not need to be in the single use each one of them but combine their equivalent aspects to work in combination way. These both curriculum cannot be separated at all.

2.2.3. The Design Of Functional Curriculum Clarifies The Effective Orientation For Educators To Guarantee The Desired Academic Performance.

From The UNESCO Salamanca Statement, (2020), its chief conceptual idea is a commitment to Education for All, be aware of the essential and resolution of giving education for all children, young people and adults ' within the regular education system.

The Ministry of Education has the mission of to make over the Rwandan people more knowledgeable and more skilled on the universal labour market in order to develop the socio-economic sector.

This is to ensure the equal and equitable access to education by eradication of illiteracy, upgrade science and technology in education, promoting critical thinking and attitudes & values.

Several researchers of Isazade, Behbudov, Mikailova, Ismayilova, Karimova, Agayev & Aliyeva, (2008); Najjingo (2009); Lewis (2009); Tesfye (2005); Suubi, (2012); Tirago, (2012); Engelbrecht, Oswald and Forlin (2006); Karangwa, Iyamuremye & Muhindakazi, (2013); Andrea and Farrent (2000) have been conducted and discussed the issue of challenges and opportunities for learners with special educational needs (Mberimana,2018)

2.2.3.1. Students with intellectual disabilities and the curriculum

A curriculum can be noticed as the education system's attempt to reach a match between the students' abilities and needs, and the needs of society, thus accomplishing the objectives of education (Kelly 2009, cited in Ware 2014, 491).

Similarly, pedagogy operates in the middle ground between the child and the curriculum (Biesta 2014, 31).

The ability or the capacity of reasoning, the abstract thinking, the capacity of resolving new problem met, capacity of getting the new information or new knowledge & learning from the experience, complex ideas apprehension and long life living problems solving should be taken as the direct meaning of intelligence.

When the intelligence is not at the normal range, the students face the challenges or the difficultness in cognitive and academic achievement.

2.2.3.2. Functional curriculum

Ganiah I. Ain, (2018) in his study, it is argued that usually, pupils with more significant disabilities and some level of cognitive impairment are designed a curriculum in which focus on functional academics, functional life skills, and vocational skills to prepare them for life after school, rather than a firmly academic curriculum that might be in place if students are preparing to join college

The rationale for functional curriculum is that the students with developmental and severe disabilities need explicit instruction in life skills and in functional academics, because they do not typically learn them through daily interaction with peers and adults (Angi Stone-MacDonald, 2012).

Severe researches have emphasized the need to use functional curricula in recognition that students with disabilities are not well prepared for adult life (Angi Stone-MacDonald, 2012).

In Tanzania, Donor agencies have an important role to play in directing development interventions in certain contexts and sectors, always based on critical knowledge of the territorial, political, and societal contexts in which they operate (Karim Karaki and Alfonso Medinilla, 2016).

These agencies give the needed fund to the educational practices to support the implementation of combined curricula and pedagogy used in the schools during learning and teaching process in order to increase the capacity building of students.

Even if there were needed supports, the curricula were not designed in the way that meet the students' needs and respond to their daily life problems

2.2.3.3 adapted curriculum for children with cognitive & developmental disabilities (CDD)

To address the needs of children who cannot join other peers in mainstream classes, the Government of Rwanda noted that there was need to introduce special educational provisions for this particular group of learners. In this regard, children with moderate, severe and profound intellectual challenges are referred to as categories requiring special provisions in separate education streams. To allow this happen, there is a range of substantial accommodations that need to be made including the development of a Adapted curriculum that can help educators to address the specific learning needs, the provision of special educational materials, the application

of special pedagogical tips and the adaptation of assessments approaches, to name but a few. And that ideally, the introduction of special education classes for children with intellectual challenges means that Rwanda wants to promote rights of those who were formerly marginalized in education and offer them an adaptive, favourable and conducive environment for learning. (MINEDUC & REB, 2017, p, 26)

2.2.3.3.1. The reasons of this curriculum

This curriculum target to enable young people with intellectual and developmental difficulties to participate as equal members in national and global economic development, to realize the optimum potential in education and professional development and Promote highest attainable level of appropriate education in terms of knowledge, competences and attitudes for learners with intellectual and developmental difficulties. (MINEDUC & REB, 2017, p, 26)

This curriculum should also have to shape the students profile of partisanship or patriotism, conscientious to get an equity and equal part in society to the best of their abilities, Confident and autonomous, ready to play a role as active members of society, Successful life-long learners with developed daily living skills, able to adapt to the changing environment and Exploratory, creative, adaptive and productive members of society. (MINEDUC & REB, 2017, p, 27)

The curriculum have to provide the appropriate values (Autonomy, Optimism, Self –esteem, Equity and inclusiveness, Learner-centeredness, The importance of family and Rwandan culture and heritage) and competences that are basic competences (Literacy, Numeracy, ICT, Citizenship and National identity, Activity of Daily Living, Science and Technology and Communication) and generic competences (interpersonal relations and life skills, Lifelong learning, Creativity, Exploration, Problem solving, and Co-operation,) (MINEDUC & REB, 2017, p, 28)

2.2.3.3.2. Grades of schooling and completion

Through the specific individual assessment, the curriculum stated to have three grades of schooling for children with intellectual challenges to complete their education which are:

Level 1: Level of knowledge ‘‘understanding basic values, concepts, study and social skills’’

Level 2: Level of practice ‘‘capacity to live with improved autonomy’’.

Level 3: Level of skills ‘‘ ability to show new behaviour’’. (MINEDUC & REB, 2017, p, 28)

2.2.3.3.3. Approaches to use for this curriculum

The curriculum should provide the appropriate approaches that the educators have to utilise while learning and teaching process like Holistic approach per level of development, Backward chaining, Parents involvement to promote synergy, consistency and quality, Interactive approach and integrated activities, Play-based learning, Individualized approach, Peer and collaborative teaching approaches, Multi-sensory approach and Total communication approach. (MINEDUC & REB, 2017, p, 29-31)

2.2.3.3.4 Assessment approaches for this curriculum

This curriculum focuses on **Conceptual skills** (communication, language, time, pre-numeracy, academic), **Social skills** (interpersonal skills, social responsibility, recreation, friendships, etc.) and **Practical skills** (daily living skills, work, travel, etc). The formative assessment focused on **Measurement of the targeted behaviour, Achievement of targeted competences, Record keeping (Assessment of limitations and capacities, Individual Progress Record Tool (IPRT) and Individual Education Plan are the elements being focused on within this curriculum.** (MINEDUC & REB, 2017, p, 32- 33)

2.2.3.3.5. Curriculum guidelines

This section grants procedures, advice and orientation on how educators can implement the curriculum.

Didactical orders

The curriculum advises the educators to dose content and methodology to suit learning needs and pace, devise and validate appropriate pedagogical tools, allow for choice and have a practical life-skills orientation that addresses both the present and the future needs of the learner and adapt the teaching style to the learner’s pace rather than expecting the learners to adapt themselves to the subject matter by paying attention to the learners’ diverse challenges (Cognition, speech, memory, communication, dexterity, etc.), and focus more on the learner’s strengths and be

prepared to plan the lessons in flexible manner and beginning by an individual educational assessment, in order to be able to plan IEP, often broken into smaller steps that are repeated and frequently reinforced. The development of the optimal level of autonomy is essential in the essence of this curriculum. (MINEDUC & REB, 2017, p, 33- 34)

Communication

This curriculum advises educators to use different communication styles, varied enough (verbal and non-verbal) to help them because most of children with moderate, severe and profound intellectual challenges have delays in language development and some of them experience speech problems. (MINEDUC & REB, 2017, p, 35)

Assessment

The curriculum developers advise to conduct Individual education assessment / placement at the beginning of planning of teaching and learning, to establish the strength and limitations of the learners and therefore plan appropriate teaching and (ordinary) assessment often conducted in form of a test to assess the learner's progress and achievements in a given lesson. And that the formal in either case, the assessment issues will aim at providing accurate record of the learner's personal life, practical and conceptual skills, and identifying possible opportunities that promote and/or stimulate learning and building his/her autonomy.

There will be a continuum of curricular provisions that recognize and addresses learners' appropriate levels of achievement and takes due account of learning needs and ability considering both their chronological and developmental age. In a long term perspective, children with intellectual challenges are expected to reach a post-primary level, with a chance to be awarded a certificate of completion. For those who require more specialized provision and continued supportive day care, educators are advised to establish a clear and appropriate support plan based on the achieved competences. (MINEDUC & REB, 2017, p, 36- 37)

Areas of learning

Activities of Daily Living (A.D.L) (these activities include eating, bathing, dressing, personal hygiene/grooming, toileting, mobility, positioning, transfers, etc), **Social Economic activities**(these refer to skills that can promote the learner's capacity to work as a producer,

somebody who can cope with life in the dynamic changing society where everybody can run a small personal business, even though some may need support to do so), **Health and body awareness** (these refer to skills related to human and animal body parts, transformation and limitations in human body and general health care), (**Social skills development** (these refer to skills that help to interact with people and objects, develop social interaction with others, take part in group activities, understand others, send and receive information), **Physical Education (PE)**, **Pre-numeracy and numeracy**, (This refers to skills needed to developing sensory awareness, perception of colour, pattern, shape and position, reaching out, sorting, grouping, and classifying, simple exercise leading to elementary problem-solving, real-life situation numbers, including time and money), **Literacy**, (this involves skills related to developing a literate citizen, who is resourcefully able to participate in socio-economic activities of his/her community, with varying levels of support) and **ICT, Science and Technology** (This refers to skills that can help to develop exploratory, creative, adaptive and productive members of society able to use ICT, Science and Technology for socio-economic Developments.

Learners will be initiated to basic ICT functioning, such as Telephones, cameras, radios, clocks, televisions, computers and other familiar ICT equipment and electronic tools used in homes, schools and communities. The idea is to familiarise them with the tools that are useful in life) are learning areas being focused in during implementation of this curriculum. (MINEDUC & REB, 2017, p, 38- 40)

Implementation and monitoring

This curriculum will be implemented by all schools whether public or private. To ensure quality and consistency, they will undergo a rigorous and strict supervision from the central and local levels of education, including sector and district inspection visits. (MINEDUC & REB, 2017, p, 41)

2.3. The gap in literature

Although the views of many researchers above, state that functional curriculum should be detected as the education system's trial of matching the students' abilities and needs with the needs of society. That pedagogy plays the role of linking the students' behaviours with their curriculum adaptation, the students with cognitive and developmental delay can acquire basic

skills when included in the special and within regular classrooms with non-disabled peers. It means that their acquisition should have a significant link to an effective supporting from their educators within community and that the academic attainment and social skills are both essential factors linked to postsecondary outcomes that link to the future life of the individual expectations.

Then, these researches are not identified which types of intervention is more or less active exactly to the students with cognitive and developmental delay specifically.

The researchers also did not mention exactly the specific optimum potential in education and professional development for students with cognitive and developmental delay who receive a functional curriculum.

These researches did not point at exact relation that the functional curriculum plays towards the academic performance of students with cognitive and developmental delay.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0. Introduction

Research methodology is a system of models, procedures, and techniques used to find out the results of the research (Ranneerselvam, 2006).

For this chapter, a researcher analysed the research design, the study setting, the population, sampling strategies and sample size, research instruments, data collection techniques, data analysis procedures, position of the researcher, validity and reliability, ethical issues, and the conclusion of this chapter.

3.1. Research design

A research design is a strategy of answering your research question using empirical data (Shona McCombes, 2021; Pritha Brandari, 2022)

It was selected because the researcher wants to describe the relation between functional skills and academic performance of learners with cognitive and developmental delay in two selected special schools.

3.1.1 Study setting

Two special schools of Rwanda, Kigali city were the area of this research, HPV Gatagara of Gikondo in KICUKIRO District, and HPVGATAGARA of NDERA in GASABO District.

Those special schools were chosen due to the facts that these schools have learners with cognitive and developmental delay who's enough knowledge and experiences that needed by the researcher.

3.1.2 The population

This research made the population including learners with moderate and severe cognitive and developmental delay, teachers and administrators of both special schools of GATAGARA in the academic year 2015 to 2021.

Table 1: The target population of the study, academic year 2015 - 2021

SCHOOL	LEARNERS WITH CODNITIVE DEVELOPMENTAL DELAY	TEACHERS & DEVELOPMENTAL DELAY	ADMINISTRATIVE (HEADTEACHER, DOS, RESSOURCES OFFICER	TOTAL
GIKONDO	88	18	3	109
NDERA	91	7	3	101
TOTAL TARGET POPULATIO N	179	25	6	210

Source: Primary data (May, 2021)

In the Table 1 above, depicts how the respondents are represented in two special schools. These schools are HPV Gatagara at Gikondo and HPV Gatagara Ndera. All of the schools have learners with cognitive and developmental delay.

3.1.3 Sampling strategies and sample size

3.1.3.1 Sampling strategies

Choosing a sampling strategies is an essential in the capture phase of the data journey and will ensure that your data is reliable and reflects the characteristics of your target group (Rajashi Mukherjee, 2019).

For this section, during this research, among of special schools of Rwanda, two among of them were selected because of accommodating learners with cognitive and developmental delay.

The academic staff includes in teachers and administrative were taken as the main expected to give the relevant information in academic activities.

3.1.3.2 Sample Size

The sample size for this study comprised of 6 administrative staff and 45 teachers were all taken because they were on a little quantity.

It also comprised of 195 learners with cognitive and developmental delay. Hence, the researcher calculated sample size by using formula of Yamane (1967) which helps to find out the sample size of given population of the study that formula is given as follows:

$$n = \frac{N}{1 + N \cdot e^2} \text{ where: Margin error of 10\%; } N = \text{Total population; } n = \text{sample size}$$

$$n = \frac{210}{1 + 210 \cdot 0.1^2} = \frac{210}{1 + 210 \cdot 0.01} = 68 \text{ respondents.}$$

In this research the total sample of 68 respondents were manageable and a representative sample depending on the type of research and available finance.

Table 2. Sampling table

<i>SCHOOL</i>	<i>LEARNERS WITH</i>	<i>TEACHERS</i>	<i>ADMINISTRATIVE</i>	<i>TOTAL</i>
---------------	----------------------	-----------------	-----------------------	--------------

	<i>CODNITIVE & DEVELOPMENTAL DELAY</i>		<i>(HEADTEACHER, DOS, RESSOURCES OFFICER</i>	
<i>GIKONDO</i>	16	18	3	37
<i>NDERA</i>	21	7	3	31
<i>TOTAL TARGET POPULATION</i>	37	25	6	68

Source: Primary data (May, 2021)

3.1.4 Research instruments

The questionnaire was comparatively adjusted through the research of Ministry of education and Rwanda education board (2018) entitled Adapted curriculum for children with Cognitive & Developmental disabilities (CDD)

3.1.4.1 Questionnaire

The questionnaire is the main instrument for collecting data in survey research. Basically, it is a set of standardized questions, often called items (Paul J. Lavrakas (2008)

The questionnaire of this research contained two series that included in Closed- ended questions or closed- items and Open- ended questions or opened- items.

The closed- ended questions was constituted questions used to get the limited idea on specific data in order to make them realistic. While, the open – ended items was used to obtain the large or unlimited information in order to have the individual or personal data.

3.1.4.2 Interview guide

An interview guide is simply a list of the high level topics that you plan on covering in the interview with the high level questions that you want to answer under each topic (C. BIRD, 2016).

In terms of qualitative data collection, we used two group interviews to educators, and administrative staff in order to obtain the large information. These two groups interview was useful in this research because it provided the necessary information needed.

3.1.4.3 Observation Checklist

During this research, the researcher sat in the classroom and make the observation on how educators instruct learners with cognitive and developmental delay.

The results of that observation checklist was successful because it produced the used data that was supplement to the information from both questionnaire and focused interview.

3.1.5. Data collection techniques

Data collection techniques include interviews, observations (direct and participant), questionnaires and relevant documents (Yin, 2014).

All questionnaire were distributed and the percipients reacted immediately in order to avoid interchange the information among of them in order to have the individual and many views on the same item.

The period of data collection or field visit covered two consecutive months from May to June 2021.

3.1.6 Data analysis procedures

In current research, the data was collected from the field in two consecutive months of May and June of 2021.

Both quantitative and qualitative data was collected through the research questions set. During this period, the researcher used descriptive statistics in order to well analyse the quantitative data from the field. While qualitative data was collected though interview guide, group discussion by thematic analysis and dominant themes that were taken and presented through narratives and observation checklist.

The data collected from both questionnaires and observation checklists was coded and presented in frequency distribution, percentage and tabulation as well as in narrative to describe methods, materials and teacher professional competence used in teaching learners with cognitive and developmental delay.

During data coding researcher used Statistical Package for the Social Sciences (SPSS) to calculate percentages and frequencies.

3.2. Position of the researcher

The research has the chief aim of examining clearly the relationship between functional curriculum and academic performance with learners with cognitive and developmental delay. The researcher used case study research.

A case study is a research strategy that helps us understand phenomena in real-life situations (Malin Karlsson, 2016). The current study's phenomenon is performance of learners with cognitive and developmental delay in special schools.

3.3. Validity and reliability

Reliability and validity are concepts used to evaluate the quality of research (Fiona Middleton, 2019)

3.3.1 Validity

Validity is about the [accuracy](#) of a measure (Fiona Middleton, 2019).

In this research, the judgement's expert was used in order to affirm that the questions used were related to the objectives of the study and appropriate for their task. After the consultation, the instruments were modified and redesigned in the check-up of the clarity of information in the questionnaire.

3.3.2 Reliability

Reliability is about the consistency of a measure (Fiona Middleton, 2019)

Thereafter, a pilot study was conducted in order to establish the reliability of the instruments. The test was graded and afterwards calculation of the internal consistency (reliability coefficient)

through the Split -Half procedure was done to arrive at the total reliability of the instrument using the Spearman-Brown Prophecy formula shown below (Fraenkel, Wallen & Hyun, 2012).

$$\text{reliability of scores on test} = \frac{2 \times \text{reliability for } \frac{1}{2} \text{ test}}{1 + \text{reliability for } \frac{1}{2} \text{ test}}$$

As suggested by Shenton (2004), following was some of the measures to ensure credibility, conformability, transferability and dependability of the findings obtained of the qualitative data.

Every step in the procedures of data collection and analysis was patterned after researchers who have successfully utilized them in previous and similar work

More than one method was used in collecting the same data. These included focus group interviews and individual interviews in order to minimize the limitations of each method and take advantage of their strengths.

Information provided by one informant was cross-checked with other informants for a balanced and comprehensive report. Information gathering was covered by written recording

3.4. Ethical Considerations

The researcher obtained an introductory letter from the University of Rwanda, School of Inclusive and Special Needs Education which allowed him to conduct a research. Afterwards, the researcher presented the letter from the dean of School of Inclusive and Special Needs Education to the head teachers of these two special schools in favour of conducting research in an a conducive environment .

Then, the researcher requested consent of the participants through a preliminary visit to the selected schools.

Next, the researcher requested the participants that they are not allowed to mention their names on questionnaires in order to keep confidentially the information from the respondents because, the information should be used for the purpose of the study.

Finally, the researcher explained the importance of the research and their participation before signing the informed consent letters. The researcher has explained respondents that they were allowed to ask questions related to the research at any time, refuse to respond to any questions, stop an interview at any time, or extract from the research. Respondents participate freely and was assured of confidentiality.

CHAPTER FOUR: PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.1. Introduction

This research study relationship between functional curriculum and academic performance among learners with moderate and severe cognitive and developmental delay in special school of Gatagara and Ndera of Rwanda guided by the specific objectives of finding out whether the vocational portion of a functional curriculum provides students with moderate and severe cognitive and developmental delay skills that help them to be employed; investigating whether the functional curriculum provides students with moderate and severe cognitive and developmental delay the participation in socio- community life and investigating the design of functional curriculum that clarifies the effective orientation for educators to adapt young people with intellectual and developmental disabilities that guarantees the desired academic performance of students with moderate and severe cognitive and developmental delay as their

adapted curriculum. The same study has taken the answers of different respondents together in order to clarify the achievements of the objectives set.

4.2. QUANTITATIVE DATA

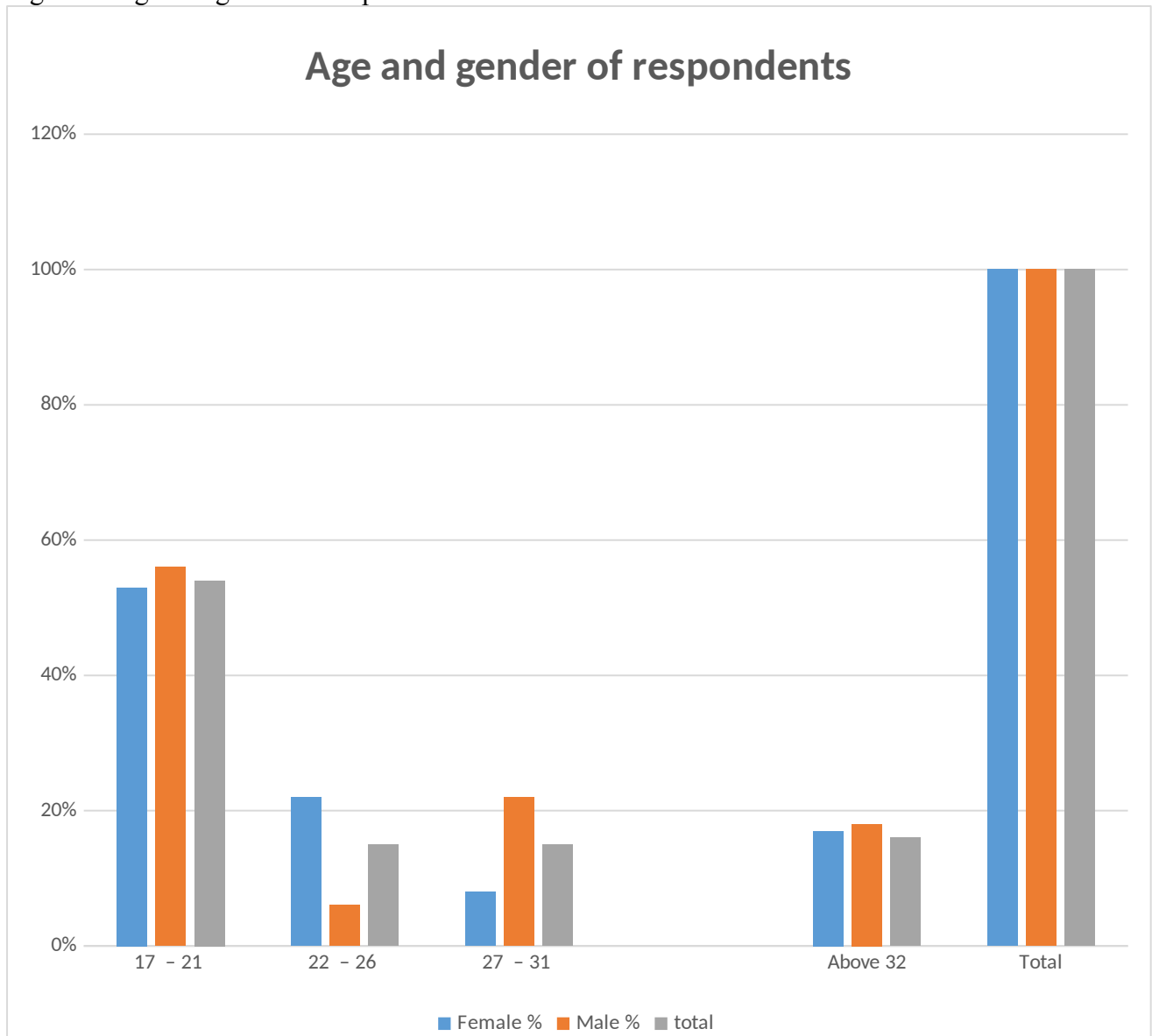
4.2.1. Demographic Data of the respondents

Ages, gender and experiences in teaching are the demographic data that were analysed for these respondents

4. 2.1.1 Age and gender of respondents

The respondents questioned to state whether they were female or male. They also asked to indicate their ages.

Figure 2. Age and gender of respondents



Source: Primary data (May, 2021)

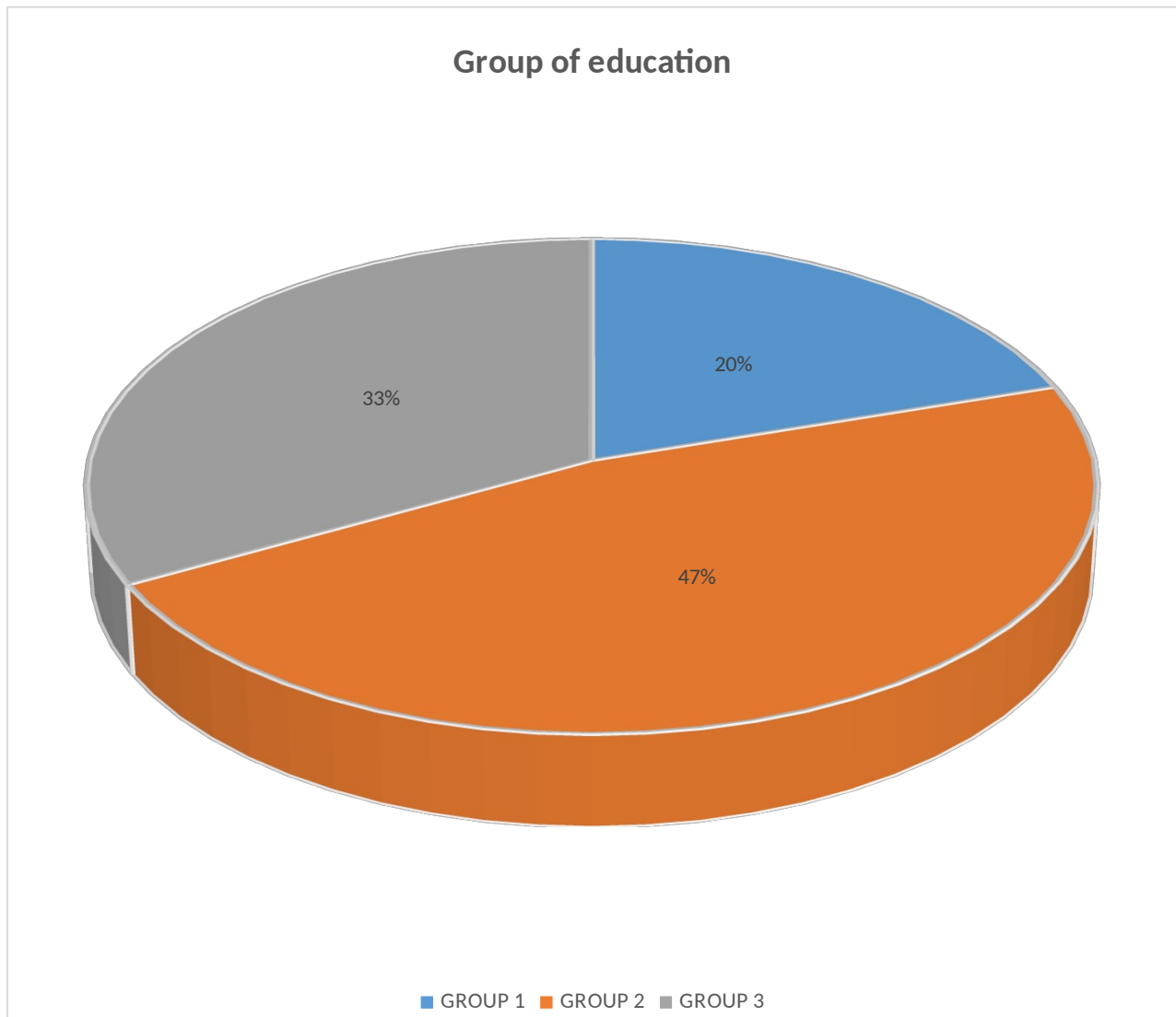
Figure 2, indicates that the respondents of HVP Gatagara Ndera and HVP GATAGARA GIKONDO 54% are in the ages of 17- 21 years. Few were those aged between 22-26 years 15%. 15% were aged between 27-31 years. Those above 31 years were 16%.

4. 2.1.2. Group of education and areas of studying.

Educators were asked to indicate their learners' levels of education.

Figure 3. Group of education

In functional curriculum, learners study in group levels of education



Source: Primary data (May, 2021)

Reference made in figure 3, the great number of learners 47% of all learners are in group 2, 33% of them are in group2 while 20% are in group 1

4.2.2. THE VOCATIONAL CONTRIBUTION OF FUNCTIONAL CURRICULUM VIRUS ACADEMIC PERFORMANCE

The respondents were asked to show their part whether content, teaching methods, design and revenue from functional curriculum in current teaching and learning process contribute much more to learners with cognitive and developmental delay to develop their careers and prepare their effective accurate future life.

4.2.2..1. The individual support services towards future lives.

Learners with cognitive and developmental delay need the individual support services like delivering the learning opportunity in order to prepare their future lives

Table 3. Learners need the individual support services.

	<i>Position</i>	<i>Frequency:</i>	<i>Percentage</i>
		<i>n=68</i>	
	<i>Strong agree</i>	56	82%
	<i>Agree</i>	12	18%
	<i>Disagree</i>	0	0%
	<i>Strong disagree</i>	0	0%
	<i>Total</i>	68	100%

Source: Primary data (May, 2021)

The table above shows that among of 68 respondents 56 (82%) strongly agreed that Learners with cognitive and developmental delay need the individual support services like delivering the learning opportunity in order to prepare their future lives, 12 (18%) agreed on it and no one disagreed on it.

4.2.2.2. The functional curriculum engages learners in basic competences.

The functional curriculum focuses on daily activities and practical aspects and also include academic like math and language arts.

Table 4. Components of functional curriculum.

POSITION	FREQUENCY:	PERCENTAGE
	N=68	
STRONG AGREE	22	32%
AGREE	43	63%
DISAGREE	3	5%
STRONG DISAGREE	0	0%
TOTAL	68	100%

Source: Primary data (May, 2021)

The data in the table 11 showed that among of 68 respondents, 22 (32%0 strongly agreed that The functional curriculum focuses on daily activities and practical aspects and also include academic like math and language arts, the 43 (63%) agreed that on the it while 5 disagreed and no one strongly disagreed.

4.2.2.3. The components of a functional curriculum towards academic performance outcome

Typically, a functional curriculum is presumed to include functional academic content, skills for financial aspects, long life living, transportation, vocational education, access to community, skills to social and relationships, Independent living skills & self-determination that prove a successful academic performance outcome.

Table 5. The components of Functional curriculum towards academic performance.

<i>Position</i>	<i>Frequency:</i> <i>n=68</i>	<i>Percentage</i>
<i>Strong agree</i>	22	32%
<i>Agree</i>	43	63%
<i>Disagree</i>	2	3%
<i>Strong disagree</i>	1	2%
<i>Total</i>	68	100%

Source: Primary data (May, 2021)

The data from the table 14, 32% strongly agrees that typically, a functional curriculum is presumed to include functional academic content, skills for financial aspects, long life living, transportation, vocational education, access to community, skills to social and relationships, Independent living skills & self-determination that prove a successful academic performance outcome, 63% agrees on this assertion while 3% disagrees and 2% strongly disagrees.

4.2.2.4. The graduated from functional curriculum, present the hope of performance.

The students with cognitive and developmental delay who graduated from functional curriculum, present the hope of good future life due to their successful academic performance.

Table 6. The graduated students present the hope of good future life.

Position Frequency: Percentage
n=68

<i>Strong agree</i>	22	32%
<i>Agree</i>	43	63%
<i>Disagree</i>	2	3%
<i>Strong disagree</i>	1	2%
<i>Total</i>	68	100%

Source: Primary data (May, 2021)

The data from the table 14, 32% strongly agrees that typically, a functional curriculum is presumed to include functional academics, financial skills, daily living, transportation, vocational education, community access, social skills and relationships, Independent living skills and self-determination that prove a successful academic performance outcome, 63% agrees on this assertion while 3% disagrees and 2% strongly disagrees.

4.2.2.5. The outcomes of learners who graduate for functional curriculum.

The learners who follow functional curriculum expect: Simple Calculation and language skills, financial skills and independent daily living, small and soft businesses creation, social-skills building or social/relationships, and self-determination and social first aid acquisition, and societal living skills community access

Table 7: The graduated from functional curriculum.

<i>Have learners ever followed functional curriculum in special schools of Rwanda graduated?</i>	<i>Frequency n=31</i>	<i>Percentage</i>
<i>Yes</i>	31	100%
<i>No</i>	0	0%
<i>If yes write the down the expected outcomes nowadays</i>		
<i>Simple Calculation and language skills</i>	31	100%
<i>Financial skills and independent daily living.</i>	31	100%
<i>small and soft businesses creation and</i>	29	94%
<i>employment in small works</i>	27	88%
<i>social-skills building or social/relationships, and self-determination</i>	30	98%
<i>social first aid acquisition, and societal living skills community access</i>	27	87%

The table above shows that the respondents (31) at 100% confirmed that the students who covered all program from the functional curriculum achieve their expectation of simple calculation, (31) at 100% confirmed

4.2.3. THE FUNCTIONAL CURRICULUM OFFERS KNOWLEDGE AND SKILLS TO ACCESS COMMUNITY

4.2.3.1. The functional curriculum offers students with knowledge and skills to social life.

The vocational function of a functional curriculum offers students, knowledge and skills that will help prepare them for jobs that help them earn wages or volunteer work and provide the independent living skills.

Table 8. The functional curriculum offers knowledge and skills for paid jobs.

Position Frequency: Percentage
n=68

<i>Position</i>	<i>Frequency</i>	<i>Percentage</i>
<i>Strong agree</i>	21	31%
<i>Agree</i>	46	68%
<i>Disagree</i>	1	1%
<i>Strong disagree</i>	0	0%
<i>Total</i>	68	100%

Source: Primary data (May, 2021)

The table 12 indicates that 21 (75%) represents respondents who strongly agreed on the portion of functional curriculum towards the social life, 46 (68%) agreed. 1 (1%) disagreed and no one strongly disagreed.

4.2.3.2. The functional curriculum provided the social skills and independent living skills.

The social skills and Independent living skills provided by the functional curriculum are important aspects that demonstrate greater persistence and ability to navigate the demands of post school outcomes and also be more desirable to employers.

Table 9. The social and Independent living skills towards employers.

Position Frequency: Percentage
n=68

<i>Strong agree</i>	22	32%
<i>Agree</i>	43	63%
<i>Disagree</i>	2	3%
<i>Strong disagree</i>	1	2%
<i>Total</i>	68	100%

Source: Primary data (May, 2021)

The data from the table shows that 22 (32%) of respondents strongly agreed that the functional curriculum provides the social and independent skills, 43(63%) agreed, 2(3%) disagreed on that while 1 (2%) strongly disagreed that the functional curriculum provide the social skills and Independent living skills provided by the functional curriculum are important aspects that demonstrate the ability and willingness regarding to the demands of post school outcomes and also be more desirable to employers.

4.2.4. USAGE OF FUNCTIONAL CURRICULUM CLARIFIES A GOOD ORIENTATION

The good implementation of functional curriculum on the part of ministry of education, school management, the educators and the learners with cognitive and developmental delay is the key option of improving the standards of the quality education in learning and teaching process.

4.2.4.1. Adaptability of functional curriculum in educational process

The functional curriculum is adaptive curriculum to learners with cognitive and developmental delay.

Table 10: adaptability of functional curriculum.

Position Frequency: n= Percentage
68

<i>Yes</i>	63	93 %
<i>No</i>	5	7 %
<i>Total</i>	27	100%

Source: Primary data (May, 2021)

The table above shows that among of 68 respondents, 63 as 93% confirmed that functional curriculum is adaptive to learners with cognitive and developmental delay while 5 equals to 7% refused it.

4.2.4.2. Educational Resources Accessible In Functional Curriculum Increase Performance

Teaching and Learning Resources Accessible In Functional Curriculum Increase Academic Performance of Learners with Cognitive and Developmental Delay. So, teaching and learning resources are one of the important components of quality education improvement in teaching and learning process

Table 11. The accessible teaching and learning resources increase the performance.

Position Frequency: Percentage
n=68

<i>Yes</i>	68	100%
<i>No</i>	0	0%
<i>Total</i>	68	100%

Source: Primary data (May, 2021)

The data from the table 6, indicate that all of respondents (68) at 100% confirmed that accessible adapted teaching and learning resources provide the opportunity for learners with cognitive and

developmental delay to increase their performance while no one of them 0% disconfirmed this statement.

4.2.4.3. Adapted Teaching Methods of Functional Curriculum Increase the Performance

Adapted Teaching Methods of Functional Curriculum Increase the Academic Performance of Learners with Cognitive and Developmental Delay

Table 12: The adapted teaching methods improve the performance.

Position Frequency: Percentage
n=68

<i>Yes</i>	56	82%
<i>No</i>	12	18%
<i>Total</i>	68	100%

The table above declares that among of 68 respondents, 56 at 82% said that adapted teaching methods improve the performance of learners with cognitive and developmental delay and 12 among of them 18% false it.

4.2.4.4. Adapted Content of Functional Curriculum Increase Performance

Adapted Content of Functional Curriculum Increase Performance for Future Life of Learners with Cognitive and Developmental Delay, the reason why the respondents were asked to approve if adapted content improve the quality of improvement on academic performance of learners with cognitive and developmental delay.

Table 13. The adapted content towards academic performance.

Position Frequency: Percentage
n=68

<i>Yes</i>	63	93%
<i>No</i>	5	7%

<i>Total</i>	68	100%
--------------	----	------

Source: Primary data (May, 2021)

In the table above, among of 68 respondents, 63 at 93% approved that adapted content improve the quality of improvement on academic performance of learners with cognitive and developmental delay and 5 at 7% disapproved it.

4.2.4.5. The Use of Instructions helps to Increase Academic Performance

The Educators Use Instructions to Help Learners with Cognitive and Developmental Delay to Increase Academic Performance. The educators were asked to show their part on the assertion declaring that the kind of instructions given to the leaners have to play the role of improving the quality of academic achievements.

Table 14. The instructions used by teachers help to perform well.

Position Frequency: Percentage
n=68

<i>Yes</i>	67	98.5%
<i>No</i>	1	1.5%
<i>Total</i>	68	100%

Source: Primary data (May, 2021)

The table above mentioned showed that all respondents 67 (98.5%) affirmed instructions used by teachers help learners with cognitive and developmental delay to perform well while 1 (1.5%) rejected it.

4.2.4.6. The design of functional curriculum towards the best orientation of performance.

The design of functional curriculum is shaped in the way that every educator is facilitated to find out which best orientation of the appropriate supports for each group of students and this guarantee the improvement of academic performance of them.

Table 15. The design of functional curriculum is keen to best orientation.

<i>Position</i>	<i>Frequency: n=68</i>	<i>Percentage</i>
<i>Strong agree</i>	22	32%
<i>Agree</i>	43	63%
<i>Disagree</i>	2	3%
<i>Strong disagree</i>	1	2%
<i>Total</i>	68	100%

Source: Primary data (May, 2021)

The data from the table 15, 32% strongly agrees that the design of functional curriculum is shaped in the way that every educator is facilitated to find out which best orientation of the appropriate supports for each group of students and this guarantee the improvement of academic performance of them, 63% agrees on this assertion while 3% disagrees and 2% strongly disagrees.

4.3. QUALITATIVE DATA

Focus group interviews were conducted with group of educators, administrative staff and resources officers. The questions interviewed focused on how functional curriculum should improve performance of students with cognitive and developmental delay and what students with cognitive and developmental delay who graduated should be able to do after schooling. The interviews were audio recorded. These recorded were then listened many times in order to identify and document the descriptive concepts that emerged from the focus group interviews. These expressive concepts were grouped into ideas which were later developed into constructive instruction, vocational practice, and regular follow up for educator, variety of methods, appropriate and adaptive content, individual supports and qualified educators should be the ways and elements used in functional curriculum to improve academic performance. The ideas also included simple calculation, language skills, financial education, small and soft businesses, employment in small works, social first aid acquisition, and societal living skills are the major expected out comes of functional curriculum after schooling.

4.4. Summary of qualitative results

The results suggest that constructive instructions are one of the very necessary component of the functional curriculum in which educators should apply effectively in their learning and teaching process in order to engage the students with cognitive and developmental delay in their learning. The good instructions are also the comprehensive content, so, the comprehension lead to the good performance. Then vocational practice important in each daily life in the way that people need the vocational skills in order to create the jobs rather than seeking the job. The students with cognitive and developmental delay need to create the small businesses that will help to prepare their future life. The educator need the regular follow up of daily achievement on the practices being performed by the students. Educators also need to use the variety of methods during teaching and learning process in order that they find out which method which is the best according to the individual supports of each student. Appropriate and adaptive content is the key of having a good academic performance with in future life preparation. The quality of any content must influence the one life, we sometimes compare it as the performance. The one who got the good content should get the good performance at all. It is in that way that we should prepare the content reflecting to the real life of the society and preparing the good citizenship. The students learn at the different paste, no one equal to the other and everyone has his leaning difficulties that hinder his academic performance, the reason why it is very important to provide the individual supports in order to meet the individual needs. The functional curriculum need to be implemented by the qualified educator in order that they apply effectively the needed supports to the students with cognitive and developmental in order to improve the quality of performance of them to improve academic performance.

The same research, the interviewers in this current study declared that the simple calculation must be the outcome of learners who followed the functional curriculum because, mathematics is one of the content that students with cognitive and developmental delay should acquire during education process, language skills, financial education, small and soft businesses, employment in small works, social first aid acquisition, and societal living skills are the major expected out comes of functional curriculum after schooling.

CHAPTER FIVE: SUMMARY, DISCUSSION, CONCLUSION, RECOMMENDATIONS

5.0. Introduction

The purpose of chapter five was to present a brief and clear summary of the data, followed by presentations of comprehensive set of conclusions and recommendations based on the data discussed in chapter four.

5.1. Summary of the study

The study aimed to identify relationship between functional curriculum and academic performance of learners with cognitive and developmental delay. This study targeted learners with cognitive and developmental delay in special schools of HVP GATAGARA GIKONDO and HVP GATAGARA NDERA in Rwanda. The target population of this study was 210 composed of 179 learners with cognitive and developmental delay, 25 teachers and 6 administrators of HVP GATAGARA GIKONDO and HVP GATAGARA NDERA. The sample size used in this study was 68 including 37 learners with cognitive and developmental delay, 25 teachers and 6 administrators of these two selected special schools in period of six years from 2015 to 2020-2021. The questionnaires were given to teachers teaching learners with cognitive and developmental delay and personnel for filling in. Data collected from the field was edited.

Qualitative data was analysed through content analysis and emerging major themes were identified. Descriptive statistics analyses were done from which percentage, frequency and tables were made.

5.1.1. Vocational function of a functional curriculum provides students skills that help to be employed;

5.1.1.1. Contribution of functional curriculum to preparation of future life.

Functional curriculum has the significant contribution in order to improve academic performance.

The first contribution is that this curriculum include in academic content like math and language arts. These lessons or content should be the academic contribution on the implementation of any curriculum designed in the area of achieving the government policy in terms of education process for the development of any country.

In long life living, people need the acquisition of basic knowledge from the calculation for performing the soft primary needs and languages for communication skills.

Learners with cognitive and developmental delay need the individual support services like delivering the learning opportunity in order to prepare their future lives, then this curriculum provide in such supports in which individual need in order to meet their leaning difficulties. The second contribution is focusing on daily activities and practical aspects and also include academic like math and language arts.

The vocational function of a functional curriculum gives students, knowledge and skills that will help prepare them for jobs that earn wages or volunteer work and provide the independent living skills.

Knowledge and skills are common elements from functional curriculum that go together in teaching and learning process in order to achieving all objectives set, because, the students become competent when they came to effectively combine the knowledge, skills and attitude and values altogether.

5.1.1.2. The outcomes of learners who graduate for functional curriculum.

The learners get the school for the good performance after the school. Its outcomes are numeral:

The first outcome is Simple Calculation and language skills. Calculation should be taken as the necessary basic needs for the students in numeracy. The students with cognitive and developmental delay must have the knowledge on counting items for example. This means that through any curriculum, the students should acquire the basic needs or the prior knowledge that will be the base of gaining the generic competences from the advanced education.

Literacy is another basic need and basic competence. Learners with cognitive and developmental delay should be taught how to articulate the works in order to make the full sentences. The sentences will also help them to make the paragraphs. Due to these language skills, the communication between them will be effective to the local community in which they live. So, this curriculum will lead to social community.

The second outcome of functional curriculum is financial skills and independent daily living. Students with cognitive and developmental delay need to have the self-direction and self-control in their daily life. The house holding activities will be needed self- decision making in order to perform and achieve their daily activities as planned.

Small and soft businesses creation are the other expected outcome from functional curriculum. One of the impact of this curriculum is job creation more than job seeking. Students with cognitive and developmental delay have to make small business in order that they find the occupation and the income generation.

Students with cognitive and developmental delay has the problem of knowing their relationship they have one another in the society they live. The reason why they need to be taught about the relationship as social-skills building or social/relationships. These will not only be the skills and self-determination and social first aid acquisition, and societal living skills community access

5.1.2. Significant contribution of functional curriculum on access to socio-community life.

Through this ability and competence from this curriculum, we do not hesitate that the students with cognitive and developmental delay who followed it may not only move from the area to the other by themselves with public or private transportation because among of the skills they get include in reading buses or other way schedule.

The social skills and Independent living skills provided by the functional curriculum are important aspects that demonstrate the ability and willingness to lead the demands of post school outcomes and also be more desirable to employers.

Typically, a functional curriculum is presumed to include functional academic content, skills for financial aspects, long life living, transportation, vocational education, access to community, skills to social and relationships, Independent living skills & self-determination that prove a successful academic performance outcome.

Truly, People with cognitive and developmental delay, and other people with different disabilities need the necessary skills that will help them live in the society. These skills mostly include in using money. These citizens may have works and also have been employed in the different attribution. It means that their gain have to be valued in terms money, the reason why using money gained must be an interesting skill that most students need for their further life development.

When thinking on the skills that the people with disability should perform as the domestic tasks, the list should be long at their usage. But in the domestic one, the students will need the shopping activities that will carry them much use of money in their sense of life, the student may learn how to write a grocery list for the week, shop for specific items and put food away in the proper storage areas at home for example.

The students with cognitive and developmental delay have to maximize the skills of understanding time and punctuality. These are the important skills required in each are of employment and in each field of work because the achievement or performance of any activities as the employees need the maximum time management. None should get the sense of urgency without mastering the time and punctuality. So, sense of urgency, time management and punctuality should be the culture for all the Rwandan citizens at all field of works.

The students with disabilities, especially with cognitive and developmental delay should know how to carry or the transport tickets or token because, even if we should offer the appropriate intervention to these students, we do not expect to have their daily companions in each transports they make from and to their residential areas. These people will need to work, near

and far from their residences, so, it very necessary to let them have the skills that will help them to perform the transport through their daily activities where will be necessary. It is in this view that the implementation of functional curriculum should initiate them to use it at their earlier ages of schooling.

The students with cognitive and developmental delay need their primary need relating to their daily life. Suppose that the community access have the attributions of these learners to find jobs, but they need to be taught and have the skills of how to secure health or housing services. With health needs, the learners should know how to take care on their daily life. The primary health needs, should be included the primary hygiene like administrating how to use hand- ker – chief for example and other primary hygienic cleanliness.

The students with cognitive and developmental delay who graduated from functional curriculum, present the hope of good future life due to their successful academic performance.

5.1.3. Usage of Functional Curriculum in the Special Schools in Rwanda

The design of functional curriculum is shaped in the way that every educator is facilitated to find out which best orientation of the appropriate supports for each group of students and this guarantee the improvement of academic performance of them, because of the data showed that functional curriculum is the curriculum that is adaptive to the learners with cognitive and developmental delay. The curriculum is very important in the development of quality education. Some facilities of quality education are applied during learning and teaching process;

The accessible adapted teaching and learning resources provide the opportunity for learners with cognitive and developmental delay to increase their performance

The adapted teaching methods improve the performance of learners with cognitive and developmental delay

The adapted content improve the quality of improvement on academic performance of learners with cognitive and developmental delay

The instructions used by teachers help learners with cognitive and developmental delay to perform well.

5.2. DISCUSSION

Through the objectives of the study, the objective one concerning the vocational contribution of functional curriculum to paid jobs, results showed and confirmed that the functional curriculum provides knowledge and skills like; Simple Calculation and language skills, financial skills and independent daily living. It means that A functional curriculum is presumed to include functional academic content, skills for financial aspects, long life living, transportation, vocational education, access to community, skills to social and relationships, Independent living skills & self-determination that prove a successful academic performance outcome.

While, the previous studies and research added the almost the same results as that found in this study

- Research made in Immaculata University, Jennifer Almond, (2011) in the survey of Parent and Teacher Perceptions of Academic versus Functional Skill Acquisition for Students with Significant Cognitive Disabilities, the results indicated that the functional curriculum was perceived as more beneficial for students with significant cognitive disabilities based on an increase in independence, communication, socialization, job attainment, and general life skills.
- Julie D. Southward& Kathleen Kyzar,(2017) in the study of Predictors of competitive employment for students with intellectual and/ or developmental disabilities, the results indicated several predictors that are known to improve the employment outcomes of youth with extensive supports needs, including access to work experience, expectation to employment and academics factors. Predictors pertaining to work related experiences include having paid employment while attending high school, receiving vocational skills instruction and taking on household responsibilities
- E.C Bouck, 2012 in the study of Secondary students with moderate/severe intellectual disability: considerations of curriculum and post-school outcomes from the National Longitudinal Transition Study-2. The results suggest the majority of students with moderate/severe ID received a functional curriculum as well as instruction in core content areas; however, their instruction primarily occurred in pull-out educational settings. The students also reported low rates for the post-school outcomes examined (i.e. independent living, employment and post-secondary attendance). Finally, curriculum (functional vs.

academics) was not related to any post-school outcome examined (e.g. independent living, employment).

The objective two, concerning to functional curriculum provides the participation in socio-community life, the results confirmed that we do not hesitate that the students with cognitive and developmental delay who followed it may not only move from the area to the other by themselves with public or private transportation because among of the skills they get include in reading buses or other way schedule, to maximize the skills of understanding time and punctuality but also learn how to write a grocery list for the week, shop for specific items and put food away in the proper storage areas. While the same study of Jennifer Almond, (2011), the results suggested that Academics were seen as important for students based on their individual ability levels, especially by parents, in order to increase a child's exposure, expectations, and success in society.

Then on objective three about the usage of functional curriculum provides the good orientation to educators, the results indicated, that it is designed and included the adaptability of the curriculum, the individual instructions, accessible resources, adapted content and adapted teaching methods are elements included in curriculum that present the good orientation to the educators for better use of functional curriculum.

- While the study of Jennifer Almond, (2011) declared that functional skills were necessary even though they were not mandated and a majority of the teachers thought that functional skills were the most appropriate curriculum and important to maintain a 87 student's civil rights.
- Emily C Bouck & Gauri Joshi, (2012) in the study of Functional curriculum and students with Mild intellectual Disability. Exploring post school outcomes through the NLTS2, the results of the study indicated that few students with mild intellectual disabilities received functional curriculum and receipt of functional curriculum did not influence post school outcomes.

5.3. CONCLUSIONS

It was concluded that functional curriculum through the accessible adapted teaching and learning resources, the adapted teaching methods, the adapted content and instructions used by teachers, is the curriculum that is adaptive to the learners with cognitive and developmental delay.

The data showed the functional curriculum contributes to the learners with cognitive and developmental delay the individual support services like delivering the learning opportunity in order to prepare their future lives, then this curriculum provide in such supports in which individual needs to perform in their daily long life living and their daily problems solving at all maximum opportunities.

This curriculum focuses on daily activities or practical aspects and also include academic content such like maths and language arts that are the main elements on improving academic performance. The functional curriculum then offers to the students with cognitive and developmental delay the knowledge and skills that will help prepare them for jobs that earn wages or volunteer work and provide the independent living skills in their society. This is a good performance for learners and for the citizens.

The functional curriculum provides social skills and Independent living skills that are important aspects that demonstrate the willingness and the capacity to navigate the demands of post school outcomes and also be more desirable to employers in order to perform their jobs. A functional curriculum is presumed to include functional academic content, skills for financial aspects, long life living, transportation, vocational education, access to community, skills to social and relationships, Independent living skills & self-determination that prove a successful academic performance outcome.

The students with cognitive and developmental delay who graduated from functional curriculum, present the hope of good future life due to their successful academic performance. The design of functional curriculum is shaped in the way that every educator is facilitated to find out which best orientation of the appropriate supports for each group of students and this guarantee the improvement of academic performance of them.

The learners who follow functional curriculum expect: Simple Calculation and language skills, financial skills and independent daily living, small and soft businesses creation, social-skills

building or social/relationships, and self-determination and social first aid acquisition, and societal living skills community access

5.4. RECOMMENDATIONS AND SUGGESTIONS

On the basis of the data of this research and conclusions made, as the researcher would like to mark these recommendations below:

5.4.1. Recommendations to school management

School management is advised to take an aware decision to take charge of special education aspects of their schools and explore various alternatives to ensure success for learners with cognitive and development delay.

It is also recommended that the school management can work together with different stakeholders so that they can help the educators find out the required supports that meet the learning difficulties that decrease the performance of learners with cognitive and developmental delay.

It is further recommended that extensive training of teachers combined with the exchange of expertise between special and inclusive schools be planned and implemented in order to maximize the participation of learners with cognitive and developmental delay in both social and academic activities that improve academic performance.

5.4.2. Recommendations to educators

It is clear from the data that the functional curriculum improve quality of academic performance; on the other hand it is recommended that educators should be provided with in-service training in the form of workshops. Once the educators are equipped with the necessary knowledge and skills related to the education of learners with cognitive and developmental delay that could change their views and perceptions towards special education for learners with cognitive and developmental delay. Also, through in-service educators training, learners with cognitive and developmental delay will not be limited from taking only some subjects from the curriculum that do not improve their academic performance.

5.4.3. Recommendations to the Ministry of Education

It is recommended that the Ministry of Education should allocate a budget to make major renovations and adaptations in the physical facilities of special schools to make it friendlier to

learners with cognitive and developmental delay. Ministry of Education should procure urgently needed teaching and learning assistive devices which are appropriate to all groups diverse of learners with cognitive and developmental delay. It is recommended that Ministry of Education should provide the schools with necessary assistive devices to help learners with cognitive and developmental delay.

5.4.4 Recommendations for further research

It was noted that there were issues, that were not comprehensively addressed, that arose during the conduct of this study. Therefore, the following recommendations for further research are provided:

Firstly, to evaluate what post school impact of functional curriculum towards learners with cognitive and developmental delay in Rwandan social economic development aspect.

Then to analyse the relationship between functional curriculum and academic performance of learners with cognitive and developmental delay

Lastly, to analyse problem often faced by educators educating learners with cognitive and developmental delay in special schools in Rwanda.

5.5. STRENGTHS AND LIMITATIONS OF THE STUDY

5.5.1 Strengths

The study was confined only to two selected special schools in Rwanda. Other special schools in Rwanda were not concerned with this study. It was focusing only to the learners with cognitive and developmental delay, their educators and school administrators. The research targeted only relationship between functional curriculum and academic performance. This research was participated by learners with cognitive and developmental delay from those two special schools in academic year 2015-2021.

5.5.2 Limitations

The study was limited to analyse of data due to the fact that the respondents gave the limited information owing to research gathered information only from two special schools; HVP Gatagara Gikondo and HVP Gatagara Ndera.

REFERENCE

1. Amineh, R. J., & Asl, H. D. (2015). Review of Constructivism and Social Constructivism. *Journal of Social Sciences, Literature and Languages, 1*(1), 9
2. Angi Stone-MacDonald, (2012). Preparing Children with Developmental Disabilities for Life in the Community: A Tanzanian Perspective
3. Kristy A Anderson , Paul T Shattuck , Benjamin P Cooper , Anne M Roux & Mary Wagner, (2014). Prevalence and correlates of postsecondary residential status among young adults with an autism spectrum disorder
4. Borisov and Reid (2010). Students with intellectual disabilities acting as tutors: An interpretative phenomenological analysis. *European Journal of Special Needs Education, 2010. 25*(3): p. 295-309.
5. Bouck (2010). Reports of life skills training for students with intellectual disabilities in and out of school. *Journal of Intellectual Disability Research, 2010. 54*(12): p.1093-1103.
6. Bouk and Gaudy, (2012). Education and training in autism and developmental disabilities 2012, *47*(2), 139-152

7. Cease-Cook, and Scroggins (2013). Effects of the CD-ROM Version of the 'Self-Advocacy Strategy' on Quality of Contributions in IEP Meetings of High School Students with Intellectual Disability. *Education and Training in Autism and Developmental Disabilities*, 2013. 48(2): p. 258-268.
8. Dada and Alant (2016). Inclusion, Equity and Access for Individuals with Disabilities: Insights
9. Douglas (2011). The Effectiveness of Electronic Text and Pictorial Graphic Organizers to Improve Comprehension Related to Functional Skills. *Journal of Special Education Technology*, 2011. 26(1): p. 43-56.
10. Elena Lisa, Katarina Hannelova & Denisa Newman (2019). Comparison between employers' and students' expectations in respect of employability skills of university graduates
11. Emmanuel Mberimana, (2018). Factors that Hinder Academic Performance of Learners with Visual impairments;
12. Emily C. Bouck and Gauri Joshi, (2012). Functional Curriculum and Students with Mild Intellectual Disability: Exploring Post school Outcomes through the NLTS2;
13. Emily C. Bouck and Rajiv Satsangi (2014). Evidence-Base of a Functional Curriculum for Secondary Students with Mild Intellectual Disability: A Historical Perspective) ((September 2014), pp. 478-486 (9 pages)
14. Emily C. Bouck, (2017). Educational Outcomes for Secondary Students with Mild Intellectual Disability;
15. Ernest ngendahayo & Helen askell-williams (2016). Rwanda's New Competence-Based School Curriculum;
16. Fiona Middleton, (2019). Reliability vs. Validity in Research | Differences, Types and Examples
17. Ganiah I. Ain (2018). What is the Appropriate Curriculum for Students with Disabilities? Standards-Based Curriculum versus Functional Curriculum for Students with Disabilities

18. Goril Moljord, (2017). Curriculum research for students with intellectual disabilities: a content- analytic review
19. Hillary Johnson & Ross Wiener, (2017). Integrating Social and Emotional Development and College- and Career- Readiness Standards,
20. Jennifer Almond, (2011). Parent and Teacher Perceptions of Academic versus Functional Skill Acquisition for Students with Significant Cognitive Disabilities
21. Julie D. Southward& Kathleen Kyzar, (2017). Predictors of competitive employment for students with intellectual and/ or developmental disabilities
22. Karim Karaki and Alfonso Medinilla, (2016). Donor agencies and multi-stakeholder partnerships: Harnessing interests or herding cats?
23. Kendra Cherry, (2020). The four stage of cognitive development. Back ground and key concepts of Piaget's theory.
24. Liehr & Smith, (2001). An Evidence-Based Health Information System Theory
25. Lisa Holland and Kendel St. John (2021). Supported Decision-Making. VCU Center on Transition Innovations.
26. Michael R. Benz, Lauren Lindstrom, [Deanne Unruh](#), [Miriam Waintrup](#) (2014)Sustaining Secondary Transition Programs in Local Schools
27. Ministry of Education, Rwanda Education Board (2017). Adapted curriculum for children with Cognitive & Developmental Ddisabilities (CDD), **Kigali**.
28. Nelson Mbarushimana, Joshua M. Kuboja (2018). Saudi Journal of Business and Management Studies A paradigm shift towards competence based curriculum: The Experience of Rwanda.
29. Oklahoma State Department of Education, (2017). Oklahoma's Secondary Transition Hand book.

30. Plavnick, J.B., T. Kaid, and M.C. MacFarland, (2015). Effects of a school-based social skills training program for adolescents with autism spectrum disorder and intellectual disability. *Journal of Autism and Developmental Disorders*,
31. Saul Mcleod, (2019) *Constructivism as a theory for teaching and learning*,
32. Tricia L. da Silva, Konstantine Zakzanis, Joanna Henderson & Arun V. Ravindran, (2017). Predictors of Post-Secondary Academic Outcomes among Local-Born, Immigrant, and International Students in Canada: A Retrospective Analysis
33. Wong, M.W. (2015). Adapting the Music Curriculum for Senior Secondary Students with Intellectual Disabilities in Hong Kong: Content, Pedagogy and Mind sets. *Music Education Research*,
34. The UNESCO Salamanca Statement, (2020). Centre for Studies on Inclusive Education *Supporting inclusion, challenging exclusion*
35. Vanessa Hein and Becky Smerdon, Quill Research Associates, LLC, and Megan Sambolt, American Institutes for Research (2013). Predictors of Postsecondary Success

APPENDIX

APPENDIX A. Questionnaire for learners with cognitive and developmental delay

Please complete the questionnaire by responding to all questions. Information that you give will be kept confidential and only be used for the purpose of this study to improve education of students with cognitive and developmental delay in the special schools of Rwanda.

Section A (Personal information).

Please tick where appropriate

Age:

17 years – 21 years

22 years – 26 years

27 years – 31 years

Above 31 years

Gender:

Female Male

Group of study and area of study where applicable:

Group 1

Group 2

Group 3

Section B

1. Is the functional curriculum adaptive to learners with cognitive and developmental delay in your school?

1. Are appropriate teaching and learning materials raise the performance of learners in your institution? Yes No

2. Are the adapted teaching and learning resources accessible provide the opportunity for all students to increase their performance in your school/ institution? Yes No

3. Are the adapted teaching methods improve the performance of learners in yours school? Yes No

4. Are the adapted content improve the quality of improvement on academic performance of learners with cognitive and developmental delay in your school? Yes No

5. Are the instructions used by teachers help learners with cognitive and developmental delay to perform well? Yes No

SECTION C.

Answer the questions by encircling the number corresponding to the extent at which you agree or disagree with the statements below. The numbers and corresponding assertions are as follows: 1= Strongly Agree. 2= Agree 3= Disagree 4=Strongly Disagree

NO	STATEMENT	POSITION
1	Learners with cognitive and developmental delay need the individual support services like delivering the learning opportunity in order to prepare their future lives	Strong agree Agree Disagree Strong disagree
2	The functional curriculum focuses on day-to- day tasks or practical aspects and also include academic content such as math and language arts	Strong agree Agree Disagree Strong disagree
3	The vocational portion of a functional curriculum offers students with knowledge and skills that will help prepare them for paid jobs or volunteer work and provide the independent living skills.	Strong agree Agree Disagree Strong disagree
4	The social skills and Independent living skills provided by the functional curriculum are important aspects that demonstrate greater persistence and ability to navigate the demands of post school outcomes and also be more desirable to employers.	Strong agree Agree Disagree Strong disagree
5	Typically, a functional curriculum is presumed to include functional academics, financial skills, daily living, transportation, vocational	Strong agree

	education, community access , social skills and relationships, Independent living skills and self-determination that prove a successful academic performance outcome	Agree Disagree Strong disagree
6	The students with cognitive and developmental delay who graduated from functional curriculum, present the hope of good future life due to their successful academic performance.	Strong agree Agree Disagree Strong disagree
7	The design of functional curriculum is shaped in the way that every educator is facilitated to find out which best orientation of the appropriate supports for each group of students and this guarantee the improvement of academic performance of them..	Strong agree Agree Disagree Strong disagree

SECTION D. This question is an ended open question, please be free for your own opinion

6. Have learners ever followed functional curriculum in special schools of Rwanda graduated? If any, what their outcome for nowadays?

.....

.....

.....

.....

.....

.....

.....

APPENDIX B. Guided interview

How do you think functional curriculum should improve the academic performance of students with cognitive and developmental delay?

What do you think students with cognitive and developmental delay who graduated should be able to do after schooling?