THE INFLUENCE OF RECEPTIVITY TO INSTRUCTIONAL FEEDBACK AND ANXIETY IN LEARNING MATHEMATICS AMONG SENIOR TWO SECONDARY SCHOOL STUDENTS IN NAMUTUMBA DISTRICT, EASTERN UGANDA

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Approval

This dissertation has been produced under my/our supervision and submitted for examination with my/our approval as the appointed academic supervisor/s.

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DEDICATION

I dedicate this research dissertation to my family members, my wife Ms. Kataike Lydia for her encouragement rendered to me through the process of research writing.

ACKNOWLEDGEMENTS

First, I thank the Almighty God for protecting, leading and directing me through-out the course of this research. Without Him the entire dream of completing this course would not have been possible.

Achieving this milestone of a master's qualification would not have been possible without the commitment, dedication, and unwavering support of my parents, siblings, friends, colleagues, course mates and lecturers.

In the process of conducting research and writing this dissertation, I have had an opportunity both to interact with and to benefit from many people, who contributed to the completion of this study in one way or another. Some of these people have directly read through the drafts and made valuable comments, whereas others have listened patiently and have responded with enthusiasm, no doubt, seemingly endless enquires regarding my research.

I am, therefore, taking this opportunity to thank them all. Although it may not be possible to mention all their names behaviorally, I will forever be indebted to their valuable contribution.

However, there is an important person whose name I feel must be mentioned. I am indebted to my supervisor Dr Charles Muwonge for his mentorship and guidance throughout this study. May the Almighty God bless him the more.

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LIST OF ACRONYMS

CBC: Competency Based Curriculum

DSIR: District School Inspection Report

MOES: Ministry of Education and Sports

NAPE: National Assessment of Progress in Education

NCDC: National Curriculum Development Centre

RIF: Receptivity to Instructional Feedback

SPSS: Statistical Package for Social Sciences

S.2: Senior Two

UCE: Uganda Certificate of Education.

UNEB: Uganda National Examinations Board

ABSTRACT

This study examined the relationship between receptivity to instructional feedback and anxiety in learning mathematics among S.2 students in the selected secondary schools in Namutumba District. The study was grounded by control value theory of achievement emotions, and guided by the specific objectives: to establish the associations between receptiveness to instructional feedback and anxiety towards learning mathematics; to examine the differences in the levels of mathematics anxiety with respect to students' demographic characteristics, and to establish the extent to which receptiveness to instructional feedback predict anxiety towards learning mathematics. The study adopted a cross-sectional design, using quantitative approach. The study population was 685 S.2 students in all the 3 selected secondary schools in Namutumba District. The study used simple random sampling to select a sample of 306 students determined using Krejcie and Morgan (1970) table. A self-administered questionnaire was used to collect the data. The findings revealed that there is a statistically significant moderate positive association between students receptiveness to instructional feedback and mathematics anxiety as ($r=0.560^{**}$, $p<.01$), there is a statistically significant difference in the levels of mathematics anxiety with respect to the students' demographic characteristics ($F=8.718,\ p=0.000<.05$), and students' receptiveness to instructional feedback counted for 31.1% of the variance in mathematics anxiety (Adjusted R Square=.311). The study concluded that: students' receptiveness to instructional feedback is associated with mathematics anxiety among senior two secondary school students in Namutumba District; the levels of anxiety arise from demographic characteristics of senior two secondary school students in Namutumba district and receptiveness to instructional feedback predicts anxiety towards mathematics among senior two secondary school students in Namutumba District. The study also recommended that school administrators, policy makers, parents and other stakeholders in education to: design instructional processes that are responsive to the anxiety faced by senior two students in learning mathematics by ensuring behavioral and cognitive engagement, change both instrumental and experiential attitude of S.2 students in Namutumba District; cater for students' individual differences in learning mathematics basing on gender, birth order and age. Lastly, school administrators to invest more resources like time in ensuring that students receive supportive instructional feedback with the aim of improving engagement and performance in learning mathematics

CHAPTER ONE

INTRODUCTION

1.0 Introduction

It is vital that students build confidence in their ability to do mathematics, as deficiencies in this area would be a major impediment to many facets of life. Therefore, receptiveness to instructional feedback could be a missing link to positive emotions in learning mathematics among senior two Secondary school students in Namutumba District**.** This chapter presents the background to the study, statement of the problem, objectives of the study, hypothesis, and scope of the study, significance of the study, justification of the study, conceptual framework and definition of the key terms.

1.1 Background to the Study

The government of Uganda placed much emphasis in teaching and learning of science subjects (MOES, 2020). The ministry emphasizes on Education that equips students with practical knowledge, skills, values and attitudes that are necessary to survival in a professional society (NCDC, 2020). However mathematics anxiety is known to have deleterious effects on mathematics performance among secondary school students (NCDC, 2020). The assumption that mathematics anxiety was directly related to students' receptivity towards instructional feedback in learning mathematics had not yet been validated (Koch and Li, 2017). It was for that reason that this current study examined the influence of receptiveness to instructional feedback and anxiety in learning mathematics.

1.1.1: Historical Perspective

In US, mathematics anxiety was estimated to range from about 50% to 80% for college students (Beilock & Willingham 2014). In 2015, Australia formed the Australia Mathematics science Institute aimed at increasing participation of students in mathematics and other science related discipline. This predicted that mathematics anxiety has got diversifying history of anxiety in learning mathematics among secondary school students in developing countries. The indicators of mathematics anxiety such as feelings of tension, fear, avoidance of mathematics tasks, manifest themselves among students across the globe.

In Uganda, mathematics anxiety was pointed out as the major cause of poor performance among secondary school students in national exams (Uganda National Examinations Board (UNEB) Report on Uganda Certificate of Education (UCE) examinations 2022). To obtain a first grade in Uganda Certificate of Education (U.C.E) a student must pass mathematics as a determinant subject. The importance attached to mathematics in the national examinations could have translated into anxiety as a misconception among students in high schools most specially S.2 students in the selected secondary schools in Namutumba District.

Mathematics anxiety starts in primary level of education but it increases as a learner advances to high levels of education (Koch and Li, 2017). Specifically, in Namutumba district where this current study was carried out, mathematics anxiety was reported as the major hindrance to good academic performance among students across the district (Namutumba district inspection report, 2022.). In the selected secondary schools, senior two students showed more vulnerability to mathematics anxiety than senior one, three and four in lower secondary (Namutumba district secondary schools academic board, 2021). Dodging lessons, tearing off marks and comments

written by teachers about mathematics tests or assignment was the common practice, most especially among S.2 students (Namutumba district secondary schools academic board, 2021). Despite the fact that admission of students to senior one was restricted to learners who passed mathematics in Primary Leaving Examinations (P.L.E), students most especially those in senior two had persistently showed a lot of fear towards performing mathematics related tasks while in and outside the classroom.

Mathematics anxiety frustrated government's effort to create positive mind set among teachers and student to enjoy competency-based teaching and learning of mathematics as structured in the lower secondary schools curriculum (Koch and Li, 2017). This posed a great hindrance to furtherance of academic career among students, and development of creative thinking skills needed for sustainable development in this 21st century. In respect to that, this current study examined the relationship between receptivity to instructional feedback and anxiety in learning mathematics.

This current study intended to shape the learning of mathematics through encouraging instructional receptivity among senior two students in the selected secondary schools in Namutumba district. As much as mathematics teachers provide instructional feedback to students about their learning, students' behavior showed lack of receptivity. Students feared calculating numbers, dodged mathematics lessons, hardly discussed comments written on their mathematics assignment or test. Tearing off comment was the common practice most especially by low score of below 30%. Students had a paradigm that mathematics was a difficult subject. Students were not free to ask questions, and they were unwilling to construct meaning from instructional

feedback provided by mathematics teachers on the assignment or test done (Namutumba district inspection report, 2022). Ideally, instructional process require social interaction between the student and student while and after classroom situation. Although student's interpretations and emotional reactions to the comment given by the mathematics teacher could influence student's performance, this cognitive and emotional processes remain understudied (Çelik, 2021). This situation was a threat to teacher-student relationship in the selected secondary schools in Namutumba District.

Distinct learner responses to feedback were categorized into; cognitive, behavioral, affective, and contextual (Celia, 2021). This could imply that instructional feedback influence the internal and external ability of a student to function either positively or negatively in mathematics related tasks in and outside the classroom. When an instructional feedback is given, student should internally perceive it, and relate concepts to the external environment for life-long learning. This was not practiced by S.2 students in the selected secondary school in Namutumba district due to negative learning emotions such as anger, fear, anxiety which they had towards learning mathematics for the last eight years. Therefore there was need to foster students receptivity towards instructions provided by teachers as a strategy to overcome mathematics anxiety S.2 students are faced with for improved learning outcome.

Instructional feedback could benefit students most when focused on learner needs, via engagement in bi-directional dialogue between a teacher and student. This implied that student's emotions must be supported through creation of positive teacher-student relationships. In reality, there S.2 students kept a distance from mathematics teachers. Poor teacher-student relationship

could be associated to the paradigm that mathematics was difficult subject. This consequently created negative emotions towards among students towards instructional feedback in learning mathematics. Yet student's acceptance of instructional feedback enhances performance through elimination of errors made by students when performing mathematics assignments. Instructional feedback has been regarded as an ingredient for enhanced academic performance among students for more than six decades (Beilock and Willingham 2014). Lack of receptivity to instructional feedback given by mathematics teacher left students' mistakes uncorrected. This explained poor academic performance exhibited by senior two students in the selected secondary schools in Namutumba district for over eight years (Namutumba district secondary schools assessment report 2022). It is for that reason that the current study examined the relationship between receptivity to instructional feedback and anxiety in learning mathematics among senior two students in the selected schools in Namutumba district.

1.1.2 Conceptual perspective.

The present study explored the concepts of receptivity to instructional feedback and mathematics anxiety as they form independent and dependent variables of this study.

Receptivity may increase knowledge by reducing the discrepancies between student's current understandings and academic performance most especially in learning mathematics. In that perspective, instructional feedback is a good ingredient in the implementation of the mathematics curriculum because when students develop receptivity to teacher's feedback, they build competency such as confidence and interest to perform tasks involving manipulation of numbers

while at school and after school hence overcoming emotions such as anxiety towards mathematics for productive living. By implication, receptivity to instructional feedback can be predicted as an ingredient used to build capacity among students to correct his/her mistakes, consequently overcoming mathematics anxiety for increased academic achievement.

Receptivity to instructional feedback was defined as the consciousness, openness and the willingness by students to accept external comment on their performance (Lipnech *et-al,* 2021). Some students are generally eager to receive external comment on their progress or performance whereas others may be less welcoming of it. These differences could be situational and context-dependent, but a general, trait-like receptivity to instructional feedback appears to be a gap in students' learning (Lipnech, 2021). The studies reveal that students who receive timely feedback and are receptive to this feedback were free from mathematics anxiety, able to improve on their performance and behavior, contrary those who are not receptive to feedback (Caraway *et-al* 2003).

Instructional feedback is processes through which students receive information concerning their learning that could enable them improve their work. In reality, giving feedback to a student who is not ready to use it to improve on his/her performance is equally useless as students continue to perform poorly and behave badly. Feedback refers to the information given to a student about his/her performance relative to learning goals such as improving students' achievement in mathematics (Pekrun 2000). This becomes clear that instructional feedback improve classroom communication between the teacher and the learner only if students are receptive. Instructional feedback for students points out the problems manifested in student's work and encouraging them

not to give up. Lipnevich *et-al* (2016) described a model of instructional feedback where they discussed feedback information, student as the recipient of the feedback, and how the two interact. The idea was based on the premise that there could be individual differences in the way students were willing or not willing to accept the feedback (Lipnevich *et-al* 2016: Lipnevich and Smith, 2009).

In connection to the above, instructional feedback reinforces student's behavior following the objectively measured worth of an action or behavior (Jones, Johnson and Campbell 2015). Whereas Mathematics anxiety refers to feelings of tension that interfere with the manipulation of numbers and the solving mathematical problems in a wide variety of ordinary life and academic situation (Tobias, 1993). Therefore, mathematics anxiety is a two-dimensional construct comprising cognitive domain and affective domain; these domains differ in their relationship with mathematics learning (Beilock &Willingham, 2014).

Mathematics anxiety refers to feelings of tension that interfere with the manipulation of numbers and solving mathematical related problems in a wide variety of ordinary life and academic situation (Tobias, 1993). Persisted mathematic anxiety among students contributes to poor performance among students. It was later realized that feedback only begins the process that leads to student improvement (Jonsson, 2013). It was uniformly accepted by researchers and education practitioners that feedback was only effective if used, and it would only be used if a student has the right context, information, dispositions, and approach to how to use it. Mathematics anxiety on the other hand refers to feelings of tension that interfere with the manipulation of numbers and the solving mathematical problems in a wide variety of ordinary life and academic situation

(Tobias, 1993). The introduction of receptivity to instructional feedback in this study is intended to develop willingness in student to welcome and use external comment given by a teacher about his/her work or performance.

Mathematics anxiety is negatively related to mathematics leaning more than affective mathematics anxiety in the sense that lack of instructional feedback among students increases the level of mathematics anxiety. This finding suggests that teachers should promote adherence to instructional feedback among senior two students so as to support students build adequate competencies, and enjoy learning mathematics for improved performance.

Pekrum, (2000) recommended that stake holders of education should address students' emotions from both cognitive and affective perspectives of mathematics anxiety. There is need therefore to cause interaction between instruction feedbacks, students' anxieties and the learning stimuli for improved learning. For that reason, the current study is deemed necessary.

1.1.3. Theoretical Perspective

This study was guided by the control-value theory of achievement emotions (Pekrun, 2000). Control value theory of achievement emotions is an integrative approach to emotions in education (Csikszentmihalyi, 2000). It was developed by Reinhard Pekrun in 2000. The control value theory of achievement emotions was first applied in 2007 in a study that aimed at exploring how emotions like enjoyment and anxiety in achievement settings are influenced by perceptions of control and value they place on the outcome among university students in Munish University,

Germany. The findings revealed that perception of control and value has a significant influence of emotions like enjoyment and anxiety among university students.

The researcher opted to use this theory because it strongly believes in the student's ability and the worth of the outcome of the instructional process. Good behavior is encouraged while bad behavior is discourage most especially in learning mathematics among senior two secondary school students. This could overcome negative emotions such as; anxiety, frustration and boredom experienced by students in learning mathematics.

The theory also stressed that a student with mathematics anxiety manifest indicators such as hopeless, pride, shame and hanger as the outcome of failure. This negatively impact on students' adherence to instructional feedback in learning mathematics. Integrating the control value theory of achievement emotions in this current study would enable students to manifest outcome emotions of success such as; joy, hope, confidence and collaboration as ideal factors in the implementation of educational curriculum. That would replace mathematics anxiety faced by S.2 students in the selected secondary schools in Namutumba District. Therefore the theory would help in nurturing student's behaviors through training emotions management in relation to the mediate environment in learning mathematics for improved performance.

1.1.4. Contextual perspective

As much as Mathematics was major compulsory science subjects in lower secondary education, students most especially those in senior two in the three selected secondary schools in

Namutumba District manifest a lot of anxiety towards learning and working out problems involving numbers. The students performed poorly in mathematics and that significantly affected the overall grades of students (schools assessment reports for Term III, 2023). Out a total of 685 senior two students in the three selected secondary schools, 603 students (88%) sat for mathematics end of term three examinations while 82 students (12%) dodged the examination.

That tickled the researcher to think that mathematics anxiety could be associated to school dropout among students. Out of a total of 603 students who sat for mathematics examination whose pass mark was 30%, 202 students (33.4%) failed while 401 students (66.6%) passed. That affected the overall grades of students negatively as only 11% of the students passed in Grade one. Precisely speaking students had lost their academic vision of becoming doctors, engineers, and statistician among others. Leaving other factors constant, mathematics anxiety experienced by students was reported as the major cause for such behavior in all the three selected secondary schools (Namutumba District inspection report, 2022). Students shy away from doing combinations involving mathematics for instance Biology, Chemistry and Mathematics (BCM), Physics Economics and Mathematics (PEM) among others (school career guidance minutes, 2023).

All the three selected secondary schools carried out career guidance for senior two students in preparation for selection of combination to be done in senior three from well informed point of view. Disappointingly, 411 students (60%) of the students in the selected schools showed no interest towards mathematics related combinations for the reason that manipulation of numbers could make them feel emotionally upset (School career guidance report, 2023). That frustrated

the government effort of providing education that prioritized science courses if no timely intervention is undertaken. It was noted that an average of 6 out of 10 indiscipline cases reported in each of the three selected schools per week were mathematics anxiety related. For example, dodging mathematics tasks, nicknaming mathematics teachers, faking results, violence at school among others (school disciplinary committee minutes 2023). Mathematic anxiety contributed an average of 60% of indiscipline cases in the three selected secondary schools, and caused a total of 8 students expulsion from school in the academic year 2023 (school disciplinary committee minutes 2023).

Instructional feedback on formative assessment was meant to support student build competency in the areas of weakness, and at the same time measure and shape student's learning (Winne & Butler, 1994). In reality, S.2 students in the selected schools in Namutumba district disregard instructional feedback on formative mathematics tests. When students neglect instructional feedback from teachers and peers, mistakes go uncorrected and good performance is not reinforced, which may adversely affect not only students' interest towards mathematics but also their future career (Bose & Rengel, 2009). It was against such back ground that the present study examined the relationship between instructional feedback and anxiety in learning mathematics among S.2 students in the selected secondary schools in Namutumba District so as to enhance academic performance.

1.2 Statement of the problem

The problem of this study is mathematics anxiety. Learning mathematics has been frustrated by anxiety in the selected secondary schools in Namutumba District for the last five years, (Namutumba District schools inspection report, 2023). Mathematics evaluation anxiety, social anxiety and observation anxiety were the common forms of anxiety manifested by S.2 students. 70% of lower secondary students most especially those in S.2 reported that they were uncomfortable and they do not enjoy mathematics lessons (Namutumba District joint secondary schools assessment report, 2023). This was earlier on pointed out in the National Assessment of Progress in Education (NAPE) report (2021). Available studies such as; Çelik, (2021), Sahri, Kamaruzaman, Jamil, & Shaharanee, (2017) attributed mathematics anxiety to teacher competency while Estonanto & Dio, (2019), associated mathematics anxiety to students' individual characteristics and poor analytical skills of the students.

What remained unclear was whether Senior Two students' low receptivity to instructional feedback was contributing to persistent mathematics anxiety and poor performance. If the problem of mathematics anxiety is not addressed, the academic performance of students in Uganda Certificate of Education (U.C.E) would continue to decline since mathematics is a core science subject, consequently Namutumba district may lack scientists in the labor market. It was against such a background that this current study examined the relationship between anxiety faced by S.2 students in learning mathematics and receptivity to instructional feedback for progressive performance.

1.3. Objectives of the Study

This study was guided by the objectives below;

1.3.1. General Objective

This study examined the relationship between instructional feedback and anxiety in learning mathematics among S.2 students in the selected secondary schools in Namutumba District.

1.3.2. Specific Objectives

i. To establish the associations between receptiveness to instructional feedback and anxiety towards learning mathematics by senior two students in the selected secondary schools in Namutumba District.

ii. To examine the levels of mathematics anxiety with respect to the students' demographic characteristics among senior two students in the selected secondary schools in Namutumba District.

iii. To establish the extent to which receptiveness to instructional feedback predict anxiety towards learning mathematics among senior two students in the selected secondary schools in Namutumba District.

1.4 Research Hypothesis

HO_1 Receptiveness to instructional feedback has no statistically significant association with anxiety in learning mathematics among senior two secondary school students in Namutumba District

HO_2 Learners' demographic characteristics have no statistically significant differences in the levels of mathematics anxiety among senior two secondary school students in Namutumba District

HO_3 Receptiveness to instructional feedback does not predict anxiety towards mathematics among senior two secondary school students in Namutumba District

1.5. Scope of the Study

This current study was restricted to; content scope, geographical scope and time scope.

1.5.1 Content Scope

In this current study, the researcher limited himself in examining the independent and dependent variables as they form the topic of the study ''Influence of receptivity to instructional feedback and anxiety in learning mathematics among senior two students in the selected secondary schools in Namutumba District. This would ensure students' receptiveness to instructional feedback which would support students overcome anxiety they were faced with in learning mathematics. Therefore, this study examined the influence of receptivity to instructional feedback and anxiety among senior two secondary students in learning mathematics.

1.5. 2. Geographical Scope

This study was carried out in Namutumba District. The researcher chose to carry out the current study in Namutumba District because he is employed within the district as a primary school teacher. Namutumba District is located along Iganga Tirinyi high way in Busoga sub-region in

the Eastern region of Uganda. Eastern region's Capital Jinja, approximately 69 KM/ 43 mi away from Namutumba (as the crow lies). The distance from Namutumba District to Uganda capital Kampala is approximately 130Km/ 84 mi (as the crow lies). On the grid, Namutumba District is between Latitude 0° 50' 10" N (0.8361100) and Longitude 33° 41' 10" E (33.6861100). And (0 Lat):93 North of Equator.3.750Km.

Namutumba District was created by Act of the Ugandan parliament in 2005 and became operational on 1st July, 2006. Prior to that the district was part of Iganga district and was known as Busiki County. The district headquarters are located at formerly Saza headquarters, Busiki county Kaiti village. Currently Namutumba district has eight government aided mixed-day and boarding secondary schools. Namutumba District has a total area of 801.87 Sq Km is sharing borders with Pallisa District in the North, Kibiku in the North East, Butaleja District in the South East, Bugiri District in the South, Iganga District in the South-west and Kaliro District in the North- west.

1.5.3 Time Scope

This study gathered primary data from April 2024 through June 2024. The study was cross sectional, as opposed to a longitudinal one, and quantitative data was acquired all at once. The study collected primary data relevant to the period from 2020 to 2024 for which the problem of mathematics anxiety was monitored in Namutumba District (Namutumba District schools inspection report, 2023).

1.6. Significance of the Study

i. To begin with, the findings of this study was directed towards supporting students to become receptive to instructional feedback from teachers and peers as a strategy of overcoming anxiety such as fear, boredom and hopelessness in learning mathematics. This would enable students to enjoy learning mathematics for improved academic performance.

ii. The findings of this study would also benefit the curriculum implementers; teachers, school administrators, and the community who seek to better understand the anxiety faced by students in learning' mathematics. This is expected to attract collective responsibility among stake holders to ensure that students become of receptive to instructional feedback in learning mathematics.

iii. This research dissertation would also enable the researcher to attain a Master's Degree in curriculum design and development having demonstrated practical knowledge and skills in carrying out systematic investigation, analysis and application of new insights in addressing educational problems based on empirical evidence.

1.7. Justification of the Study

i. Mathematics anxiety has contributed not only to poor academic performance but also to indiscipline behaviors such as aggressiveness, fights, dodging classes, and disrespect among students in Namutumba District for the last five years (Namutumba secondary head teachers' association, 2022).

ii. Mathematics anxiety has frustrated students to enjoy learning mathematics and offering combinations involving mathematics such as Physics, Economics and Mathematics (PEM), Mathematics, Economics and Geography (MEG), Physics, Chemistry and Mathematics (PCM) in furtherance of their academics endeavors (Namutumba secondary head teachers' association, 2023). That left students, teachers, parents among other stake holders of secondary school education pondering about the next point of action to take, given the fact that the admission of students to S.1 was restricted to learners who passed mathematics in Primary Leaving Examinations (P.L.E). Why then wass mathematics anxiety high among S.2 students?

iii. Namutumba district may lack scientist such as doctors, science teachers, and agricultural personnel to render services beyond their cultural boundaries in this 21st century. This is because all science courses and daily life activities involve mathematical skills and knowledge. It is for that matter that this study was intended to foster receptivity to instructional feedback as a strategy to overcome mathematics anxiety among S.2 students in Namutumba District. Meaning full engagement between a teacher and students, and also among peers would support to individual students to construct meaning out of instructional feedback while and after mathematics class would be enhanced. This is to build competency among students to enjoy learning and performing activities involving mathematics.

iv. Developing positive emotions towards learning mathematics would enable senior two students in the selected secondary schools to critically reflect on how skills learnt in mathematic support life- long experiences such as calculating change, making shopping list, taking measurements among others while and after school. This is to project the good image

of competency based curriculum for lower secondary schools to the parents and the community members.

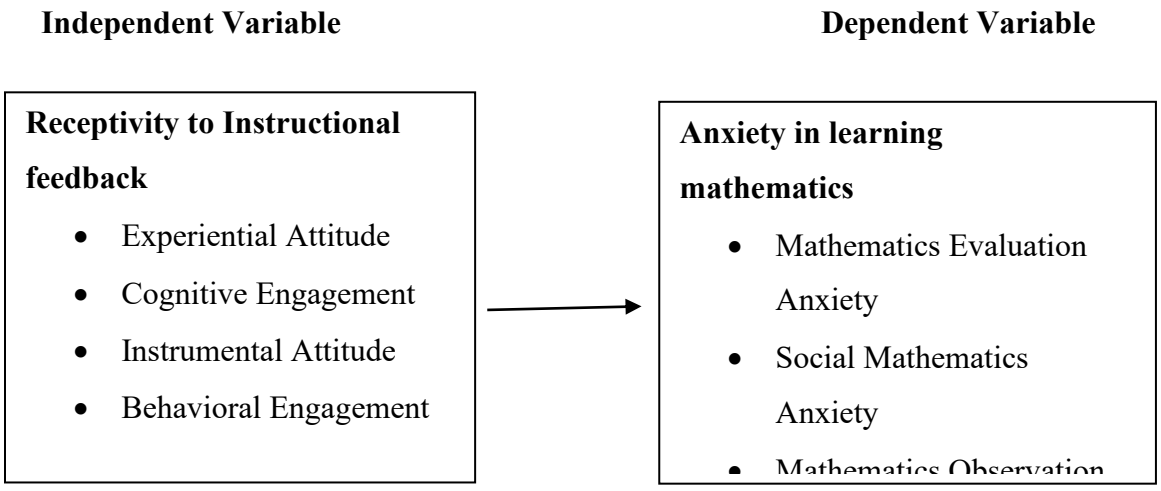
v. This study focused on addressing anxiety related problems such as hopelessness, anger, boredom as experience by S.2 students in learning mathematics, and performing tasks related to mathematics while and after school for improved academic performance and productive living in the society.

1.8. Conceptual frame work

This is a diagrammatic representation about the interrelatedness between the independent variable and dependent variable as reflected in the conceptual model.

Figure 1.1: A conceptual framework illustrating the relationship between receptivity to instructional feedback and anxiety in learning mathematics.

Figure 1.1: Relationship Receptivity to Instructional feedback and Anxiety in learning Mathematics



Source: Adopted and Modified from Lipnevich, Gjicali, Asil, & Smith (2021).

In the conceptual framework above, receptivity to instructional feedback was the independent variable and was measured in terms of experiential attitude, cognitive engagement, instrumental attitude and behavioral engagement. In the same framework, Anxiety in learning mathematics

was the dependent variable and was measured in terms of mathematics evaluation anxiety, social mathematics anxiety and mathematics observation anxiety.

1.9. Definition of the key terms.

The key terms below were defined in the context of this current study.

Students - In this study students would be taken to mean the participants in the study that are members of second year in the lower secondary education in Uganda.

Senior two students- are learner in the second year of lower secondary education in Uganda.

Anxiety: In this study anxiety would be taken to mean the feelings of tension and fear that interfere with student's performance in academic situation and in a wide variety of ordinary life. It is an issue that affects many disciplines across multiple countries and sectors.

Mathematics anxiety can be defined as a feeling of tension, apprehension and anxiety that interferes with mathematics performance ability, the manipulation of numbers and the solving of mathematical problems in a wide variety of ordinary life and academic situations (Erdoğan, Kesici, & Şahin, 2011).

Receptivity to instructional feedback questionnaire (RIFQ) - the instrument used to assign receptivity to instructional feedback scale score. It aimed at determining the feeling student had about teacher's comment on his/her tests or assignment.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

This current study reviewed literature on the relevant theories and used study objectives as themes for empirical studies.

2.1 Theoretical Framework

Whereas many theories and studies have attempted to address single emotions anxiety such as test Anxiety; (Csikszentmihalyi, 2000), or single functions of emotions (for example, their impact on cognitive processes; Ashby, Isen, & Turken, 1999), the control-value theory of achievement emotions (Pekrun, 2000; Pekrun, Frenzel, Goetz, & Perry, in press; Pekrun, Goetz, Titz, & Perry, 2000a, b) offer an integrative approach to examine the relationship between receptiveness to instructional feedback and mathematics anxiety.

The control-value theory of achievement emotions believes in appraisals of achieved behavior, values, knowledge and skills as a measure of developing positive emotions among students towards learning mathematics (Csikszentmihalyi, 2000). By implication, when students are appreciated for the little achievement, the level of receptivity to instructional feedback increases. Basic components of regulation are recognition and understanding of one's own emotions, managing these emotions by inducing, modulating, or preventing them, and using emotions for action and goal attainment (Matthews, Zeidner, & Roberts, 2002). This tickled the researcher to think that the control-value theory may increase the level of receptivity by linking student's emotions, feedback, and their influence in learning achievement.

Management of student's emotions in teaching and learning mathematics may overcome mathematics anxiety such as uneasiness and nervous feelings (affective component), worries (cognitive), and avoidance motivation (motivational), anxious facial expression (expressive), and peripheral physiological activation (physiological) students have towards learning mathematics. The conceptual integration of receptivity to instructional feedback and anxiety in learning mathematics among senior two students in the three selected schools in Namutumba District remains an issue that required conclusion based on empirical evidence.

All that should therefore be catered for in the teacher's pedagogy for instructional process for instance, the purpose of teaching, content structure, the technology or stimuli to aid learning, methodology, lesson activities and assessment strategy.

2.2 Associations between Receptiveness to Instructional Feedback and Mathematics Anxiety

Curriculum design provides instructional suggestions, graded content and assessment options related to a set of objectives as a guide for teachers to follow when implementing the curriculum (NCDC, 2020). Receptivity to instructional feedback refers to the consciousness, openness and the willingness to accept external comment on their performance (Lipnech at-el, 2021). Following instructions is an important ability in influencing grades, learning subject matter, and correctly applying skills (Lipnevich & Loopera-Oquendo, 2022).

Instructional feedback is processes through which students receive information concerning their learning that could enable them improve their work. In reality, giving feedback to student who is not ready to use it to improve his/her performance is equally useless as students continue to

perform poorly and behave badly. Receptive students to instructional feedback demonstrate compromise, curiosity and tend to accommodate comments given to them by the teachers and peers (Pekrum, 2000). Ideally, the observable behavior of receptive students to instructional feedback includes; patience, flexible, courteous and letting others share before speaking up. Unfortunately all those traits are hardly observed among students in the selected secondary in mathematics classes.

Feedback is the information given to the learner about his/her performance relative to learning goals of improving academic achievement (Pekrun, 2000). This is meant to support student enjoy learning mathematics for sustainable living. Instructional feedback is a communication that drives students' performance towards a desired performance standard by helping them correct, affirm, and restructure what they know of their subject and themselves (Bound and Molloy, 2013). Ideally, Receptivity, classroom instruction and feedback make teaching and learning complete process because it allows a two -way communication; from a teacher to a student, and from a student to a teacher for improved performance. In disappointing note, senior two students in the selected schools in Namutumba are covered by anxiety to the extent that receptivity to instruction feedback is disrepute consequently, declining performance (DIS Report, 2023).

According to Bonund & Molly (2013), instructional feedback is an important strategy aimed at overcoming mathematics anxiety faced by students in learning mathematic by making learning easier, quicker, and enjoyable. This could precisely mean that Instructional feedback is meant to clear misconceptions and learning difficulties as faced by individual students for improved learning achievement. In demonstrating receptivity to instructional feedback, a student is

expected to give full attention, maintain eye contact, and avoid interrupting. Active listening is crucial when receiving feedback. In reality, what is observed among students is hopelessness and fear for mathematics.

Mathematics anxiety is a condition which is developed as a result of having a poor attitude towards mathematics due to lack of comfort that senior two secondary school student might experience when required to perform mathematically (Wood, 1988). Instructional feedback can only impact the student's learning if students could follow it so as to correct mistakes, affirm, and restructure what they know of their subject and themselves. Causarano (2015) added that instructional practices must be aligned with the curriculum as well as providing support to students to develop receptivity towards teacher's instructional feedback as a strategy for overcoming anxiety faced by S.2 students in learning mathematics for increased academic achievement.

It is equally important to empower students to discuss their achievements and areas that need improvement in their learning so as to enable them realize the need to be receptive to instructional feedback from teacher and peers as a strategy to overcome the identified anxiety indicators in learning mathematics. Bound & Molly, (2013), purports that when students are receptive to the instructional feedback given by the teacher, the level of mathematics anxiety reduces. By implication, receptivity to instructional feedback should be a school culture for students to practice as a group or individually as far as overcoming mathematics anxiety towards learning mathematics is concern.

Mathematics anxiety is a condition which is developed as a result of having a poor attitude towards mathematics due to lack of comfort that senior two secondary school student might experience when required to perform mathematically (Wood, 1988). This is evidenced by feelings of tension, helplessness, and mental disorganization students experience when required to work out numbers in a classroom situation and may be caused by poor classroom communication between the teacher and students. That could be a reason why Cemen (1987) associated mathematics- related situation that is perceived as threatening to self-esteem and mathematics anxiety. This creates fear and hopelessness among students to solve problems involving manipulation of numbers if no timely intervention is taken.

In connection to the above, Miller and Bichsel (2004) identified two types of anxieties as trait anxiety and states anxiety. Miller and Bichsel, (2004) in their study findings associated state anxiety to emotional condition typically experienced prior to during an activity like examination, competition. They further revealed that a student with trait anxiety has characteristic tendency of feeling anxious across all types of situations since it affects the cognitive being of a student. On the other hand, the study also revealed that trait anxiety is associated to the aspect of personality, individual pattern of behavior (Miller and Bichsel, 2004). For example, being rough to others, moody, quiet and stressfulness. Miller and Bichsel, (2004) argued further that students with state anxiety tend to experience anxious only in specific personal stressful or fearful situations.

It can therefore be comprehended that anxiety is a cognitive physiological and behavioral possible factors associated to poor academic performance among students. Henschel & Roick

(2014) found that cognition, which is casually referred to as one's awareness and regulation of own internal abilities such as emotions is related more negatively to mathematics task value than affective mathematics anxiety. Miller & Bichse (2004) asserted that negative receptiveness among students towards learning mathematics should be associated to a combination of emotions and stress which can result in a student performing poorly in mathematics tasks/test and even avoiding working with numbers at all.

Precisely, Devine et al (2012), categorized and revealed factors responsible of causing anxiety as; mental, social and physical factors. It is at this point that I took self-reflection on the physical factors like dilapidated classrooms, inadequate desks, crowded classes and inadequate textbooks causing discomfort among students in learning mathematics. This is in line with McLeod, at al., (1994) in their study findings that mathematics anxiety is associated with; bad peer groups influence, prior poor mathematics background, risk of public embarrassment and socio-economic status of the student.

In reality, all that reveal communication gap between the teacher and student. As a strategy, receptivity to instructional feedback may be a better strategy to such anxiety most especially in learning mathematics because it may support students to know where and how to improve, and invest their effort in making improvement. Pashler *et al*., (2005) have a divergent view that feedback only improved learning when presented after an error, as opposed to after a correct response. They added that learners require time to positively associate errors and negative feedback to improve decision making. Whereas Worse still, Sam, (1999) in his study findings

revealed that student with negative anxiety respond to instructional feedback tasks negatively, Wood (1988) viewed Mathematics anxiety as general lack of comfort that a student might experience when required to perform mathematically. The similarity between Worse still, Sam, (1999 and Wood (1988) study findings is that student's response is determined by either positive or negative anxiety. Therefore, the impact relate closely to the type of anxiety showed by the student.

Shashidhar Belbaes (2010) in his study image, anxiety and attitude towards mathematics revealed that images of mathematics are greatly shaped by cognitive and affective domains. It then becomes clear that thought process and love for mathematics are driven by external factors such as valuing and recognizing individual student's effort most especially when giving instructional feedback. It seems students may not see appreciation and love in the comments maths teachers give them. As justification for the view given above, Hadden and Frisby (2018) found that anxious students were less likely to benefit from teacher feedback, hindering prospects for learning. Sam, (1999), Shashidhar Belbaes (2010), Frank et al., (2004) in their study findings added that task performance decreased in anxious students.

Although various studies by different scholars such as Miller and Bichse (2004) , Hadden and Frisby (2018) , Frank et al., (2004) among others provide insights to the current study, the findings were based on university and college students where mathematics learning environment is viewed as area of specialization rather than a compulsory subject as in lower secondary schools in Uganda. Establishing real associations that exist between receptivity to instructional feedback and anxiety in learning mathematics among senior two students in the selected

secondary schools remain necessary so as to design practical measures that suit their level to improve academic achievement.

2.3 Differences in the Levels of Mathematics Anxiety with Respect to the Learners' Demographic Characteristics

According to Eurasia (2017), mathematics anxiety is an issue that affects students' disciplines across multiple countries and sectors. Developing anxiety toward mathematics might be affected by gender; female students are more prone to mathematics anxiety than male students. They added that mathematic confidence, values and self-efficacy are related to self-awareness. Improving these concepts could end up with overcoming mathematics anxiety and improving performance (Eurasia, 2017). It could be possible that there is nothing to fear in learning mathematics than fear its self. If fear is removed, all students are capable of competing favourably for improved performance in mathematics.

According to Carmona (2004), Kesici and Erdogan, (2010), Seng; (2015), in their study findings revealed that anxiety is common in students in high schools. In regard to gender, Frenzel and Goetz (2007) argue that female students show more anxiety towards mathematics than male students. In my view, most female students give up with brain tasking activity like working mathematical concepts most especially if the learning environment is not supportive in terms feedback and adequate practice given to the students to perfect the mathematical skills of dealing with the four number operations; addition, subtraction, multiplication and division. Instructional feedback might be one of the most important instructional interventions that may eliminate

mathematics anxiety in both female and male students because they all have cognitive abilities that need to be supported for better performance (Educational Endowment Foundation, 2021).

Butler & Winne (1995) identified two types of instructional feedback as; 1 outcome feedback/ knowledge of results, which concerns with scores and grades, but there is no clear justification for the variant effect on the students level of mathematics anxiety as far as gender is concern. Eysenck et al., (2007) argued that increased attention on emotionally salient stimuli distracts anxious learners from relevant and task-related information. On contrary, Giorgetta et al., (2012) belief that the implications of positive feedback versus negative feedback is still quite unclear. In a classroom context, sharing learning intension, clarifying strategies for success, and encouraging students to own their learning is an essential function of instructional feedback (Black & William, 2009).

Lipnevich & Smith (2018) are concerned with what constitutes good instructional feedback which enhances receptivity of students towards instructional feedback in learning mathematics. Hattie & Timperle's (2007) responded that instructional feedback which is organized according to its content, function and presentation that relates all the three learning domains; cognitive, affective and cognitive domains. The implication that I draw here is that: 1. the instructional content / subject matter- which is the body of knowledge, skills, values, attitude and behavior. 2. Function- which is the purpose of learning for instance; improve academic performance, motivation, self-motivated learning intended by feedback provider; teacher, peer, and 3. Presentation- is an important feature of any instructional feedback message and it affects

learners' receptivity. One crucial goal of feedback is to enhance the capability of students to create their own feedback independently (Andrade, 2018).

Andersson *et-al*., (2019) raised an important caution that providing feedback after a formative test is more likely than additional revision to improve students' performance in a later summative test like end of term examinations. This was justified by McDaniel and Fisher (1991) that, feedback offers student's clarification on what they need to improve in the future, whereas revision focuses on the rehearsal of prior taught material. The same view was emphasized by Kulik & Kulik (1988) that feedback timing plays an important role in learning; feedback presented immediately upon each response promotes learning by strengthening associations between a response and its outcome. For example, end of year examinations. In respect to the findings shared by Andersson *et-al*, (2019), McDaniel & Fisher (1991) and Kulik & Kulik (1988) above, I am propelled to think that instructional feedback should be centered towards improving academic performance of student but rather reinforcing holistic behavior for productive life while and after school. This relates to internal factors such as emotions and external factors such as environment of student.

Formative feedback monitors student's learning to provide ongoing support that can be used by teachers to improve their teaching, and by students to improve their learning. It is best given early in the course, and prior to summative assessment like end of term examinations. Students recognize gaps in their knowledge, areas to improve, what support resources they may need, and learning strategies. Without formative feedback students may not be aware of their own

misperception such as; mathematics is difficult subject to pass, mathematics is for male students. The main purpose of providing instructional feedback to students is to reduce the gap between current understanding and a desired learning goal (Hattie & Timperley, 2007). By implication, lack of receptivity towards instructional feedback gives room to growing mathematics anxiety which scholars such as Frenzel & Goetz (2007) purport it to be high among female students as compared to male students.

According to Williams, White, & English (2024), mathematics anxiety is one of the greatest problems that most of the schools and other educational institutions try to address, as it contributes to the negative performance and achievement of the students in mathematics. Hence, it is important to investigate the mathematics anxiety of the students, in order to think of a solution to reduce their anxiety feeling. In this study, 63 Bachelor of Science in Mathematics students participated, and survey questionnaires were utilized for the collection of data. Statistical tools, such as Frequency, Percent, T-test for independent samples, and ANOVA test, were used to treat the data and answer the problems. It was revealed that most of the respondents have high anxiety, and same level of anxiety were felt by the respondents in preparing for and taking examinations, giving incorrect answers in recitations, and getting good grades in mathematics subjects. Moreover, among the different profiles of the respondents, only sex and age had significant differences in mean mathematics anxiety. Even though, there were more female respondents, they experienced greater mathematics anxiety than male respondents. Existing high mathematics anxiety among the respondents is concerning, since they are pursuing and acquiring degrees in mathematics.

2.4 Predictability of Receptiveness to Instructional Feedback to Mathematics Anxiety

Research suggests that instructional feedback is one of the most critical ingredients of effective teaching and learning. In meta- analysis of over 200 studies, Hattie (2009) found receptiveness to teacher's instructional feedback as the most important practice in improving students learning. The view I agree with because feedback acknowledges student's areas of strength and provides a strategy for areas that need improvement. Hattie, stresses that when students are receptive, they come to know where and how to improve, and it can support their interest to invest effort in making improvement. Mathematics anxiety seems to be one of the primary predictors of student's poor academic performance (Hembra, 1979).

In mathematics class, creative teaching encourages divergent thinking, provide supportive learning environment (Fasko, 2000). Fasko added that creative teaching enhances academic achievement, attitude towards mathematics, and mathematics anxiety of students. Hirsh (2010) challenges traditional mathematics instruction like lecture method, talk and chalk method in favor of creative practices like arts to be utilized in mathematics classes. These practices include; drawing pictures to solve problems, presenting information of mathematics concepts and spatial strategies (Wilson, 2009). For example, use of charts, graphs, puzzles, geometrical drawings, information tables. Creative teaching develops student's own creative thinking and behavior (Morris, 2006). That made the reasercher to think that when students are engaged in constructing knowledge and skills in learning mathematics, their level of receptivity to instructional feedback increases consequently reducing the level mathematics anxiety among students.

In the implementation of mathematics curriculum, creativity can be seen on how the lesson objectives, content alignment, instructional methods and assessment strategies relate in the instructional process. Objectives refer to the purpose of teaching the intended mathematical knowledge and skills to a leaner (Andrade, 2018). Content is the subject matter which contains knowledge, skills, values and attitude to be imparted to a learner. It is selected in line with the national aims and objectives of the educational curriculum. For example, social unity, this could be brought to life in mathematics instructional process by encouraging learners to solve mathematical tasks in groups. Teacher's creativity contributes positively towards learner's ability to apply mathematical knowledge and skills in his/her daily life. Methods are the means to achieve the ends but not the ends themselves.

Cander (2009), believes that instructional methods that enhance creativity in teaching and learning mathematics include but not limited to; collaboration, observation, demonstration and discovery. Use of practical methods promotes the development of mathematical knowledge and skills such as ability to brainstorm ideas, interpreting, analyzing, asking questions, and discussing their own work (Wilson, 2009). This does not only encourage learners to adhere to the instructional feedback but also own their learning (Fisher, 1995). Brainstorming is useful strategy for generating ideas with students (Fisher, 1995).

Cander (2009) found that mathematics instruction supported by creative thinking techniques had positive effect on the students' academic achievement, attitude and motivation. This encourages investigative and problem-solving skills which enables students to solve unfamiliar mathematical problems creatively. Collaborative learning where groups work together to construct knowledge and skills for problems-solving and thereafter, get feedback on their ideas from their peers,

increases confidence and reduces anxiety (Cander, 2009). Regular practice of what has been taught; application of numerical skills in everyday life activities like making shopping list and calculating change is the expected outcome of receptive behaviour among students towards instructional feedback in learning mathematics.

A study by Lorenzen (2017) assessed how different instructional strategies affected pre-service elementary teachers' levels of math anxiety and their achievement in a math content course while considering descriptions of their experiences in the course in relation to their math anxiety and achievement. The instructional strategies used were traditional teaching methods and inquiry-based learning (IBL). A mixed methods embedded design was used in which the major design of the study is a nonequivalent control group design, where the collection of data occurred before, during, and after the intervention. There were 103 participants who were elementary education pre-service teachers with 58 of them being enrolled in traditional teaching sections of the course and 45 being enrolled in IBL sections. Participants completed the Mathematics Anxiety Rating Scale Short Version (MARS-S) at the beginning and end of the course to measure their level of math anxiety. They also completed a 20-item content knowledge assessment to measure their level of achievement pre- and post-intervention. Participants' journal entries throughout the semester contained self-reported measures of math anxiety and understanding of course content as well as descriptions of their experiences in the course regarding their anxiety and understanding. Therefore, the aforementioned is relevant and applicable to the study because the current study sought to examine the influence of receptivity to instructional feedback and anxiety in learning mathematics among senior two students in the selected schools in Namutumba District.

A study by Núñez-Peña and Suárez-Pellicioni (2015) which aimed at investigating the effectiveness of a formative assessment system which involved giving feedback to students regarding the errors they made in a series of assignments performed mathematics course. Participants were 166 students enrolled in a core course of the degree in mathematics offered by the University of Barcelona. Attendance at feedback classes was found to be positively correlated with students' mathematics anxiety levels. Findings revealed that giving instructional feedback to students reduced students' mathematics anxiety levels by 37.6%. This portrayed a positive impact of instructional feedback to students on mathematics anxiety and students' academic achievement. As much as the previous studies showed that receptiveness to instructional feedback predict anxiety towards mathematics, strategies to overcome it so that students would love learning and performing tasks involving mathematics in and outside the classroom were not explored.

2.5 Summary

Although various studies by different scholars provide insights to the current study, the findings were based on university students where mathematics is a subject of specialization rather than a compulsory subject as it is in lower secondary schools in Uganda. Establishing real associations that exist between receptivity to instructional feedback and anxiety in learning mathematics among senior two students in the selected secondary schools remain necessary so as to design practical measures that suit their level to improve academic achievement.

Pertaining Differences in the levels of mathematics anxiety with respect to the learners' demographic characteristics, the literature above did not show a statistically significant difference in the level of mathematics anxiety with respect to the students' age and student cultural background. No justification was given for female students having more mathematics anxiety than male students in senior secondary schools. The current study had to gather data from senior two students in the selected secondary schools to that effect. On the side of Predictability of receptiveness to instructional feedback to mathematics anxiety**,** the previous studies showed that receptiveness to instructional feedback predict anxiety towards mathematics. However, strategies to overcome mathematics anxiety so that students would love learning and performing tasks involving mathematics in and outside the classroom was not explored. Amidst all previous studies, no single study addressed the problem of anxiety senior two students are faced in learning mathematics by fostering instructional feedback as a strategy to enhance performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0. Introduction

This chapter presents the description of the research methodology the researcher intends to use in collecting data relevant to the study. It indicates the research design, study population, sampling strategy, procedure of data collection method, data collection instruments, ethical consideration, data analysis, data management and delimitations of the study.

3.1. Research design

Research design is a systematic, well-planned, and organized process with specific goals, involving observation, theorizing, experimentation, and drawing conclusions (Amin, 2005). This study adopted cross-sectional design of data collection. This is a type of research design in which data is collected data from many different individuals at a single point in time (Amin, 2023). This design was appropriate because it examined the behavior of participants of different ages, and eliminated the risk of losing data over time (Busk, 2005).

A cross-section design was supported by quantitative approach. This was aimed at collecting quantitative data regarding receptivity to instructional feedback and anxiety in learning mathematics among senior two students in the selected secondary schools in Namutumba District.

3.2. Study population

The study population was senior two students in the three selected secondary schools in Namutumba District. According to students' class registers for senior two 2022, the total enrolment of senior two students in all the three schools was 685. Therefore, the study population was made up of 685 S.2 students; 376 females, and 309 males as reflected in Table 3. 1: Size Determination.

The researcher chose this population because senior two students were reported with high level of negative anxiety towards learning and performing activities involving mathematics (Namutumba district secondary schools academic board, 2021).

3.3. Sample Size and Sampling Techniques

3.3.1. Sample Size

Out of the study population of 685 senior two students in the three selected secondary schools in Namutumba District, Krejcie and Morgan (1970) table of size determination was used to select a total of three hundred six (306) respondents. This represented 44.6% of the total study population, 168 females and 138 males to participate in the study. An average of 102 students was sampled from each selected secondary school as in table 3. 2: Size Determination.

The study sample size was adequate enough to provide quantitative data and was a true representative of the study population. This is in line with Lindner, Murphy, and Briers (2001)

view that a response rate of a minimum of 70% is considered sufficient to provide data for generalization.

3.3.2. Sampling Technique

Simple Random Sampling (S.R.S) technique was applied on the three hundred six (306) students such that each of them had an equal chance of participating in this study. This was determined by assigning sequential values to each item within a population, then randomly selecting those values (Amin, 2005). Papers were numbered 1: 2: 3 etc in accordance with the target sample size determined in table 3. 3: Size Determination, the rest of the papers had letter "X" written on them. Students who picked papers bearing a countable number were considered a study sample size while students who picked papers bearing letter X were disregarded. The same procedure was repeated in all the three selected secondary schools in Namutumba district.

The researcher preferred to use Simple random sampling technique because it provided each senior two student in the three selected secondary schools in Namutumba district a known and equal chance of being selected into the sample. Playing simple lottery engaged students in determining the study sample size through play. This scaled up the interests of the respondents to voluntarily provide their individual feelings about the study variables.

Table 3. 4: Size Determination.

Category of respondents	Population	Number of respondents per school.	Total of respondents in 3 school	Sampling technique.
Females	376	56	168	Simple random sampling
Males	309	46	138	Simple random sampling
Total	685	102	306	

Source: Class students' registers for S.2, 2022.

3.4 Data Collection Methods

This study used Questionnaire data collection method. A questionnaire is a data collection method mainly aimed towards collecting quantitative required data (Amin, 2005). This study preferred to use questionnaire method of data collection because it was appropriate in collecting data from individual students in relation to the study variables. This enabled the researcher to maximise the concentration in gathering standard data.

This method was supported by self- administered questionnaire data collecting instrument aimed at collecting data in line with the study objectives. The quantitative data was strictly collected from senior two students in the selected secondary schools in Namutumba District.

3. 5 Data Collection Instruments

This study used a self-administered questionnaire. The quantitative data was collected data from the sampled S.2 students in the selected secondary schools in Namutumba District. The study adopted and modified closed ended questionnaire, based on the five point Likert scale (KA Batterton, 2017). The five point Likert scale had with; 5= Strongly Agree, 4= Agree, 3=Not Sure, 2 Disagree and 1=Strongly Disagree, for receptiveness to instructional feedback and Not at all (1), Slightly (2), A fair amount (3), Much (4) and Very Much (5) for mathematics anxiety 1was used as indicated in appendix 1.

This data collection instrument was used because it permitted group administration, and enabled the researcher to closely supervise and provide support in case the respondent deems it necessary while filling the questionnaire. The researcher cleared the errors made by respondents while in the field, and to ensure that all the questionnaires were recovered from individual respondents.

This questionnaire had Three (3) sections as follows; the first section collected demographic data, such as age, highest level of education, gender, tribe, and religion and birth order. The second section presented a 24-item the Students' Receptivity to Instructional Feedback (SRIF-Scale) developed by Lipnevich, Gjicali, Asil, & Smith (2021) with a validity of 0.77 and reliability of 0.79 was employed.

The scale consisted of four parts of experiential attitude, cognitive engagement, instrumental attitude and behavioral engagement. The experiential attitude part consisted of six questions (1-

6), the cognitive engagement part consisted of four questions (7-10), the instrumental attitude part consisted of five questions (11-15) and the behavioral engagement part consisted of nine questions (16-24). Students' Receptivity to Instructional Feedback was measured on a five-point Likert scale that is Strongly Agree (5), Agree (4), and Neutral (3), disagree (2) and strongly disagree (1).

The third section presented a 23-item survey of Mathematics Anxiety Questionnaire (MAQ) that was introduced Hunt, Clark-Carter, and Sheffield (2011). The questionnaire consisted three parts: mathematics evaluation anxiety, social mathematics anxiety and mathematics observation anxiety. The mathematics evaluation anxiety part consisted of nine questions (1-9), the social mathematics anxiety part consisted of nine questions (10-18) and the mathematics observation anxiety part consisted of four questions (19-23)

3.6 Data Collection Procedure

The study used quantitative data which was collected from a sample of randomly selected participants in only one –time phase. Collecting data at single time phase is convenient for this study purpose because all the filled questionnaires would be collected there and then hence overcoming would be risks of failure by the respondents to return the questionnaires. Before starting data collection, the researcher first obtained permission to approach the selected schools and students from the Namutumba District Education Officer and school authorities respectively. The researcher then proceeded to visit the selected schools and explained to the school authorities and the participants of the study information regarding the purpose of the study, significance of the study, and the data collection and usage process. The sampled participants were informed of

their right to confidentiality, informed consent and voluntary participation. With that mentioned, participants were allowed to ask any question(s) regarding the study before and during questionnaire administration. After responding to the questions, the researcher guided the participants to fill in the questionnaire during the normal school time. All information collected was anonymous, remained confidential and it was used for research purposes only. The researcher finally thanked the participants and the school authorities for the cooperation exhibited.

3. 7. Quality Control Method

In order to ensure the quality of the data collected, the researcher employed two control measures as detailed below

3. 8.1. Validity

Validity is about credibility or trustworthiness or accuracy or correctness of the research instrument (Amin, 2005). The study assessed the content validity index (CVI) of the items on a measurement instrument (a questionnaire) by asking experts whether each one targets characteristics that the instrument is designed to cover (Amin, 2005). This process compares the test against its goals and the theoretical properties of the construct.

The language clarity was assessed, ability to tap required data from respondents and acceptability in terms of length. The researcher also provided support to the respondents while filling the data collection instrument for accuracy. The questionnaires were checked and ensured that all the items are answered while still in the field.

The CVI of the instrument was calculated as; CVI =$\bar{x}(ICVR)$ (K. Nikolopoulo, 2022). This formula represents the mean ($\bar{x}$) of all individual item CVRs ($ICVR$).

3. 8.2. Reliability

Reliability basically refers to the degree to which research instrument of consistently measure what it is intended to measure and obtains same results each time is used on the same respondent (Amin, 2005). Cronbach's alpha was used to measure internal consistency reliability, indicating how closely related a set of items are as a group (Taylor & Francis, 2024). Taylor & Francis stressed that a higher Cronbach's alpha (closer to 1) suggests greater reliability, meaning the items are likely measuring the same concept consistently. The items were framed to limit ambiguity and support consistent responses across similar conditions.

3. 9 Data management

The returned questionnaires were coded and data cleaned to examine the questionnaires for duplications and missing values. Data was analyzed using SPSS Version 25.0. Mean and standard deviation were used to determine levels of agreement with the items in the questionnaire. The scores on a 24-item questionnaire of receptiveness to instructional feedback ranged from 24 to 120 on a five-point Likert scale while the scores on the scale from the 23 item questionnaire for anxiety towards learning mathematics ranged from 23 to 115. The range of 24-55 was described as low receptiveness to instructional feedback, 56-85 was described as moderate receptiveness to instructional feedback while the range from 86-129 was described as high receptiveness to instructional feedback. Similarly, the range of 23-53 was described as low

mathematics anxiety, 54-84 was described as moderate mathematics anxiety while the range from 85-115 was described as high mathematics anxiety.

3.10. Data analysis

The collected data was screened to identify and address anomalies and abnormalities distributions, multi -clarity, and instances of missing data. After the resolution of these issues, the ensuing analytical strategies were meticulously applied in alignment with the study objectives as delineated below.

Both descriptive and inferential statistics analyses were used in analyzing the data collected. For objective one, a Pearson product moment correlation analysis was used to establish the associations between the study variables and to assess suitability of the variables for modeling. For Pearson correlations, 0.00-0.19 was weak correlation, 0.20-0.39 was slight/low, 0.40-0.59 was moderate, 0.60-0.79 was substantial, 0.80-0.99 was strong/high/large while 1.00 was perfect (Lani, 2019). For objective two Multiple One-way ANOVA multiple comparisons tests between gender, age, accommodation status, religion and birth order and tribe were run with respect to mathematics anxiety to show, which groups differed from each other? The Tukey post hoc test was generally the preferred test for conducting the one-way ANOVA while considering the homogeneity between the variables. For objective three, regression analysis was performed in order to establish the extent to which receptiveness to instructional feedback predicts anxiety towards mathematics learning.

3.11. Ethical Considerations

Informed consent, crucial for both participants and their legal guardians when dealing with Minors was diligently obtained, ensuring comprehension of the study and 39; purpose, procedures, and potential risks and benefits. Confidentiality and privacy measures were essential to safeguard participants from potential stigma and discrimination. The researcher was committed to anonymously and securely storing sensitive data. The principles of beneficence and non-beneficence guided the study. The study was also guided by APA ethical guidelines.

3.12 Limitations and Delimitations of the Study

3.12.1 Limitations

Unreliable Hydro Electricity supply was the serious limitation the researcher faced. Namutumba district where this study was carried out experienced fluctuating supply of electricity every day. This made the process of writing this dissertation very slow due to fluctuating supply of electricity needed to run the laptop and other gargets related to typing and printing.

Multiple responsibilities were another limitation faced by the researcher. The researcher had duties to perform at his work as deputy head teacher, home obligation as the head of the family and above all adhering to the university schedules as post graduate student. This posed pressure on the researcher as he struggled to strike the balance.

3.12.2. Delimitations of the Study

In order to overcome the above limitations, the researcher creatively came up with the following the following measures;

i. Seeking reliable supply of hydro electricity from the nearest city. The research had to travel a distance of 70.4km from Namutumba town to Mbale city every Saturday and Sunday seeking for reliable electricity for carrying out the process of dissertation writing.

ii. The researcher drew a schedule of duties and responsibilities. This was aimed at harmonizing school duties, home obligation and university schedules with an aim of exhibiting good performance in all areas. All in all, the researcher had to demonstrate the spirit of humility, discipline and sacrifices throughout the process of; concept paper writing, proposal, and dissertation writing for successful results.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.0 Introduction

The study focused on examining the relationship between instructional feedback and anxiety in learning mathematics among S.2 students in selected secondary schools in Namutumba District. This chapter gives the description of the background variables, data analysis, presentation and interpretation. Data was aggregated with mathematics anxiety as the breaking variable to arrive at the following results.

4.1 Response rate

The Table below shows the rate at which the data was provided from the S.2 Students

Table. 4. 1: Response Rate Table

Unit	**Expected Number**	**Actual**	**Rate**
S2 Students	306	300	98.04%

Source: Primary data, 2023/24

Table 4.1 above, shows that out of the expected 306 S. 2 Students in Namutumba district, 98.04.0% was involved in the study. Therefore, sample size was reliable enough and was a true representative of the study population. According to Lindner, Murphy, and Briers (2001), a response rate of a minimum of 70% is considered sufficient.

4.2 Demographic characteristics

The study considered the following demographic information as relevant to the study; gender, age, accommodation status, religion and birth order and tribe.

Table 4.2: Demographic Characteristics of Respondents N = 300

Characteristic	Details	Frequency	Percent	Cumulative Percent
Gender	Male	132	44.0	44.0
	Female	168	56.0	100.0
Age	14 years old	50	16.7	16.7
	15 year old	69	23.0	39.7
	16 years old	50	16.7	56.3
	17 years old	57	19.0	75.3
	18 years old	74	24.7	100.0
Accommodation status	Boarding section	100	33.3	33.3
	Day section	200	66.7	100.0
	Catholic	105	35.0	35.0

Religion	Anglican	91	30.3	65.3
	Islam	68	22.7	88.0
	Others	36	12.0	100.0
Birth Order	1st, 2nd, 3rd borns	156	52.0	52.0
	4th, 5th, 6th borns	101	33.7	85.7
	7th, 8th, 9th borns	33	11.0	96.7
	10th, 11th, 12th borns	10	3.3	100.0
	Musoga	220	73.3	73.3
	Muganda	35	11.7	85.0
Tribe	Mugwere	15	5.0	90.0
	Itesot	24	8.0	98.0
	Others	6	2.0	100.0

Source: Primary Data, 2024

Table 4.2 shows that the majority (56.0%) of the respondents were females while (44.0%) were males. This indicates that both males and females S.2 students provided their views. Therefore this study was well representative by all gender groups.

In addition results from table 4.2 shows that majority (56.3%) of the S.2 students in Namutumba district were above 16 years of age and while (43.7%) were below16 years of age. This implies that the majority of S.2 students in the selected secondary Schools in Namutumba district were relatively of an appropriate model age for S2 learners in Uganda.

Furthermore results from table 4.1 shows that the majority (66.7%) of the students were in day scholars while those in boarding section were 33.3%. Majority being in day section could reduce interaction between students and hence most likely to have high mathematics anxiety.

Table 4.2 indicated that the majority (52.0%) of the S.2 students were 1^{st},2^{nd},and 3^{rd} borns, followed by 4^{th}, 5^{th} and 6th borns (33.7%), followed by 7th, 8th, 9th borns (11.0%) and the rest (3.3%) were 10th, 11^{th} and 12th borns. The results indicate that students of almost all birth orders participated although majority were 1^{st}, 2^{nd} and 3^{rd} born partly because of birth controls, child spacing and family planning policies in Uganda.

Findings from table 4.2 further revealed that most of the students were Catholics (35.0%), followed by 30.3% who were Anglicans, then 22.7% were Muslims and the rest belonged to other religions (12.0%). This implies that the data was collected from all categories of religions and the data was well balanced.

Lastly, the findings from table 4.2 revealed that majority of the students were Basoga (73.3%), followed by 11.7% who were Baganda, then 8.0% were Itesots, 5.0% were Bagwere and the rest belonged to other tribes (2.0%). This implies that the data was collected from all categories of

tribes of Central Uganda and the majority was Basoga because Numutumba district is in Busoga region.

4.3 Descriptive statistics

The data was entered in SPSS version 25 and the findings were presented in tables: The items (constructs) were arranged in descending order beginning with the one with the highest mean as shown in the tables 4.3 to 4.5. The items were analyzed using mean and standard deviation so as to establish the levels of receptiveness to instructional feedback and anxiety towards mathematics among S.2 students Namutumba District. The mean was interpreted basing on the following anchor ranges; a mean between 1.0 - 1.80 was taken to be very low, a mean of 1.81 - 2.60 was low, a mean of 2.61 - 3.40 was moderate, a mean of 3.41 - 4.20 was high and a mean of 4.21 - 5.00 was very high as adopted from Noonpakdee, Phothichai, Khunkornsiri, and Nuntree (2020).

Table 4. 3: Showing the descriptive statistics of Students Receptivity to Instructional Feedback

Students Receptivity to Instructional Feedback	N	Minimum	Maximum	Mean	Std. Deviation
I like it when the teacher tells me what I did wrong on a test or assignment	300	1	5	4.20	.841
I enjoy learning how well I did on test or assignments	300	1	5	4.05	.874
I enjoy talking to the teacher about how to improve my work	300	1	5	4.01	.936
I enjoy reading teacher's comments on my test or assignments.	300	1	5	3.88	1.138
Teacher's feedback is important for my success	300	1	5	3.87	1.163
I go over teacher's comment several times	300	1	5	3.84	1.143
I understand how to use the feedback that I get	300	1	5	3.83	1.143
Teacher's comments help me improve my skills and abilities	300	1	5	3.83	1.071
I know to how to use feedback comments to improve my work	299	1	5	3.77	1.210

The feedback I get makes sense to me	300	1	5	3.75	1.160
The comments the teacher makes on my work are easy to understand	300	1	5	3.72	1.246
When I receive feedback, I make sure I understand my mistakes	298	1	5	3.72	1.155
I look forward to receiving the teacher's comments on my work	300	1	5	3.67	1.334
Feedback on tests and assignment doesn't help me very much	300	1	5	3.66	1.248
When I receive feedback, I think about how I would do things differently next time	300	1	5	3.53	1.263
I work through the feedback I receive	300	1	5	3.49	1.239
When I received feedback, I carefully read every comment	300	1	5	3.40	1.366
I do not like when my work is evaluated.	299	1	5	3.39	1.392
When working on a new assignment, I think about the feedback I got previously	300	1	5	3.38	1.324
I do not really process the feedback I receive	299	1	5	3.35	1.405

I use teacher's feedback to improve my future work	300	1	5	3.32	1.330
I try to address every comment that teacher makes	300	1	5	3.06	1.422
Teacher's feedback is very effective in helping me enhance my performance	300	1	5	2.83	1.424
I rework my assignments based on the feedback I receive	300	1	5	2.78	1.358
Valid N (list wise)	300				

Source: Primary Data, 2024

Basing on the findings in table 4.3, the mean for majority (16 items) of the 24 items which were used to measure students receptivity to instructional feedback were in the 3.41 - 4.20 which in the range described high, and the rest (8 items) whose mean was in the range 2.61 - 3.40 were described as moderate. This implies that generally the students' receptivity to instructional feedback in Namutumba district was high.

Table 4. 4: Showing the descriptive statistics of Mathematics Anxiety

Mathematics Anxiety	N	Minimum	Maximum	Mean	Std. Deviation
Watching someone work out an algebra problem	300	1	5	3.38	1.415
Being asked to write an answer on the board at the front of a mathematics class	300	1	5	3.38	1.431
Reading the word “algebra”	300	1	5	3.37	1.412
Deciding how much each person should give you after you buy an object that you are all sharing the cost of	300	1	5	3.37	1.397
Adding up a pile of change	300	1	5	3.25	1.428
Working out how much your shopping bill comes to	300	1	5	3.24	1.412
Calculating a series of multiplication problems on paper	300	1	5	3.20	1.389
Sitting in a mathematics class	300	1	5	3.20	1.468
Taking a mathematics exam	300	1	5	3.20	1.393

Listening to someone talk about mathematics	300	1	5	3.20	1.345
Working out how much change a cashier should have given you in a shop after buying several items	300	1	5	3.20	1.264
Working out how much time you have left before you set off to work or place of study	300	1	5	3.18	1.330
Having someone watch you multiply 12 x 23 on paper	300	1	5	3.16	1.402
Being asked to calculate three fifths as a percentage	300	1	5	3.12	1.433
Reading a mathematics textbook	300	1	5	3.12	1.413
Being asked to memorize a multiplication table	300	1	5	3.09	1.416
Watching a teacher write equations on the board	300	1	5	3.08	1.421
Being asked to calculate Shillings in front of several people	300	1	5	3.01	1.397
Being asked a mathematics question by a teacher in front of a class	300	1	5	2.99	1.331

Calculating how many days until a person's birthday	300	1	5	2.99	1.333
Being given a telephone number and having to re-member it	300	1	5	2.96	1.326
Being given a surprise mathematics test in a class	300	1	5	2.96	1.332
Being asked to add up the number of people in a rooms	300	1	5	2.93	1.390
Valid N (listwise)	300				

Source: Primary Data, 2024

Basing on the findings in table 4.4, the mean for all the items was in the range 2.61 - 3.40 was described as moderate. This implies that the generally anxiety towards learning mathematics in Namutumba District was moderate.

4.3.2 Descriptive statistics for the study variables.

The data obtained from the questionnaires was then aggregated using SPSS V25 as shown in table 4.5. The scores on a 24-item questionnaire of receptiveness to instructional feedback ranged from 24 to 120 on a five-point Likert scale while the scores on the scale from the 23 item questionnaire for anxiety towards learning mathematics ranged from 23 to 115. The range of 24-55 was described as low receptiveness to instructional feedback, 56-85 was described as

moderate receptiveness to instructional feedback while the range from 86-129 was described as high receptiveness to instructional feedback. Similarly, the range of 23-53 was described as low mathematics anxiety, 54-84 was described as moderate mathematics anxiety while the range from 85-115 was described as high mathematics anxiety.

Table 4. 5: Descriptive statistics for the study variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Receptivity Instructional Feedback	300	24.00	105.00	80.6433	13.87219
Maths Anxiety	300	24.00	107.00	69.9000	13.91722
Valid N (listwise)	300				

Source: Primary Data, 2024

Findings in Table 4.5 revealed that the receptiveness to instructional feedback for students in Namutumba District was moderate since the mean was 80.6433 in the range 56-85 was described as moderate receptiveness to instructional feedback. Therefore the receptiveness to instructional feedback for students in Namutumba District is moderate.

In addition in table 4.5 revealed that the mathematics anxiety for students in Namutumba District was moderate since the mean was 69.9000 in the range 56-85 was described as moderate mathematics anxiety. Therefore the mathematics anxiety for students in Namutumba District is moderate.

4.3 Correlation analysis and hypothesis testing

Pearson correlation analysis was run in order to establish the association between the study variables. Pearson product moment correlation index was used to determine the strength of the associations between receptiveness to instructional feedback and anxiety towards learning mathematics. The hypotheses were tested using levels of significance. All the independent variables and their constructs were coded and correlated with the dependent variable (Mathematics Anxiety) as presented in the correlation matrix in table 4.3.

Table 4. 6: Pearson Correlation Matrix

	1	2	4	5	6	7	8	9	
Experiential Attitude(1)	1								
Cognitive Engagement(2)	.162**	1							
Instrumental Attitude(3)	.110	.232**	1						
Behavioral Engagement(4)	.142*	.152**	.120*	1					

Instructional Feedback(5)	.124*	.230**	.312**	.195**	1				
Maths Evaluation Anxiety(6)	.118	.115	.157**	.205**	.446**	1			
Social Maths Anxiety(7)	.293**	.128	.242*	.185**	.470**	.501**	1		
Maths Observation Anxiety(8)	.185*	.175*	.142*	.208**	.495**	.501**	.647**	1	
Mathematics Anxiety(9)	.238**	.270**	.383**	.230**	**.560****	.787**	.754**	.705**	1
**. Correlation is significant at the 0.01 level (2-tailed).									
*. Correlation is significant at the 0.05 level (2-tailed).									

Source: Primary Data, 2024

4.3.1 Association between Receptiveness to Instructional Feedback and Anxiety Towards Learning Mathematics.

Study findings in table 4.6 indicated that the Pearson correlation between receptiveness to instructional feedback and mathematics anxiety among S.2 Students in Namutumba District was moderate ($r=0.560^{**}$, $P<.01$) and statistically significant. The findings are in agreement with those of control value theory of achievement emotions (2000) that feedback is useful if it is given

immediately the mistake is made. This implies that poor delivery of instructional feedback lead to increased anxiety

Further analysis revealed that all the constructs of receptiveness to instructional feedback including experiential attitude (.238**, P<.01), cognitive engagement (.270**, P<.01), instrumental attitude (.383**, P<.01) and behavioral engagement (.230**, P<.01) were also positively correlated with mathematics anxiety. Therefore, there is a moderate positive association between receptiveness to instructional feedback and mathematics anxiety among S.2 students in Namutumba District which is statistically significant. This implies that a positive improvement in receptiveness to instructional feedback is associated with increase in mathematics anxiety among S.2 Students in Namutumba District. The finding are in line with DIS report (2022) that more feedback might trigger anxiety, forcing students to tear off pages bearing negative comments written by teachers about their work.

4.4 One-Way ANOVA results

One-way ANOVA multiple comparisons tests between gender, age, accommodation status, religion and birth order and tribe were run with respect to mathematics anxiety to show which groups differed from each other. The Tukey post hoc test was generally the preferred test for conducting the one-way ANOVA while considering the homogeneity between the variables. The results of the output were as shown in table 4.6 and the summary for the analysis of variance for all the demographic variables was indicated in table 4.7.

Table 4.7: One-Way ANOVA results for Individual Demographic variables

Maths Anxiety		Sum of Squares	Df	Mean Square	F	Sig.
Gender	Between Groups	18.994	60	.322	1.407	.040
	Within Groups	54.926	240	.229		
	Total	73.920	300			
Birth Order	Between Groups	52.649	60	.892	1.519	.016
	Within Groups	140.988	240	.587		
	Total	193.637	300			
Age	Between Groups	178.283	60	3.022	1.650	.005
	Within Groups	439.397	240	1.831		
	Total	617.680	300			
Tribe	Between Groups	78.838	60	1.336	1.327	.073

	Within Groups	241.758	240	1.007		
	Total	320.597	300			
Accommodation Status	Between Groups	12.755	60	.216	.962	.557
	Within Groups	53.912	240	.225		
	Total	66.667	300			
Religion	Between Groups	79.258	60	1.343	1.380	.059
	Within Groups	233.659	240	.974		
	Total	312.917	300			
Correlation is significant at the 0.05 level						

Source: Primary Data, 2024

Table 4. 8: One-Way ANOVA results for Individual Demographic

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8773.128	7	1462.188	8.718	.000[b]
	Residual	49139.872	293	167.713		
	Total	57913.000	300			
a. Dependent Variable: Mathematics Anxiety						
b. Predictors: (Constant), Religion, Gender, Accommodation Status, Birth Order, Age, Tribe						

Source: Primary Data, 2024

4.4.1 Differences in the levels of mathematics anxiety with respect to the students' demographic characteristics

The results from table 4.6 show that there is a statistically significant differences in the levels of mathematics anxiety with respect to gender groups of students in Namutumba District (F=1.407, p=0.040<.05). This means that there is a significant difference in mathematics anxiety levels between males and female students in Namutumba District.

Additionally the results from table 4.6 show that there is a statistically significant differences in the levels of mathematics anxiety with respect to birth order groups of students in Namutumba district (F=1.519, p=0.016<.05). This means that there is a significant difference in mathematics

anxiety levels between the group of (1st, 2nd, and 3rd) borns, (4th, 5th and 6th) borns and (7th, 8th, 9th) born students in Namutumba District.

Furthermore, the results show that there is a statistically significant difference in the levels of mathematics anxiety with respect to age groups of students in Namutumba District (F=1.650, p=0.005<.05). This means, that there is a significant difference in mathematics anxiety levels between the students aged 14, 15, 16, 17, and 18 years.

However on the other hand, there was no statistically significant differences in the levels of mathematics anxiety with respect to tribe, accommodation status, and religion since the F- values were very small and the P-values were all less than 5% (p= <.05).

In conclusion, basing on results in table 4.7, there is a statistically significant difference in the levels of mathematics anxiety with respect to the students' demographic characteristics in Namutumba district (F=8.718, p=0.000<.05). This difference was largely accounted for by gender, birth order and age.

4.5 Regression Analysis

In order to establish the extent to which receptiveness to instructional feedback predicts anxiety towards learning mathematics, regression analysis was performed. The results are presented in table 4.8, 4.9 and 4.10

Table 4.9: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.560[a]	.314	.311	11.55047	.314	136.087	1	298	.000
a. Predictors: (Constant), Students Receptivity to Instructional Feedback									

Source: Primary Data, 2023

Results in table 4.8 indicated that indicates that students'' receptivity to instructional feedback predicts 31.1% (Adjusted R Square=.311) of the variations in mathematics anxiety and this further implies that the remaining 68.9% of the changes in mathematics anxiety is explained by other variables not considered in this study like organizational behavior, government policy, environmental and economic factors.

Table 4.10: ANOVA results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18155.849	1	18155.849	136.087	.000[b]
	Residual	39757.151	298	133.413		
	Total	57913.000	299			

a. Dependent Variable: Mathematics Anxiety

b. Predictors: (Constant), Students Receptivity Instructional Feedback

Source: Primary Data, 2023

The ANOVA results in table 4.9 revealed that there is a statistically significant difference between the means at the different levels of the mathematics anxiety with respect to students' receptivity to instructional feedback. This is based in the fact that the F-value is 136.087, which is significant since the p-value=0.000 which is less than .01 level of significances

Table 4.11: Regression Coefficients

Model		Un standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	24.600	3.940		6.244	.000
	Students Receptivity to Instructional Feedback	.562	.048	.560	11.666	.000
a. Dependent Variable: Mathematics Anxiety						

Source: **Primary data, 2023**

Table 4.10 indicates that students' receptivity to instructional feedback has significant positive effect on mathematics anxiety among S.2 students in Namutumba District. The linear regression equation of the model is: Mathematics anxiety = 24.600+ 0.560*Students receptivity instructional feedback + ε.

The model indicates that, if ε is the error term and keeping all other factors constant (constant = 24.600); for any unit improvement students receptivity to instructional feedback in Namutumba District, mathematics anxiety will increase by 0.560 units.

CHAPTER FIVE

IMPLICATIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the discussion of the study findings by comparing with previous related studies and make conclusions and recommendations basing on the findings in chapter four. The chapter then provides suggestions for further studies basing on the gaps and limitations in the findings. The chapter is also organized in chronological order of the research objectives.

5.1 Implications of the findings

The study findings revealed that there is a statistically significant moderate positive association between students receptiveness to instructional feedback and mathematics anxiety among senior two secondary school students in Namutumba District ($r=0.560^{**,}$ $P<.01$).

The findings also give the implication that poor feedback quality may lead to feedback anxiety due fear of negative criticism. This is in disagreement with the research hypothesis 1 that purported that receptiveness to instructional feedback has no statistically significant association with anxiety in learning mathematics among senior two secondary school students in Namutumba District.

The findings also revealed that there is a statistically significant difference in the levels of mathematics anxiety with respect to the students' demographic characteristics among senior two secondary school students in Namutumba District ($F=8.718$, $p=0.000<.05$) and the difference was largely accounted for by gender, birth order and age. Frenzel and Goetz (2007) argued that

female students show more anxiety towards mathematics than male students. The finding were not supported by the research hypothesis 2 which stated that Learners' demographic characteristics have no statistically significant differences in the levels of mathematics anxiety among senior two secondary school students in Namutumba District. The findings revealed that female students were faced with mathematics anxiety as compared to the male students. .

The findings also revealed that receptiveness to instructional feedback predict anxiety towards mathematics. This is in disagreement with hypothesis that stated that receptiveness to instructional feedback does not predict anxiety towards mathematics among senior two secondary school students in Namutumba District. However, the findings were supported by Lorenzen, J. K. (2017) that instructional strategies predicted up to 36.3% levels of mathematics anxiety among pre-service elementary teachers.

5.2 Conclusions

5.2.1 Associations between Receptiveness to Instructional Feedback and anxiety towards learning mathematics so as to design instructional processes that are responsive to the anxiety faced by senior two students.

The study concludes that students' receptiveness to instructional feedback is associated with mathematics anxiety among senior two secondary school students in Namutumba District.

5.2.2. Differences in the levels of mathematics anxiety with respect to the students' demographic characteristics in order to cater for students' individual differences in learning mathematics for improved academic performance.

The study concludes that differences in the levels of mathematics anxiety arise from demographic characteristics of senior two secondary school students in Namutumba district.

5.2.3. Extent to which Receptiveness to instructional feedback predicts anxiety towards mathematics and how to overcome it so that students can enjoy learning mathematics.

The study concludes that receptiveness to instructional feedback predict anxiety towards mathematics among senior two secondary school students in Namutumba District.

5.3 Recommendations

5.3.1 The associations between receptiveness to instructional feedback and anxiety towards learning mathematics so as to design instructional processes that are responsive to the anxiety faced by senior two students.

The study also recommends that school administrators, policy makers, parents and other stakeholders in education should design instructional processes that are responsive to the anxiety faced by senior two students by ensuring behavioral and cognitive engagement and changing both instrumental and experiential attitude of S2 students in Namutumba District

5.3.2. The differences in the levels of mathematics anxiety with respect to the students' demographic characteristics in order to cater for students' individual differences in learning mathematics for improved academic performance.

The study also recommends that school administrators, policy makers, parents and other stakeholders in education should cater for students' individual differences in learning mathematics basing on gender, birth order and age as to achieve improved mathematics performance

5.3.3. The extent to which receptiveness to instructional feedback predicts anxiety towards mathematics and how to overcome it so that students can enjoy learning mathematics.

The study also recommends that school administrators, policy makers, parents and other stakeholders in education should invest more resources and time in ensuring more instructional feedback to students so as to overcome mathematics anxiety and enable them to enjoy learning mathematics.

5.4 Areas for Further Research

5.4.1 Study limitations

1. The study adopted a cross sectional design where data is collected at one point in time and the findings from this study may be limited to the current study period only and hence reducing their levels of generalization and transferability.
2. The study relied on a questionnaire method only to elicit information from the respondents meaning that other features that can be observed using other data collection method like

interview method, focus group discussion, documentary review and observation were not included in the findings.

5.4.2 Areas recommended for further research

Basing on the study gaps, subject and time scope, the following study areas were not concluded and are thus recommended for further research by future scholars;

1. A similar longitudinal study could be done. This would help to establish the relationship between receptivity to instructional feedback and mathematics anxiety.

2. A similar study could be done using mixed methods approach

REFERENCES

Asharaft, M.H., & Krause J, A. (2007).*Working memory, math performance, and math anxiety*. Psychology bulsletin and review, 14(2), pp. 243-248.

Ashcraft, H.H. (2002). *Math anxiety, educational, and continuous consequences.* Current directions in Psychological science, (pp.11, 181 -185).

Bessant, K. (1995). *Factors associated with types of mathematics anxiety in college students.*

Buckley, S. (2016). *Changing minds: Discussions in neuro science, Psychology and education.* Gender and sex differences in students' participation, achievement and engagement in mathematics. Australian Council for Education Resear

Cara way, K., Tucker, C.M., Reinke, W.M., & Hall. C. (2003). *Self – efficiency, goal orientation and fear of failure as predictors of school engagement in high students*. Psychology in the school, 40 (4), pp. 4.7 – 427. https:// obi.org/10.102/pits.10092.

Carmona. (2004), Kesici & Edogan, (2010), Seng; (2015). *Who showed that anxiety is common in students in semi high level?*

Çelik, M. (2021). Investigation of Teacher Candidates' Teaching Maths Anxiety and Teaching Maths Competencies. International Journal of Progressive Education, 17(6), 158-167.

Dawker, A., Sarker, A., & Looi, C.Y. (2016). *Mathematics anxiety: What have we learned in 60y years?* Frontier in Psychology, p.7, 508.

Eccles, J.S., & Wigfield, A. (2002). *Motivational beliefs, values and goals, Annal review of Psychology*, 53(1), p. 109-132.

Eysenck, M., Derakshan, N., Santos, R., & Calvo, M. (2007). *Axienty and cogntive performance; Attention control theory*. Emotion, 7 (2), p. 336 -353. *Https:* // doi. org/10.1037/1528-3542.7.2336

Estonanto, A. J. J., & Dio, R. V. (2019). Factors causing mathematics anxiety of senior high school students in calculus. Asian Journal of Education and E-Learning. https://doi. org/10.24203/ajeel. v7i1, 5701.

FRANK, M. J., Woroch, B. S., & Curran, T. (2005). *Error related negativity predicts re-enforcement learning and conflict biases*. Neuron, 47 (4), 495 -501. *https*:// doi.org/ 10.1016/. neuron.2005.06 020

Giorgetta, C., *et-al. (*2012). *Reduced risk-taking behavior as a trait feature of anxiety*. Emotion 12(6), 1373 -1383. https:// doi. Org/10.1037/a 0029119

Hadden, A. A., Frisby, B. N. (2018). *Face threat mitigation in feedback; an examination of student feedback; self-efficacy and perceived emotional support*. Communication quarterly, 67(1), 60- 75. https:/doi.org/10.1080/1063373.2018. 1532043

Howard, A., & Micheal P.G. (2019). *Psychometric properties and factor structure of the attitudes towards research scale in a graduate student sample.* Psychology learning and teaching, 18(3), p.259-274. https://doi.org/10.1177/1475725719842695

https:// doi.org/10.1016/036-476x (91)90037-L

Kazel skins, R., et al. (2000). *Mathematics anxiety and Test anxiety: Separate constructs? Journal of experimental education*, pp. 68,137-146.

Kulik, J.A., Kuliki, C.L.C. (1988). *Timing and verbal learning. Review Educational research,* 58 (1), p 79 -97. https://doi.org/10.3102/003465 43058001079

Lipnevich, A. A & 2016. Receptivity to instructional feedback: A validation study in the secondary school context in Singapore. European journal of psychological assessment.

Lipnevich, A. A., Gjicali, K., Asil, M., & Smith, J. K. (2021). Development of a measure of receptivity to instructional feedback and examination of its links to personality. Personality and Individual Differences, 169, 110086.

Lorenzen, J. K. (2017). The effect of instructional strategies on math anxiety and achievement: A mixed methods study of preservice elementary teachers. The University of Southern Mississippi.

Mc Daniel, M.A., Fisher, R.P. (1991). *Tests and test feedback as learning sources. Contemporary Educational Psychology*, 16(2), p (192-201).

Núñez-Peña and Suárez-Pellicioni (2015). Feedback on students' performance: A possible way of reducing the negative effect of math anxiety in higher education. International Journal of Educational Research, 70, 80-87.

Namutumba District. (2022). *Namutumba district education report*. Namutumba District, Uganda.

Pashler, H., Wiseheart. M., Wixted. J., & Rehrer, D. (2005). *When does feedback facilitate learning of words? Journal of experimental psychology: learning, memory, and coition,* 31 (1), p 3-8. https:// doi.org/10.1037/0278-7393.31.13.

Pekrun, R., et al. (2017). *Achievement emotions and academic performance: longitudinal models of reciprocal effects. Child development*, 88 (5), 1653-1670. https:// doi.org/ 10.1111/cdev.12704

Poorman, S., Mastorovich, M., & Gerwick, M., (1029). *Interventions for test anxiety: How faculty can help. Teaching and learning in Nursing* 14(3), p. 186-191.https:// doi.org/ 10.1016/j.teln.2019.02007

Sahri, N. A., Kamaruzaman, W. N. F. W., Jamil, J. M., & Shaharanee, I. N. M. (2017). Exploring mathematics anxiety and attitude: Mathematics students' experiences. Paper presented at the AIP Conference Proceedings.

Sanli, C. (2020). *The relation between task value, Test anxiety and academic self –efficacy: A moderation Analysis in High school Geography course.* Participatory Educational research, 8(1), p. 265-278.

Sekamwa, .J.C. (2003). *History and Development of Education in Uganda*: Fountain publishers. Kampala Uganda.

Tobias, S. (1993). *Overcoming math anxiety* .WW Norton and company.

Wigfield, A., & Ecles, J.S. (1992). *The development of achievement task value: A theoretical analysis. Developmental review*, 12 (3), p. 265-310.

Wigfield, A., & Eccle., J.S. (1992). *The development of achievement task value: A theoretical analysis developmental Review*, 12 (3) p. 265- 310.

Young, C.B., Wu,S., & Menon, V. (2012). *The neuro developmental basis of mathematics anxiety Psychological science,* 23 (5). P. 492-501

Pekrun, R., Elliot, A. J., & Maier, M. A. (2006a). *Achievement goals and discrete achievement emotions: A theoretical model and prospective test*. Journal of Educational Psychology, 98, 583–597.

Yourt, E., & Salin. 1. (2015). *An investigation of the relationship between secondary school students,' motivational beliefs and mathematics anxieties through canonical correlation analysis*. Journal of theory and practical in education. (4) p.1106-11

Pekrun, R., Frenzel, A., Goetz, T., & Perry, R. P. (2006b, April). *Control-value theory of academic emotions: How classroom and individual factors shape students' affect. Paper presented at the annual meeting of the American Educational Research Association.* San Francisco, California.

Pekrun, R., Goetz, T., & Perry, R. P. (2005). *Achievement Emotions Questionnaire (AEQ). User's manual. Munich, Germany: Department of Psychology*, University of Munich.

Pekrun, R., Goetz, T., Perry, R. P., Kramer, K., & Hochstadt, M. (2004). *Beyond test anxiety: Development and validation of the Test Emotions Questionnaire (TEQ). Anxiety*, Stress and Coping, 17, 287–316.

Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002a). *Academic emotions in students' self-regulated learning and achievement: A program of quantitative and qualitative research.* Educational Psychologist, 37, 91–106.

Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002b). *Positive emotions in education. In E. Frydenberg (Ed.), beyond coping: Meeting goals, visions, and challenges* (pp. 149–174). Oxford, UK: Elsevier.

Pekrun, R., Götz, T., Titz, W., & Perry, R. P. (2002c, April). *A social cognitive, control-value theory of achievement emotions: Social antecedents and achievement effects of students' domain-related emotions*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, Louisiana.

Pekrun, R., & Hofmann, H. (1996, April). *Affective and motivational processes: Contrasting inter -individual and intra-individual perspectives*. Paper presented at the annual meeting of the American Educational Research Association, New York.

Zhang, L. J., & Rahimi, M. (2014). EFL learner's anxiety level and their beliefs about corrective feedback in oral communication classes. System, 42, 429-4.

Pekrun, R., Cusack, A., Murayama, K., Elliot, A. J., & Thomas, K. (2014). The power of anticipated feedback: Effects on students' achievement goals and achievement emotions. *Learning and Instruction, 29,* 115–124.

APPENDICES

Appendix 1: Questionnaire for S.2 Students

UGANDA MARTYRS UNIVERSITY

FACULTY OF EDUCATION

Dear student,

I am Ijala Johnson masters' degree student at Uganda Martyrs University. I am carrying out research on topic; receptivity to instructional feedback and anxiety among senior two students towards learning mathematics in selected secondary schools in Namutumba District, Uganda.

Thank you for accepting to participate in this study.

This questionnaire comprises three sections; A, B and C. Section A, require you to fill in your personal information.

In section B, seeks to find out how you feel about teacher's comment on your tests or assignment. You will provide your answer by rating each of the proposed statements by writing the digit for the option in the five scales that most suits your judgment. (1. Strongly agree. 2. Agree. 3. Neutral. 4. Disagree 5. Strongly Disagree).

I request you to be as honest as you can because your answers was treated with the utmost confidentiality and was solely used for research purposes only. Please also note that there is no right or wrong answer here.

SECTION A: Student's information.

Fill in information below:

Gender : _____

Birth order : _____

Age : _____

Tribe : _____

Accommodation status: _____

Religion : _____

SECTION B Students' Receptivity to Instructional Feedback

I would like to know how you feel about teacher's comment on your tests or assignment. Please read each statement and select the response that you think best describes your thoughts, feelings, or behaviours.

How much do you agree or disagree with the following statements?

Code	Students' Receptivity to Instructional Feedback	Strongly Disagree(1)	Disagree(2)	Neutral (3)	Agree	Strongly Agree (5)
SRIF-EA	**Experiential Attitudes (EA)**					
SRIF-EA 1	I enjoy learning how well I did on test or assignments					
SRIF-EA 2	I like it when the teacher tells me what I did wrong on a test or assignment					
SRIF-EA 3	I enjoy reading teacher's comments on my test or assignments.					
SRIF-EA 4	I do not like when my work is evaluated.					
SRIF-EA 5	I look forward to receiving the teacher's comments on my work					
SRIF-EA 6	I enjoy talking to the teacher about how to improve my work					

SRIF-CE	**Cognitive Engagement**	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree**	**Strongly Agree (5)**
SRIF-CE 07	I understand how to use the feedback that I get					
SRIF-CE 08	The feedback I get makes sense to me					
SRIF-CE 09	The comments the teacher makes on my work are easy to understand					
SRIF-CE 10	I know to how to use feedback comments to improve my work					
SRIF-IA	**Instrumental Attitudes**	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree**	**Strongly Agree (5)**
SRIF-IA 11	Teacher's comments help me improve my skills and abilities					
SRIF-IA 12	Teacher's feedback is important for my success					
SRIF-IA 13	I use teacher's feedback to improve my future work					
SRIF-IA 14	Teacher's feedback is very effective in helping me enhance my performance					
SRIF-IA 15	Feedback on tests and assignment doesn't help me very much					

SRIF-BE	Behavioral Engagement	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree	Strongly Agree (5)
SRIF-BE 16	When I received feedback, I carefully read every comment					
SRIF-BE 17	I go over teacher's comment several times					
SRIF-BE 18	When I receive feedback, I make sure I understand my mistakes					
SRIF-BE 19	When I receive feedback, I think about how I would do things differently next time					
SRIF-BE 20	When working on a new assignment, I think about the feedback I got previously					
SRIF-BE 21	I work through the feedback I receive					
SRIF-BE 22	I rework my assignments based on the feedback I receive					
SRIF-BE 23	I do not really process the feedback I receive					
SRIF-BE 24	I try to address every comment that teacher makes					

Section C: Mathematics Anxiety Scale–UK

This section seeks to find out anxiety you have towards learning or performing activity involving manipulation of numbers. You will provide your answer by rating each of the proposed statements by writing the digit for the option in the five scales that most suits your judgment, thoughts, feelings, or behaviours (1.Not at all, 2 slightly, 3 a fair amount, 4 much and 5 Very much).

How anxious would you feel in the following situations?

Code	Mathematics Anxiety	Not at all (1)	Slightly (2)	A fair amount	Much (4)	Very much (5)
	Maths Evaluation Anxiety (MEA)					
MA-MEA1	Having someone watch you multiply12 x 23 on paper					
MA-MEA2	Being asked to write an answer on the board at the front of a maths class					
MA-MEA3	Taking a maths exam					
MA-MEA4	Being asked to calculate Shillings in front of several people					
MA-MEA5	Calculating a series of multiplication problems on paper					
MA-MEA6	Being given a surprise maths test in a class					
MA-	Being asked to memorize a					

MEA7	multiplication table					
MA-MEA8	Being asked to calculate three fifths as a percentage					
MA-MEA9	Being asked a maths question by a teacher in front of a class					
MA-SMA	**Social Maths Anxiety (SMA)**					
MA-SMA10	Adding up a pile of change					
MA-SMA11	Being asked to add up the number of people in a rooms					
MA-SMA12	Calculating how many days until a person's birthday					
MA-SMA13	Being given a telephone number and having to re-member it					
MA-SMA14	Working out how much time you have left before you set off to work or place of study					
MA-SMA15	Working out how much change a cashier should have					

	given you in a shop after buying several items					
MA-SMA16	Deciding how much each person should give you after you buy an object that you are all sharing the cost of					
MA-SMA17	Working out how much your shopping bill comes to					
MA-SMA18	Reading the word “algebra”					
	Maths Observation Anxiety (MOA)					
MA-MOA19	Listening to someone talk about maths					
MA-MOA20	Reading a maths textbook					
MA-MOA21	Watching someone work out an algebra problem					
MA-MOA22	Sitting in a mathematics class					
MA-MOA23	Watching a teacher write equations on the board					

Thanks for your participation.

Apendix II

Uganda Martyrs University

making a difference

The Faculty of Education

Date: 22nd April 2024

PERMISSION LETTER TO CONDUCT FIELD RESEARCH

Re:

Dear Sir/Madam,

Greetings from Uganda Martyrs University.

The Faculty of Education is delighted to introduce **Mr. IJALA JOHNSON** Registration number **2022-M313-41857** a student pursuing a Master of Education degree of Uganda Martyrs University. He is undertaking research in partial fulfillment of the requirements leading to the degree award.

His research topic is: **RECEPTIVITY TO INSTRUCTIONAL FEEDBACK AND ANXIETY IN LEARNING MATHEMATICS AMONG SENIOR TWO SECONDARY SCHOOL STUDENTS IN NAMUTUMBA DISTRICT**.

We request that you offer him the necessary assistance in order to complete this research project. For further inquiry on this matter, please contact me at 0772-366156 or email: aodele@umu.ac.ug. Thank you for your support and cooperation.

Sincerely,

ADodele

Dr. Anne Odele

Head of Postgraduate Department

Faculty of Education

Uganda Martyrs University P.O. Box 5498 - Kampala - Uganda Tel: (+256)038-410611 Fax: (+256) 038410100 Email: umu@umu.ac.ug

Appendix III

To:	**Faculty of Education**
From:	**Name: IJALA JOHNSON** **Reg. No. 2022-M313-41857**
Date: **19**th August, **2025**	
RE:	**COMPLIANCE REPORT**

Following my successful viva defense held at Nkozi campus, I was advised to revisit my document with the help of my supervisor and present a compliance report about the addressed observations for his approval. This report therefore serves to let you know of the defense comments and how I addressed them.

N	Area	Section	Comment	Pages	Action taken
1.	Cover Page	Topic	-I was advised to add an action verb such as influence, evaluation, assessment, relationship etc - I was advised to check on format/ spacing	-Cover page -title page	An action verb influence has been added to the topic. - Format/ spacing checked and adjusted.
2.	Preliminary page	Abstract	-Boldly indicating headings like; "Mathematics anxiety 'changed the known flow of this section.	2	-Redundant phrases like mathematics anxiety have been removed
3.	Chapter One	-Historical background	This section should be presented in a standard format, clearly reflecting different parts of a statement of the problem.		-Paragraphs have been instead of boldly indicating headings
4.		Statement of the problem	-The focus could be on more on other stakeholders than personal gain.	11	- Statement has been re-aligned to match a standard format.

5. **6**		-Significance of the study Conceptual frame work	-a detailed description of the conational frame work, showing the linkage between concepts with citations.		-The focus has been put on students among other stakeholders. General Systems Theory which was propounded by Ludwig Von Bertalanffy in 1968. Was revisited to the suitability of the study.
7**.**		Definition of key terms	- Key terms that was not previously in the conceptual perspective is expected.	**16 - 1**7	This has been adjusted
8**.**	Chapter Two	**2.1** Theoretical review	-Review did not inform the subsequent discussion chapter -Literature sentences were disjointed	**1**8**.- 3**0	-This section has been revisited and standard paragraphs constructed

9.	Chapter Three	**3. 1**0 Research Design	-There was need to describe the design and a cross section	**31**	-.A cross sectional design has been described.
10		**3.**9. Ethical Consideration.	- Ethical Consideration Details of APA missing	**3**8	-Details of APA have been included.
11		Study limitations and Delimitations	-The limitations and delimitations missing.	38**.**	-The limitations and delimitations have been concluded.
13	Chapter Four	4. **3** Discussion	-A more comprehensive scholarly discussion with citation, weaved with chapter two	39	-It has been revisited and some adjustment made
14	Chapter Five	Chapter name	- The correct chapter name was not used	52	-Summary Conclusion and Recommendation, UMU format has been used.

Supervisor

Signature……

Name…… ……

Date…….

Appendix IV

UGANDA MARTYRS UNIVERSITY

Faculty of Education

DISSERTATION SUPERVISION REPORT RECORD

Name of Supervisor: **Dr. MUWONGE MAGOBA CHARLES**

Name of Student: **IJALA JOHNSON**

Reg. Number: **2022-M313-41857**

Degree: **MASTERS DEGREE IN CURRICULUM DESIGN AND DEVELOPMENT.**

Title of Dissertation: **RECEPTIVITY TO INSTRUCTIONAL FEEDBACK AND ANXIETY IN LEARNING MATHEMATICS AMONG SENIOR TWO SECONDARY SCHOOL STUDENTS IN NAMUTUMBA DISTRICT**

Consultation and Submission Dates	Return Dates	Student's Sign	Supervisor's Sign
14/4/2024	**7/4/2024**		
15/7/2024	**17/7/2024**		
2/8/2024	**6/8/2024**		
6/8/2024	**11/8/2024**		

17/8/2024	**19/9/2024**		
18/2/2025	**20/3/2025**		
25/4/2025	**8/5/2025**		
14/4/2025	**15/5/2025**		

Date of submission and return of full draft and all related materials:

Date of submi

ssion: 25/4/2025 Date of return: **8/5/2025**

Submission Declaration and Permission to submit

Declaration by student:

I, IJALA JOHNSON declare that this work is my own and take full responsibility for submitting it for examination.

Signature: _____ Date 10/5/2025.

Supervisor's endorsement _____ Date: 15.05.2025

Permission granted by the Faculty of Education Board to submit: Yes No

Comments:

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