Instructional Resources Management and Academic Performance of Learners with Hearing Impairment in Government Aided Primary Schools in Masindi Municipality

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DECLARATION

This dissertation is my original work and has never been presented for any award of degree in any University.

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APPROVAL

We as Department supervisors confirm the work was done by the candidate under our supervision.

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DEDICATION

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LIST OF ABBREVIATIONS AND ACRONYMS

CVI	Content validity index
CWDs	Children with disabilities
DV	Dependent variable
EFA	Education for All
HI	Hearing Impairment
HOD	Head of department
IV	Independent variable
KCPE	Kenya Certificate of Primary Education
MIS	Municipal Inspector of Schools
MOEST	Ministry of Education Science and Technology
P/S	Primary school
P1- P7	Primary one to primary seven
PEO	Principal Education Officer
PLE	Primary Leaving Examination
PMS	Performance measurement system
SHIs	Students with Hearing Impairment
SNE	Special Needs Education
SPSS	Statistical Package of Social Sciences
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization

ABSTRACT

The purpose of the study was to examine the relationship between Instructional Resources Management and the academic performance of hearing impaired learners in inclusive government aided primary schools in Masindi Municipality. The study was motivated by these learners' academic underperformance and its adverse effect on their educational progress. The objectives of the study were to analyse the relationship between (a) planning, (b) provision and (c) utilisation of instructional resources for these learners and their academic performance. The study adopted a cross-sectional correlational research design that involved a largely quantitative approach supplemented by qualitative responses to open-ended questions that were included in the interview schedule administered to five head teachers and questionnaires administered to thirty five teachers and eighty pupils selected using purposive sampling. Quantitative data was analysed using descriptive, Pearson correlation as well as linear and multiple regression analysis. Data in form of open-ended responses was analysed using directed qualitative content analysis. The key findings from correlation and regression analysis were: instructional resource planning had a positive and significantly predictive relationship with these pupils' academic performance ($r = .375$, $F(1, 40) = 16.566$, Sig. $= .017 < .05$) and so did instructional resource provision ($r = .666$, $F(1, 120) = 108.71$, Sig. $= .000 < .01$) and instructional resource utilisation ($r = .741$, $F(1, 40) = 98.04$, Sig. $= .000 < .01$). In general, the relationship between instructional resource management and these pupils' academic performance was similarly positive and significantly predictive ($r = .852$, $F(1, 120) = 89.977$, Sig. $= .000 < 0.01$). While instructional resource planning was generally well conducted, the budgeted funds were under-mobilised. Most of the instructional resources, particularly professional teachers and audiovisual materials were insufficiently provided and teachers utilised those that were provided infrequently. From these findings, the study concludes by emphasising the need to improve mobilisation of funds budgeted for instructional resources for these pupils, and to ensure sufficient provision and regular and effective utilisation of these resources. Consequently, the study recommends to the government of Uganda to increasing budgetary funding for and provision of these resources and to head teachers and teachers to ensure that those made available are frequently and effectively utilised to teach these pupils. Further research was also recommended into other factors influencing the academic performance of pupils with hearing impairment.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Academic underperformance of most children with hearing impairment is a subject of concern for parents and educators because of the adverse impact it has on these learners' educational progress. Available global statistics indicate that there are 466 million children with disabilities globally of whom 47% are unlikely to progress beyond primary school, and of this proportion, 71% are unlikely to progress due to underperformance (World Vision, 2022). In Uganda, children with disabilities are 8% (1,027,148) of the total population and of these, only 15% get access to education (World Bank, 2020). Of those who access school, 70% are unlikely to progress educationally due to different factors on which poor performance accounts for 22.1% for all pupils with disabilities and 27.1% among those with hearing impairment (UNESCO, 2023). This concern has caused educational scholars to carry out research in order to establish the cause of the underperformance (Akellot & Bangirana, 2019; Bowen & Probst, 2023; UNESCO, 2023). While this research has identified different causes, not much attention has been paid to Instructional Resources Management, especially in the context of Ugandan districts such as Masindi District. Therefore, using Masindi Municipality as a case in point, this study examined whether academic underperformance of Uganda's learners with hearing impairment who study in inclusive government aided primary schools is related to Instructional Resources Management. This chapter provides the background, research problem, purpose, objectives, research questions, limitations, theoretical and conceptual structure of the study, and operational definitions.

1.1 Background to the Study

This section is systematically developed using different perspectives, which include the historical, theoretical, conceptual and contextual perspective of the study.

1.1.1 Historical perspective: Research on academic performance of children with hearing impairment has been growing since the early days of sign education, which originated in communication through hand gestures that started in the 5th century BC in Greece (Obosu, Adu-Agyem & Opoku-Asare, 2013; Ainscow, Slee & Best, 2019; Gupta, 2022). Sign education itself began in France in the 17th century and spread out globally, reaching Uganda in the late 1950s (Lule & Wallin, 2010). Prior research on this education recognises people with hearing impairment as persons who are either not able to hear at all (full impairment or deaf) or find difficulty to hear well (partial impairment or hard of hearing) (Su *et al.*, 2020; Bowen & Probst, 2023). This scholarship gained momentum from the mid-1990s following the commitment that member states made at the 1994 UNESCO's Salamanca Conference to promote the right to education of persons with disabilities (Ainscow *et al.*, 2019; UNESCO, 2023).

The available global statistics indicate that over 5% the world's population (466 million people including 432 million adults and 34 million children) have partial or full hearing impairment (WHO, 2019; World Vision, 2022). Of these people, 320 million are in developing countries, 85 million of whom being children within the primary school going age of 5-14 years and living in sub-Saharan Africa (WHO, 2019; Kapalamula *et al.*, 2023). In Uganda, 16% (2,027,148) of the population are people with hearing impairment and over a half of them are within the school going age (Mawanda, 2019; World Bank, 2020). The inalienable right to education of children with hearing impairment is globally recognised (Nilson, 2010; Mapolisa & Tshabalala, 2013; Kapalamula *et al.*, 2023), but most of them are out of school with the majority of the few still in

school underperforming academically, especially when they are in inclusive educational settings (Said, 2017; Chizingwa, 2018; Nyaata, 2018).

Such a scenario has caused different scholars to conduct research into its cause, with some developing theories (Dimic, 2018) and models (Soraya, 2016) that can explain these learners' underperformance. Other studies have established that these children's academic performance relates not only to the way they participate in learning (Musayaroh & Aprilia, 2018) and their interest in learning (Antia *et al.*, 2015) but also to the challenges (Gudyanga *et al.*, 2014; Agyire-Tettey *et al.*, 2017) and factors (Rishaelly, 2017) that affect their learning. The management of instructional resources in terms of planning, provision and utilisation has been recognized as a serious determinant of children's academic performance. Historically, the management of instructional resources for learners with disabilities in inclusive schools began to attract the attention of educational policy planners and implementers in the early 1950s in response to the growing complaints raised by parents of children with disabilities (Rossa, 2017). The complaints were that despite recognising that education was all children's right regardless of their personal abilities or disabilities, the instructional resources in almost all schools discriminated against children with disabilities, thereby leaving them with no choice but to drop out of school (Rossa, 2017; Birinci & Sarıçoban, 2021).

The discrimination was such that schools lacked the special teaching and learning resources that children who had autism and those who had hearing, mental, multiple, physical and visual impairment needed to learn (Gyasi, Okrah & Anku, 2020). The teachers who were in the majority of the schools lacked special skills in the provision of special needs education

(Nakayiza, 2019). Apart from a few sign language teachers that could teach pupils who had hearing impairment, there were hardly professional teachers for children with other abilities (Gyasi *et al.*, 2020). In addition, the teaching and learning resources for pupil with disabilities in general and hearing impairment in particular were lacking in almost all schools (Hartman, Smolen & Powell, 2023).

The situation started changing in the 1960s when instructional resources for special needs education began to be designed and provided to schools that had pupils with disabilities. For pupils with hearing impairment, the designed instructional resources were those that could enhance sign language with verbal communication with, residual hearing capabilities of and books for them (Ginting & Aman, 2023). The first instructional materials included visual aids (drawing pictures on words). The 1980s witnessed the development of audio devices with sound frequency moderators or amplifiers, headphones, and cochlear implants that could enable the deaf, hard-of-hearing, dysphasic and pupils with moderate hearing impairment to learn with pupils without these disabilities (Dzulkifli, 2021). The onset of the 21st century saw the development of audio-video recordings and computer-assisted learning programs as more instructional resources for pupils with hearing impairment (Ginting & Aman, 2023). Training of more teachers in special needs education in general and teaching of pupils with hearing impairment was also given more policy and funding impetus in many countries (Nakayiza, 2019; Dzulkifli, 2021).

Throughout the period from the 1950s up to date, the resources provided to the schools to facilitate teaching and learning of pupils with hearing impairment have always depended on how

the schools planned for them according to the number of the pupils they had enrolled, and their utilisation depended on how skilled the teachers in the schools were in applying them (Stevenson, VanLone & Barber, 2020). Nonetheless, research into how this kind of instructional planning, provision and utilisation has affected academic performance of pupils with disability has not been conducted, especially in the context of those with hearing impairment in Uganda in general and in Masindi Municipality in particular (see for instance Obosu et al., 2013; Tabitha, 2013; Pwokah, 2016; Agyire-Tettey et al., 2017).

Yet research on Education for persons with hearing impairment started in Uganda way back in 1958 following the formation of the Uganda Society for the Deaf (Mawanda, 2019). While this research indicates that this Education started at Agha Khan Mosque in Old Kampala and at Mengo Primary School involving lip-reading lessons (Mawanda, 2019), it does not delve into how the academic performance attained by the learners by affected by how their instructional resources are managed in terms of planning, provision and utilisation. The same weakness is depicted by studies on the participation of learners with special learning needs in physical education (Makwasi, 2011), their inclusion in higher education (Emong & Eron, 2016), and challenges faced by students with visual impairment (Otyola, Kibanja & Mugagga, 2017). Additionally, these studies were conducted in Uganda's post-primary and higher educational institutions, but not in primary schools. Generally, therefore, existing scholarship illustrates a contextual gap concerning how Instructional Resources Management relates to the academic performance of primary school learners with hearing impairment. This is the gap that this study filled based on primary schools in Masindi Municipality, in western Uganda.

1.1.2 Theoretical perspective: This study was guided by the instructional management theory complemented by the social learning theory. This theory was proposed by Kounin, positing that effective learning competences (such as numeracy, literacy, social studies and science competences) are developed through proactive instructional management which involves proper classroom and pupil management (Sabanci & Özyildirim, 2020). Classroom management is about how teachers apply professional interactive skills to control pupils in a way that keeps all of them as a group attentive to an ongoing lesson. Pupil management is about motivating each pupil by arousing and maintaining his or her interest in learning through presenting lesson content in an attention-catching manner, customizing the lesson to a learner's needs, and keeping the pupil focused and on track on the lesson as it progresses (Sabanci & Özyildirim, 2020; Mariyadas & Saravanakumar, 2022). These two levels of instructional management are preceded by instructional planning. This planning involves budgeting, mobilising and allocating resources required to facilitate effective classroom and pupil management (Yasin & Mustafa, 2022). This theory was applied as a guide for identifying the specific objectives that this study set out to achieve as shall it was stated later.

This theory however, emphasizes instructional management without paying much attention to how the hired professional teachers use the allocated teaching materials to facilitate development of learning competences. This is why it was complemented in this study by the theory of social learning proposed by Albert Bandura in 1963 to explain learning as a process of acquiring new knowledge, skill, attitude or behaviour through observation, imitation and modelling, and this process it confirmed to have occurred only when a learner is able to reproduce (or perform) what they have learnt (Cherry, 2019; Kurt, 2020). The social learning theory asserts that a learner

acquires and is able to reproduce new knowledge, skill, attitude or behaviour by using motivated self-efficacy to observe and imitate live, symbolic and verbal models to which they are exposed (Horsburgh & Ippolito, 2018). This theory was relevant to this study not only because it stresses observational learning that is best suited for learners with hearing impairment but also links models to learners' reproduction of what they have learnt (Sabanci & Özyildirim, 2020; Mariyadas & Saravanakumar, 2022).

The social learning theory was applied as a guide in this study to identify the resources on which instructional management should focus to facilitate development of learning competences as measured by the academic performance achieved by pupils with hearing impairment. Specifically, the models this theory identifies were regarded in this study as instructional resources. Live models were regarded as the teachers needed to teach learners with hearing impairment, symbolic models were regarded as the visual aids and facilities, and verbal models were considered as the words and sentences written or recorded in textbooks, exercise books, audio-visual devices or on the chalkboard to describe the knowledge, skill, attitude or behaviour learner is expected to acquire (Colclasure, Thoron & LaRose, 2016). Exposure to these models was regarded as their provision and utilisation. The reproduction of what has been learnt was regarded as academic performance. In general, the instructional management theory guided the identified of the dimensions of the instructional management (planning for, provision and utilisation of instructional resources) and was reinforced by the social learning theory that guided identification of the actual instructional resources needed to develop the learning competences expected of pupils with hearing impairment.

***1.1.3 Conceptual Perspective*:** In this study, the main concepts included Instructional Resources Management, which constituted the independent variable and academic performance that was regarded as the dependent variable. As alluded to earlier, instructional resources refer to all the teaching resources that facilitate learning (Abdu-Raheem, 2016). They include teachers and teaching materials that facilitate development of students' academic and non-academic competences as prescribed by the curriculum followed by a school (Akpan & Okoli, 2017). Teaching materials range over a wide spectrum that includes teaching aids, school infrastructure (classrooms, libraries, labs, and playgrounds), classroom furniture, and even a school's general instructional atmosphere available to facilitate development of students' learning competences (Livumbaze & Achoka, 2017; Sabanci & Özyildirim, 2020; Mariyadas & Saravanakumar, 2022).

In this study, the focus was on only instructional resources needed to facilitate development of learning competences, which include knowledge and skills that primary school pupils with hearing impairment are expected to demonstrate in the form of the academic performance they achieve in literacy, numeracy, social studies and science. Consequently, the management of instructional resources was conceptualised based on Abdu-Raheem (2016) who describes it as a concept involving planning for, provision and utilisation of teaching resources for the purpose of facilitating development of learning competences as measured by academic performance achieved by learners.

Planning for teaching resources involves determining the number, qualification and experience of teachers as well as the teaching materials they need to facilitate learning as desired, and budgeting for these resources, identifying necessary financing sources and giving necessary

budgetary priority (Livumbaze & Achoka, 2017). Teaching resource provision involves putting in place the planned instructional resources. It involves hiring the needed teachers and mobilising the necessary teaching materials (Yasin & Mustafa, 2022).

Utilisation of teaching resources involves their use to support students' learning of new academic and non-academic behaviours as prescribed by the curriculum followed by a school (Ayutthaya & Damrongpanit, 2022). These are the definitions adopted in this study. The nature of each of these dimensions of Instructional Resources Management was established using learners' and teachers' assessment of their provision and utilisation, where provision referred to these resources' presence and utilisation to their use as expressed by teachers modelling (personally demonstrating what should be learnt), applying symbolic and verbal models, and motivating learners with hearing impairment to arouse their interest to learn.

Learners' academic performance refers to the test and examination results that measure the level of learning competences (knowledge and skills) demonstrated by students in different curricular areas (Nwankwoala, 2021). For primary schools in Uganda, academic performance demonstrates competences students demonstrate in learning numeracy (Mathematics), literacy in English, Science and Social Studies (Ntuyo, 2017). This performance can be assessed objectively using actual marks that pupils score out of 100% and graded using different ways (Abunawas, 2021), which for Uganda's primary pupils, include Distinctions (D1, D2) downwards to Credits (C3, C4, C5, C6) through Passes (P7, P8) to Failure (F9) (Uganda National Examinations Board [UNEB], 2021).

UNEB (2021) indicates that with that grading, pupils' academic performance is measured in such a way that students who attain aggregate 4-12 as the total score from the four subjects pass in Division I, those who obtain aggregate 13-20 pass in Division II while who get aggregate 20-24 pass in Division III. Pupils who score aggregate 25-32 pass in Division IV yet those whose aggregate goes beyond 32 are regarded as having failed or scored failures (F) (UNEB, 2023). Pupils who score only Distinctions demonstrate excellent learning competences, those who score Credits demonstrate average learning competences, those who score Passes display poor learning competences yet those fail are regarded as having demonstrated no learning competence at all.

Academic performance can also be assessed subjectively in which case it reflect demonstration of learning competences along a scale ranging from Very Poor through Poor, Average and Good to Excellent (Finch & Cassady, 2014; Leckie & Goldstein, 2019). Academic performance in this study was conceptualized as learning competence demonstrated in terms of literacy, numeracy, social studies and science knowledge and skills demonstrated by learners with hearing impairment from the taught curriculum (Leckie & Goldstein, 2019). This performance was assessed using a scale ranging from very poor through poor, average and good to excellent. This assessment was used to avoid the difficulty associated not only with quantification of the instructional resources provided and utilised in a school but also with access to the objective results reflecting the academic performance of learners with hearing impairment who had not sat for UNEB Primary Leaving Examinations (PLE).

***1.1.4 Contextual perspective*:** In Uganda, education is known as a basic human right of all citizens of school going age regardless of their physical, mental, social, gender and ethnic status.

Over a million Ugandans of school going age who have hearing impairment (Mawanda, 2019; World Bank, 2020) are certainly among the citizens whose such right is provided for in Article 30 of the Constitution of the Republic of Uganda of 1995. Moreover, there are no limitations to enjoyment of this right by Ugandans of primary school going age.

Government introduced Universal Primary Education (UPE) in 1997 and has since provided largely free education in all its inclusive primary schools (Moore *et al.*, 2023). In addition, the Persons with Disabilities Act, 2006 provides for freedom of association and education for all persons with disabilities in Uganda, including those with hearing impairment. In fact, a number of children with disability, especially those with hearing impairment have been enjoying their right to education and freedom of association by joining inclusive primary schools in different districts in Uganda (Nyenje & Nkata, 2016; Burlando, 2022). However, most of these children are not performing well (Aciro, 2021).

According to UNEB (2021), 1,315 pupils with disability sat for Primary Leaving Examinations (PLE) in 2020 nationally. Of these pupils, 29.3% were blind, 18.8% had hearing impairment, 43.2% were physically handicapped, 5.5% had dyslexics and 3.2% had other forms of disability. UNEB (2021) indicates further that only 30% of these pupils passed in Division I, II and III. Therefore, 70% either passed in Division IV or failed. The situation was even worse in the 2019 and 2020. Out of the 1076 and 1033 pupils with disabilities who sat for PLE in 2019 and 2020, only 23% and 19% passed in Division I, II and III, respectively. The worst performance was registered in 2022 as out of 2,257 pupils with disabilities of whom 263 were those with hearing

impairment, none passed in Division, only 50 passed in Division II, 41 passed in Division III, 56 in Division IV and 116 were ungraded (UNEB, 2023).

Of interest to this study is that pupils with hearing impairment registered the poorest academic performance compared to their counterparts. UNEB (2023) indicates, for instance, that 80 of the 461 who were partially blind passed in Division I, 209 passed with in Division II, 71 were in Division III, 59 were in Division IV and only 42 were ungraded. The same source indicates that out of the 690 pupils with physical disabilities, 155 passed in Division I, 339 passed with in Division II, 99 were in Division III, 60 were in Division IV and only 37 were ungraded. Among the 140 pupils with dyslexics, 26 passed in Division I, 70 passed with in Division II, 40 were in Division III, 20 were in Division IV and only 24 were ungraded.

The preceding performance statistics suggest that pupils with hearing impairment were worse performers compared to pupils other with disabilities. This is why this study focused on pupils with hearing impairment, more so because they tend to have more teachers compared to pupils with other disabilities (Yuwono & Okech, 2021). Indeed, out of the 389 special needs education teachers employed in UPE schools over the last five years, over 40% are teachers specialised in the teaching of pupils with hearing impairment (Ministry of Education & Sports, 2022). Out of the total number of teachers who teach pupils with hearing impairment in Uganda, 14 were in Masindi District by 2019 but their number increased to 17 teachers in 2022 (Masindi District Education Office, 2022). The academic performance that these teachers and other instructional resources enabled pupils with hearing impairment in Masindi Municipality to attain from 2017 to 2021 was as illustrated in Table 1.1.

Table 1.1: PLE UNEB Results for Masindi Municipality

Year	Number of Candidates with hearing impairment	Percentage of candidates in each knowledge area				
		Passed with at least a P8				
		Literacy	Numeracy	Science Knowledge	Social Studies Knowledge	Failure (F9)
2017	33	4.0%	3.0%	8.1%	10.1%	74.8%
2018	35	5.0%	6.0%	11.6%	17.1%	60.3%
2019	43	4.0%	4.0%	8.0%	10.0%	74.0%
2020	46	4.0%	3.3%	6.1%	7.6%	79.0%
2021	52	3.0%	4.5%	7.0%	7.6%	77.9%

Source: Masindi Municipality Education Report (2021, 2022)

The PLE results in Table 1.1 indicate that 60.3% to 79% of the pupils with hearing impairment failed all the knowledge areas, thereby attaining academic performance considered poor in Uganda. Therefore, the majority of these pupils achieved poor academic performance during the period 2017-2021. These big proportions of failure cause concern and hence a need to establish whether their cause relates to Instructional Resources Management in inclusive primary schools.

1.2 Statement of the Problem

Instructional Resources Management is, in terms of planning for, provision and utilisation of teaching resources, aimed at ensuring that pupils realise learning outcomes expected of them in the form of the academic performance they achieve from final national examinations (Agyire-Tettey et al., 2017; Ayutthaya & Damrongpanit, 2022; Yasin & Mustafa, 2022). However, despite Government efforts to ensure that all Ugandans of primary school going age enjoy their

right to education, the academic performance attained by most of the pupils with hearing impairment in inclusive UPE schools from the final national PLE is poor. Masindi Municipality Education Report (2020, 2021) indicates, for instance, that 60% to 79% of the pupils with hearing impairment failed their PLE examinations between 2017 and 2021. As Table 1.1 indicates, 74.8% of these pupils failed PLE in 2017, 60.3% failed in 2018, 74% failed in 2019 and those who failed in 2020 and 2021 were 79% and 77.9%, respectfully. At the same time Instrument Resources Management has been below expectation as the planning for, provision and utilisation of teaching and learning resources have been insufficient, ranging between 40% and 49% in all UPE schools in this Municipality (Masindi Municipality Education Report (2020, 2021). Nonetheless, the relationship between this management and the academic performance of pupils with hearing impairment has not been investigated. Consequently, it is not clear whether the poor academic performance realised by the majority of pupils with hearing impairment in Masindi Municipality relates to the management of their instructional resources. This relationship needs to be understood to establish whether it can be used as a basis for improving these pupils' academic performance to guarantee their educational progress, which is now at stake. Providing this understanding motivated the researcher to investigate the relationship between management (planning for, provision and utilization) of instructional resources and these children academic performance.

1.3 Purpose of the Study

The research sought to examine Instructional Resources Management and its relationship with the academic performance of learners with hearing impairment in five inclusive government aided primary schools in Masindi Municipality.

1.4 Study Objectives

1) To analyse the relationship between planning for instructional resources for learners with hearing impairment and their academic performance in inclusive government aided primary schools in Masindi Municipality.
2) To examine the relationship between provision of instructional resources for learners with hearing impairment and their academic performance in inclusive government aided primary schools in Masindi Municipality.
3) To analyse the relationship between utilisation of instructional resources for learners with hearing impairment and their academic performance in inclusive government aided primary schools in Masindi Municipality.

1.5 Research Questions

1) What is the relationship between planning for instructional resources for learners with hearing impairment and their academic performance in inclusive government aided primary schools in Masindi Municipality?
2) What is the relationship between provision of instructional resources for learners with hearing impairment and their academic performance?
3) How does the utilisation of instructional resources for learners with hearing impairment relate with their academic performance?

1.6 Research Hypotheses

1) There is a positive relationship between planning for instructional resources for learners with hearing impairment and their academic performance in inclusive government aided primary schools in Masindi Municipality.

2) There is a positive relationship between the provision of instructional resources and the academic performance of learners with hearing impairment in the inclusive government aided primary schools in Masindi Municipality.
3) There is a positive relationship between utilisation of instructional resources and academic performance of learners with hearing impairment in the inclusive government aided primary schools in Masindi Municipality.

1.7 Scope of the Study

***1.7.1 Geographical scope*:** The study was conducted in five government aided primary schools in Masindi Municipality. Masindi Municipality was selected because most of its learners with hearing impairment achieved poor academic performance, and no research had been conducted to establish the cause. In addition, the presence of these learners with hearing impairment coupled with their poor academic performance raised the question of whether those in government aided primary schools in this Municipality had the necessary instructional resources. Their presence also implied that the study population needed to accomplish the study could be accessible in the Municipality.

Furthermore, all the government aided primary schools in Masindi municipality, including Masindi Army Day P/S, Masindi Model P/S, Kamurasi Demonstration P/S, Masindi Islamic P/S, and Masindi Public P/S had children with hearing impairment. Therefore, in view of Uganda government efforts to provide its schools with instructional materials needed to facilitate all citizens who have access to the schools, each of the schools was expected to have instructional resources needed to teach these learners. Consequently, the schools were expected to have the

study population for this research. As alluded to above, all these schools' pupils with learning impairment performed very poorly (Masindi Municipality Education Report, 2020, 2021), which implied that they reflected the problem whose cause was investigated in this study. That is, examining whether such poor academic performance was explained by the management of these pupils' instructional resources.

***1.7.2 Content scope*:** The study analysed the Instructional Resources Management and its consequence on the academic performance for the learners with hearing impairment. The Instructional Resources Management was examined in terms of its dimensions of planning for, provision and utilisation of teaching resources, which were; teachers, hearing aids, concrete objects from nature, and representations of actual objects, audio-visual materials and written/typed word descriptions. Academic performance was analysed using respondents' assessment of how excellent/very satisfactory to poor/very satisfactory these learners' demonstration of knowledge expected of them in numeracy, literacy, science and social studies was.

***1.7.3 Time scope*:** The study period was from 2016 when poor academic performance that learners with hearing impairment attained from PLE started drawing critical concern among educationists to May 2022 when the final dissertation was submitted.

1.8 Significance of the Study

The study findings have theoretical and practical benefits. Theoretically, the study would enrich the existing knowledge by contributing new knowledge about how the Instructional Resources

Management influences the academic performance of learners with hearing impairment within the context of primary schools in Uganda in general and in Masindi Municipality in particular. It also provides new evidence on factors constraining the provision of these resources.

Practically, the new knowledge the study would generate would act as a groundwork that academics of education, especially those specialised in the education of learners with special learning needs could use to conduct further research. The study also provides a platform for teachers and students to air out their views on what they lack and want to be improved in their teaching and learning, respectively.

Furthermore, the study provides recommendations that can be used by Ministry of Education and Sports, particularly curriculum policy implementers to improve the planning for, provision and utilization of instructional resources needed by inclusive primary schools in Uganda to improve the academic performance of learners with hearing impairment. The ultimate benefit of the study is to improve learning among learners with hearing impairment and lift their academic performance.

1.9 Limitations and Delimitations of the Study

1.9.1 Limitations: The study faced a methodological restriction in that it was centred on only one Municipality, yet Masindi municipality had many local council IIIs. This limited the generalisation of its findings to the whole district, let alone to Uganda in general. Preliminary literature search suggested that not much research had been conducted in Uganda about the relationship between Instructional Resources Management and academic performance of learners

with hearing impairment in educational institutions, particularly primary schools in Uganda. Therefore, the study was limited in context of local literature. The study was also restricted in terms of financial support for data collection, since the researcher was self-sponsored. The reluctance of some respondents to take part also limited the study. However, effort was made to replace those who were unwilling with those who were willing in order to minimise this limitation.

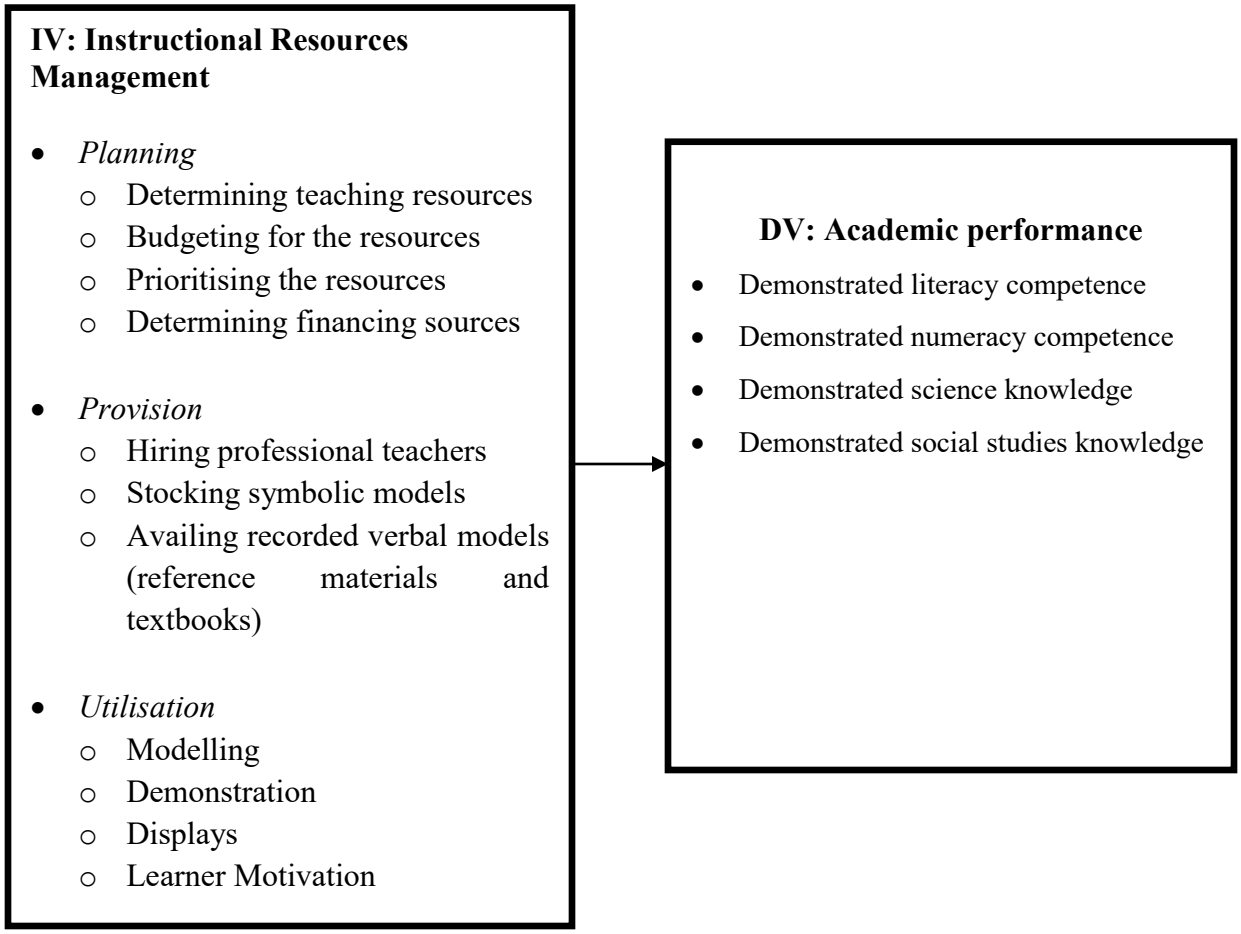
1.9.2 Delimitations: Many factors affect academic performance of children with hearing impairment, but the study focused on only Instructional Resources Management. In addition, while there are many human beings and objects that learners with hearing impartment can observe and learn from through imitation, this study was limited to only those teaching resources used to impart the curricular content recommended for primary schools. There are also many other areas that have inclusive primary schools where pupils with hearing impairment are enrolled. However, this study was confined in government aided primary schools in Masindi Municipality.

1.10 Conceptual Framework

The study was conceptualised as shown in Figure 1.1 below. This conceptual framework was based on the assumption that academic performance by children with hearing impairment was affected by Instructional Resources Management dimensions of planning for, provision and utilisation of instructional resources. Therefore, the dimensions of Instructional Resources Management constituted the independent variable (IV) measured in terms of planning for, provision and utilization of human, symbolic models and verbal models. Academic performance

was the dependent variable (DV) and was analysed by establishing the level at learning competence demonstrated by learners with hearing impairment in terms of Literacy, Numeracy, Science and Social Studies knowledge and skills. The demonstration of these competences was assessed by respondents using a Likert scale.

Figure 1.1: Conceptual Framework



Source: *Developed by Researcher based on Instructional Resources Management theory, social learning theory and relevant literature by Leckie and Goldstein (2019), Sabanci and Özyildirim (2020), Mariyadas and Saravanakumar (2022), and Yasin & Mustafa (2022).*

1.11 Operational Definitions of Terms

The concepts of the study were operationally defined as follows:

Instructional Resources Management: This refers to planning for, provision and utilization of human, symbolic models and verbal models that facilitate the education of pupils with hearing impairment

Instructional resources: These refer not only to the teachers required to do modelling and motivate learners but also the teaching materials (symbolic and verbal models) they use to facilitate the learning of pupils with hearing impairment, thereby enabling them to attain academic performance expected from them.

Planning for instructional resources: The concept refers to the process that involves identifying teaching resources for pupils with hearing impairment, budgeting for these resources, prioritising them and determining sources from which money needed to purchase the resources can be mobilised.

Provision of instructional resources: The making live models, symbolic models, and verbal models available and accessible to facilitate the teaching of learners with hearing impairment.

Utilisation of instructional resources: Teachers' use of the available symbolic and verbal models to facilitate modelling for learners with hearing impairment, and to motivate their interest in learning.

Modelling: Teachers' use of observable actions to demonstrate the new behaviour they want pupils with hearing impairment to learn.

Live models: The teachers needed to teach pupils with hearing impairment through modelling and motivation.

Symbolic models: All visual aids that facilitate teaching of learners with hearing impairment, including pictures, photographs, maps, diagrams, and drawings; audio-visual materials which include motion pictures, film clips, filmstrips, slide sequences, transparencies, records and tape recordings, radio and television broadcasts; concrete objects from environment; illustrations of actual objects and phenomena e.g. globes, experimental models, castings, and hearing aids or devices that facilitating visual learning for pupils with partial hearing impairment.

Verbal models: These refer to all written words and sentences provided either in reference materials and textbooks or written on chalkboard or in exercise books to facilitate learning of pupils with hearing impairment.

Academic Performance: Level of learning competences (knowledge and skills) demonstrated by learners with hearing impairment by means of examinations administered to them in literacy, numeracy, science and social studies content learning, and assessed using a scale of five points ranging from very poor to excellent.

Literacy: Competence demonstrated by learners with hearing impairment in terms of reading and writing the words and sentences that they are expected to have learned, as assessed using a 5-point scale.

Numeracy: Competence demonstrated by learners with hearing impairment in terms of adding, subtracting, multiplying and dividing numbers he/she expected to have learned, as assessed using a 5-point scale.

Science knowledge: Competence demonstrated by learners with hearing impairment in terms of correct answering of questions asked from the science content he/she expected to have learned, as assessed using a 5-point scale.

Social studies knowledge: Competence demonstrated by learners with hearing impairment in terms of correct answering of questions asked from the social studies content he/she expected to have learned, as assessed using a 5-point scale.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The chapter provided the theoretical review and the review of related literature, which was organised according to the themes derived from the objectives of the study.

2.1 Theoretical Review

This study was grounded in the instructional management theory complemented by the social learning theory. The instructional management theory posits that effective learning occurs through proactive instructional management that results from effective classroom and pupil management (Sabanci & Özyildirim, 2020). Classroom management involves teachers using effective interactive skills and teaching resources that enable teachers to control pupils as a group and keep them attentive to an ongoing lesson. Pupil management involves motivating each pupil by arousing and maintaining his or her interest in learning through presenting lesson content. These two levels of instructional management are realised through planning that facilitates the hiring of professional teachers and their facilitation with necessary teaching resources (Mariyadas & Saravanakumar, 2022). This theory however, emphasizes instructional management without paying much attention to how the hired professional teachers use the allocated teaching materials to facilitate learning (Yasin & Mustafa, 2022). This was why it was complemented by the social learning theory.

Albert Bandura developed the Social Learning Theory after realising that there was new behaviour (or knowledge, skills, attitudes) that learners acquired and reproduced in interpersonal

contexts, but was not sufficiently explained by the then existing cognitive learning theory or behavioural learning theory alone (Akay, 2020). This theorist asserted that a new theory was needed to explain such learning. Consequently, Bandura proposed the social learning theory by combining relevant tenets of the cognitive learning theory, which submits that learning occurs through psychological factors, and the behavioural learning theory, which asserts that learning occurs through responding to environmental stimuli (Deming & Johnson, 2019; Naraswari, Suranata & Suarni, 2023). Based on this combination, Bandura postulated that a person acquires and reproduces new behaviour by observing and imitating what others do through modelling (Salleh & Zainal, 2018; Kurt, 2020).

Consequently, his social learning theory states that learning is a cognitive process that occurs in a social context purely through attentive observation and imitation of live, verbal and symbolic models to which a learner is exposed and is retained, then reproduced through motivated self-efficacy (Horsburgh & Ippolito, 2018).This theory was appropriate for this study because for pupils with hearing impairment, learning and reproduction of new behaviour largely occurs visually through observation and imitation of the models to which they are exposed (Obosu et al., 2015).

2.2 Review of Related Literature

This section was organised in accordance to the themes derived from the objectives of the study.

2.2.1 Relationship between planning for instructional resources and learners' academic performance: Previous research indicates that there is a significant and positive relationship between planning for needed educational resources and students' academic achievements

(Males, Flores & Ivins, 2016; Kanyonga, Mtana & Wendt, 2019; Tikkanen, Pyhältö, Pietarinen & Soini, 2019; Santos, 2021; Wekesa & Kitainge 2022). These studies, however, discussed this relationship within the general context of curriculum planning and school effectiveness and performance. Their focus was on how curricular reforms needed to improve instructional resource planning as a basis for enhancing school effectiveness and performance in general. It was therefore necessary to analyse the nature of this relationship within the specific context of instructional resource planning for pupils with disabilities, particularly hearing impairment and their academic performance.

Specifically, Wekesa and Kitainge (2022) conducted a descriptive survey research on the how planning for instructional resources influenced academic performance of schools in Western Kenya. Findings from this research revealed a significant and positive relationship between planning for instructional resources particularly the required teachers, textbooks, reference materials and teaching equipment, and school academic performance. The findings also showed that the planning for resources was well-conducted, which would have resulted into good academic performance if the plans had been effectively implemented. Wekesa and Kitainge (2022) however, focused on school-level planning without delving into its specifics such as planning for particularly the instructional resources necessary to facilitate the teaching and learning of students with hearing impairment.

In addition, Santos (2021) observed that planning for instructional resources involves making decisions in advance on all the educational resources and facilities such as laboratories, workshops, libraries, classrooms, assembly halls, teaching aids and devices, including all

educational technologies required to facilitate effective teaching. Santos (2021) added that this planning is positively related with student learning and academic achievement because it determines in advance how students are taught. This scholar noted that better planning for instructional resources enhance academic performance and vice-versa. Santos (2021) however, analysed planning for educational resources for school effectiveness in Nigeria, but not in Uganda let alone Masindi Municipality. Moreover, he examined instructional resources in general, but not those necessary to facilitate learning of pupils with hearing impairment. Accordingly, this present study was needed to verify his observation within the context of these pupils, taking those in primary schools in Masindi Municipality as a point of reference.

In addition, Males *et al.* (2016) found that the manner in which curriculum materials were planned for instructional resources had the most significant influence on what teachers could actually do to facilitate classroom learning and pupil performance subsequently achieved by 80% of the pupils. These researchers however, made this observation using only teachers as their sample and they did not state whether they were dealing with instructional materials or students with hearing impairment or not. In addition, Males et al. (2016) focused on the planning of curriculum materials needed to facilitate the learning of Mathematics, and their study was conduction in North America. Therefore, its findings needed to be validated in the context of pupils with learning impairment in primary schools in Masindi Municipality.

Likewise, Tikkanen *et al.* (2019) observed that planning for instructional resources involves budgeting for resources needed to hire and pay teachers and to purchase the teaching materials the teachers need to teach students and enable them to achieve desired academic performance.

To these researchers, planning for instructional resources relates positively and significantly with students' academic achievements. The more effective this planning is the higher is the likelihood for students to achieve expected academic performance.

Similar remarks appear in the work of Kanyonga *et al.* (2019), which also added that planning for instructional resource includes identifying sources of the funds needed to buy the necessary teaching and learning aids. Kanyonga *et al*. (2019) noted further that when the identified funding sources are effective, they enhance a school's academic performance by supporting it with the instructional resources required to bring it forth. In support, Wallace (2020) argued that planning for instructional resources, which is a largely budgeting process, improves academic performance, especially when it involves government allowing teachers and head teachers to identify and submit what they need to do and the facilities they need to do it in an accountable manner that facilitates delivery of the best educational services to especially students with special learning needs.

To note however, is that both Tikkanen *et al.* (2019) and Kanyonga *et al.*(2019) made the observation within contexts that were outside Uganda. Kanyonga *et al.*'s (2019) study was in Tanzania, Arusha City, about implementation of competence-based curriculum in technical colleges while Tikkanen *et al.*'s (2019) study focused on lessons that could be drawn from a large-scale curriculum reform to enhance school performance. In the case of Wallace (2020), the main focus was on examining planning that optimizes educational resources to improve student learning and academic performance. Therefore, they raise the question of whether they are also

associated with the implementation in lower primary school thematic curriculum in Uganda. This is the question that this study was intended to answer empirically.

Besides the studies cited above, Usman (2016) conducted a study on educational resources as an essential element for effective school administration. In the course of his analysis, this researcher observed that planning for instructional resources involves identification of required teachers and teaching materials and facilities, developing their costing and allocating funds needed to make them available to a school. Usman (2016) added that this planning is effective when it is based on the instructional interpretation of school curriculum and syllabus to determine the resources required to provide and maintain the necessary teaching resources, including all human, material, non-material, audio-visual, school environment, and community facilities required to create a school environment that maximizes student academic and non-academic achievement Usman (2016) however, made these observations in the context of Nigerian but not Ugandan schools.

Generally, extant literature suggests a positive relationship between planning for instructional resources and student academic performance. However, much of this literature discusses this relationship based on school contexts outside Uganda. Moreover, the literature takes a more general perspective to instructional resource planning, thereby paying little attention to how the planning of teaching resources for particularly learners with hearing impairment relates to their academic performance. This is the gap that this study at hand covered.

***2.2.2 Relationship between provision of instructional resources and learners' academic performance*:** Different studies conducted aimed at establishing the relationship between provision of instructional resources and academic performance (for instance Akpan & Okoli,

2017; Mutiso, 2020; Wekesa & Kitainge, 2022). However, the academic performance that these studies analysed was that of schools, but not that of the pupils especially those with hearing impairment. Yet the academic performance of a school can vary according to the categories of the enrolled students, including the category of those with different disabilities (Andiema, 2020). Consequently, it is necessary to provide a deeper analysis of this relationship within the context of each category of students. It is for this reason that this study analysed the nature of this relationship in the context of pupils with hearing impairment.

In particular, Wekesa and Kitainge's (2022) study indicates that there is a positive relationship between provision of instructional resources and academic performance. This study shows further that many schools in western Kenya are provided with inadequate instructional materials, except textbooks for students. Reference materials and teaching equipment for teachers were not adequately provided to these schools. Specifically, the schools were not provided with enough ICT devices like computers, and as a result, schools performed poorly in computer science. Wekesa and Kitainge's (2022) study however, focused on school performance in general. The results therefore, needed to be validated within the specific context of the academic performance of particularly pupils with hearing impairment.

Aleru (2022) conducted a study on implementation strategies of universal primary education policy and pupils' academic performance in Ayivuni Sub-County Arua District. The findings revealed a significant and positive relationship between provision of instructional resources such as physical school facilities, teaching materials and teachers and students' academic performance. This research revealed further that although Uganda government made effort to

provide instructional resources by constructing more school physical facilities and training of more teachers, most of the students' academic performance remained poor because the resources were not adequate.

Similar observations were made in the studies of and Sarkodie (2022) and Nyadoi (2023), which added that the studied schools had inadequately equipped laboratories, poorly stocked libraries and demoralisation of the few available teachers contributed to pupils' poor academic performance. important to note is that these studies were conducted in Uganda, but the learners included in their samples were not categorised according to whether they had disabilities such as hearing impairment or not. Therefore, the studies reflected a general view which may not been sufficiently informative as far as the particular case of learners with hearing impairment is concerned. Moreover, a critical analysis of the two studies suggests that the provision of instructional resources varied across the selected schools none of which was in Masindi Municipality. Furthermore, the studies focused on academic performance that the learners attained from only particular subjects, which included Mathematics and English, thereby leaving out other subjects such as science and social studies.

In contrast, Kan and Klasen (2021) conducted a study to evaluate the educational outcomes of universal primary education schools in Uganda. Their evaluation results revealed that schools that attained better educational outcomes were those with more instructional resources, and those that lacked instructional resources registered poor educational outcomes, especially in terms of students' academic grades. Specifically, the findings revealed that schools that had sufficient teaching and learning materials, including classroom instructional materials like chalks, dusters

and charts were abundantly provided performed better compared to those that lacked or did not have enough of these resources. Kan and Klasen (2021) however, conducted nationwide evaluation using data from the Uganda National Panel Survey (UNPS) and did not disaggregate the findings to reflect differences in the established relationship across Uganda's primary schools in different districts and municipalities such as that of Masindi and across the different categories of pupils such as those with hearing impairment. For this reason, this study was conducted to examine the nature of this relationship within the particular context of pupils with hearing impairment.

In addition, Akpan and Okoli (2017) examined the outcome of instructional materials on the academic performance of pupils. The findings revealed that children who were taught in schools where instructional materials were adequately provided performed better than those who studied in schools which lacked these materials. Consequently, they recommended that schools that did not have enough instructional resources needed to avail them to their teachers to improve the performance of their pupils. In addition, Mutiso's (2020) study found that there was a positive relationship between provision of instructional materials and students' academic performance, adding that this provision was acutely inadequate in public secondary schools in Machakos County in Kenya and this explained why most of the students in these schools underperformed academically. However, while Akpan and Okoli (2017) conducted theirs in Ikwuano Abia State of Nigeria, Mutiso conducted hers in Machakos County, Kenya. Moreover, none of these researchers focused on learners with hearing impairment, hence a gap to fill within the context of government-aided inclusive primary schools in Uganda, particularly in Masindi Municipality.

While all these studies were conducted in different contexts, they all showed a positive relationship between the provision of instructional resources and academic performance. Some of these studies indicated that the relationship was significant while others showed that it was insignificant. This suggested that the nature of the relationship between provision of instructional resources and learners' academic performance varies from one context to another. This also suggested that if a relationship of this nature has not been established in a particular context such as that of learners with hearing impairment in Uganda, investigating it becomes necessary especially when these learners' academic performance is poor. Therefore, this study was needed to verify their findings in the context of these learners using inclusive government aided primary schools in Masindi Municipality in Uganda.

2.2.3 Relationship between utilisation of instructional resources and learners' academic performance: An examination of previous research revealed that the manner in which instructional resources are used has a positive relationship with the academic performance achieved by learners. Akungu (2014), for instance, in his study on the effect of teaching and learning resources on students' performance in Kenya Certificate of Secondary Education in Free Day Secondary School Education found out that proper utilisation of instructional materials enhances learners' academic performance while their inappropriate use decreases it as noted before, this study was conducted in Kenya but not in Uganda.

Obosu et al., (2013) conducted a qualitative study in schools for the deaf on the use of visual art forms in teaching and learning and how it affected the academic performance of these learners.

The study findings revealed that although these pupils with hearing impairment are recognised as visual learners, the use of the visual teaching resources was unfortunately inadequate. There was no sufficient modelling for the purposively selected learners, and use of other visual aids was very infrequent. As a result, most of the learners performed poorly. This study was however, conducted on deaf pupils in Ghana. The question then was whether its findings also hold in the context of Uganda.

Boi-Dok, Twumasi-Ankrah and Hanson (2019) conducted a study examining the use of instructional resources in terms of how teachers conducted their modelling role of interpreting for pupils with hearing impairment to improve their learning and academic performance in Ghana. Findings showed that the teachers had special needs in mind when preparing for science classes. Thus, a study of this nature needed to be conducted in Uganda and particularly in Masindi Municipality in Uganda.

Furthermore, Punzalan (2017) used an experimental research design to investigate how the visual arts affected students' academic performance. The outcomes of the study revealed that there was a significant difference in the post-test performance of the experimental and control groups. The group in which teachers used the visual arts to facilitate students learning recorded a significantly higher academic performance compared to the group in which these teaching aids were not used, but where teachers relied on only the old-style lecture-discussion method. Further investigation revealed that using visual arts in different learning areas inspires learners to participate, which develops their confidence and interest in the learning process, leading to improved academic performance. This study was however, conducted in Philippines, Bulacan State University from

the College of Education on ordinary students. Therefore, its findings needed to be verified within the context of learners with hearing impairment. This was what the present study did using primary school learners with hearing impairment and selected from Masindi Municipality in Uganda.

A study by Krukru (2015) indicated that the use of instructional materials such as audio-aids, audio-visual aids and visual aids such as film strips, maps, and other pictorial materials, enhances the performance learners achieve either in terms of ratings (qualitative assessments) or in terms of objective grades scored from classroom exercises, internal tests and external examination in Social Studies. The study indicated that appropriate use of these materials makes the lesson realistic and interesting because it creates opportunities for learners' practical participation in the lesson based on visibly objective facts with which learners they relate, thereby gaining knowledge and skills practically. Krukru (2015) however, covered only symbolic models, leaving out live and verbal models. Moreover, this researcher conducted the study among normal students in secondary schools in Nigeria, but not among learners with hearing impairment in primary schools in Uganda, thus a gap.

Similar observations appear in the study of Nyaata (2018) in special schools in Kisii County, Kenyaon communication teaching approach and its influence on transition of class three learners with hearing impairment. Could these findings hold the same case with teachers in Uganda? In general, extant research indicated that there is a affirmative relationship between utilization of instructional resources and learners' academic performance. This relationship had however been mostly established in studies conducted outside Uganda. It therefore needed to be verified within

the context of Uganda. This is what the present study did using primary school learners with hearing impairment and selected from Masindi Municipality in Uganda.

2.3 Summary of Literature Review

The preceding literature discloses that different researches had been conducted to understand the relationship between the planning for, provision and utilisation of instructional resources and academic performance. Most of these studies were however, conducted outside Uganda. The few that were conducted in Uganda focused either on student in post-primary and higher education institutions or on all pupils in inclusive primary schools. The very few studies conducted on primary school pupils with disabilities were conducted in Uganda were not carried out in Masindi Municipality, but in other sub counties. Therefore, the relationship between the planning for, provision and utilisation of instructional resources and academic performance had not been established for particularly primary school learners with hearing impairment in Masindi Municipality. This study hence, covered this gap in the existing body of knowledge.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discusses the way the study was conducted. It explains the research design, location of study, target study population, sampling strategies and sample size, research instruments, validity of instruments, reliability of instruments, data collection procedures, and proposed data processing and analysis. The chapter ends with a discussion on ethical considerations made in this study.

3.1 Research Design

This refers to the overall plan a researcher selects to use to integrate the different components of the study in a coherent and logical way, thereby guaranteeing effective addressing of the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data (Amin, 2005). As Saunders *et al.* (2012) observed, the study was designed as a cross sectional correlational survey as its purpose was to examine the nature of the relationship between Instructional Resources Management and the academic performance of learners with hearing impairment at that particular time so as to determine how it could be improved from its current state then to a relationship that could optimize these learners' academic performance.

In addition, the cross-sectional correlational survey research design was used to allow the researcher to use any survey methods and units of analysis that were deemed appropriate to facilitate a clear understanding of the variables investigated (Creswell & Creswell, 2018). Cross-sectional designs emphasises on studying and drawing conclusions from existing differences

between people, subjects, or phenomena. In this study, the units of analysis were respondents who included head teachers, teachers and pupils. Cross-sectional design generally usesrelatively inexpensive survey techniques that take relatively little time to gather firsthand field data. The design can also permit collection of firsthand quantitative but also qualitative data where necessary using any appropriate methods (Saunders et al., 2015).

In this study, a cross-sectional design was applied to gather quantitative data in the main and some necessary qualitative data using interview schedule administered to head teachers and questionnaires administered to teachers and pupils with hearing impairment. The details of how this research design was applied are provided in the subsequent sections of this chapter.

3.2 Location of the Study

The study was done in five government aided primary schools in Masindi District, Masindi municipality. These schools included Masindi Army Day P/S, Masindi Model P/S, Kamurasi Demonstration P/S, Masindi Islamic P/S, and Masindi Public P/S. Each of these schools had children with hearing impairment. Therefore, in view of Uganda government efforts to provide its schools with instructional materials needed to facilitate all citizens who have access to the schools, each of the schools was expected to have instructional resources needed to teach these learners. Consequently, the schools were expected to have the study population for this research. In addition, most of these schools' pupils with learning impairment performed poorly (Masindi Municipality Education Report, 2020, 2021), which implied that they reflected the problem whose cause was investigated in this study.

3.3 Target Population

The target population comprised all the head teachers, teachers and pupils with hearing impairment and studying in inclusive government aided primary schools in Masindi Municipality. The size of this population was 196, including five (5) head teachers, 55 teachers and 136 pupils with hearing impairment (Masindi Municipality Education Report, 2020). Head teachers were included because, being school supervisors, they were in a position to provide data on all the variables of the study. They had data on how instructional resources needed to teach pupils with hearing impairment were planned for, provided and utilized in their schools. Head teachers were also in a position to assess the academic performance of these pupils. Teachers were included because they had information on the provided instructional resources, their utilization in the teaching of learners with hearing impairment well as on the academic performance of these pupils. The pupils with hearing impairment were themselves included in the target population to provide data on the instructional resources that were used to teach them and how they performed academically based on their examination or test results.

3.4 Sample Size

A sample is a smaller group of the target population from which needed data is collected (Bryman, 2015). Its size is the number of respondents it consists of, and for studies that use mixed methods, it should be statistically representative of the target population (Bryman, 2015). In this study, the statistically representative sample size was 132 determined using Sloven's formula as follows:

$$n = \frac{N}{1 + N(e^2)}$$

Where n is the required sample size; N the study population size which is 196 and *e* is the margin of error. The sample was selected at the 95% confidence level, implying that the *e*was 5%. Substituting these details in the formula:

$$n = 196 \div [1 + 196(0.05)^2] = 131.5 \approx 132.$$

This sample was proportionally divided as shown in Table 3.1

Table 3.1: Expected sample size distribution

Population	Target population	Expected sample	Actual sample	Sampling techniques
Head teachers	5	5	5	Purposive sampling
Teachers	55	37	35	Convenience sampling
Pupils	136	90	80	purposive sampling
Total	196	132	120	

It is important to note from Table 3.1 that the expected sample of 132 respondents was not realised because of time and logistical constraints. The actual sample was hence 120 respondents who included all the five (5) head teachers, 35 teachers and 80 pupils with hearing impairments.

3.5 Sampling Techniques

Sampling means choosing a given number of subjects to represent a defined population as sources of data (Bryman, 2015). Sampling technique refers to a specific method used to select the subjects (Creswell & Creswell, 2018). The technique can be a probability technique which involves giving every potential respondent a chance to be selected to participate in a study, or a non-probability sampling technique that involves selecting respondents while judging their appropriateness to provide the needed data (Creswell & Creswell, 2018). In the current study, non-probability sampling was used to select head teachers and pupils while probability sampling

was applied to select teachers. Specifically, purposive sampling was the non-probability sampling technique was used to select the head teachers as the key informants on all the variables of the study and only these pupils with hearing impairment and were in the upper primary section (from P4 to P7). These pupils were targeted because they were better suited to understand the instructional resources used to teach them. Both the head teachers and pupils were selected purposively because they were targeted to provide in-depth qualitative data (Creswell & Creswell, 2018).

The teachers who taught pupils with hearing impairment were selected using simple random sampling. This is because they were targeted to provide quantitative data about the management of instructional resources for these pupils. Moreover, the fact that all of them taught these pupils suggested that they each deserved an equal chance of participating in the study. Therefore, simple random sampling was used to give each of these teachers an equal of being selected to participate in the study (Amin, 2005).

3.6 Research Methods and Instruments

The following methods and instruments were used to collect data for this study:

3.6.1 Interview: The interview method was used to collect qualitative data from the selected head teachers. This method is highly flexible in that it permits the researcher to ask questions according to the respondent's understanding as well as the respondents to provide data unlimitedly (Creswell & Creswell, 2018). It therefore, facilitated collection of exhaustive data needed from head teachers to respond the research questions of the study. Each head teacher was interviewed at his or her respective office after fixing an appointment with him or her. An interview schedule was designed according to the study objectives and used to conduct both

written and face-to-face oral interviews in a systematic manner, depending on what each respondent preferred. A copy of the designed interview schedule appears in Appendix 4. The researcher recorded all the responses of the head teachers who provided the data using face-to-face oral interviews. The responses were recorded using the recording function of the researcher's Smartphone.

3.6.2 Survey Questionnaire: The following two types of questionnaires were used to collect data.

3.6.2.1 Self-administered structured questionnaire: This type of questionnaire was designed and used to collect consistent data from teachers. A self-administered questionnaire is designed to be explicitly filled by the respondents themselves without the intervention of the researcher (Leon, Lapkin, Fields & Moroney, 2022). It was designed for teachers because, by virtue of their occupation, they were literate enough to read and respond to the questions on their own. The questionnaire was designed according to the objectives of the study. Its first section consisted of items about the respondents' background information. The second section was made up of items that measured the academic performance of pupils with hearing impairment. The third, fourth and fifth sections consisted of items measuring, planning, provision and utilisation of instructional resources, respectively. A copy of the designed questionnaire is presented in Appendix 5.

3.6.2.2 Guided-response Questionnaire: A guided-response questionnaire was designed and used to collect data from the selected pupils. This type of structure questionnaire is designed in such a way that it contains pre-coded items answered by respondents with guidance from the researcher (Ferreira-Junior *et al.*, 2022). This questionnaire was used to collect data from the

pupils because, in the light of their hearing impairment, they needed guidance to respond to the items. The guidance was provided by the researcher by explaining the meaning of each questionnaire item and the alternative Likert type of responses from which a respondent had to choose. Thereafter, each pupil was given freedom to select a response that best suited his or her without influencing it (Creswell & Creswell, 2018). As shown in Appendix 6, this questionnaire consisted of items about the pupils' relevant background information and those seeking these respondents' assessment of the availability (provision) and utilisation of their instructional resources.

3.7 Measurement of Variables

The variables were measured using respondents' assessment of each, which they provided using appropriate Likert scales. To begin with, head teachers and teachers were requested to measure academic performance using a 5-point Likert scale of responses ranging from very poor through poor, average and good to excellent. Pupils were asked to measure it using a 5-point Likert scale of responses ranging from very unsatisfied through unsatisfied, moderately satisfied and satisfied to very satisfied. With both of these scales, head teachers and teachers who assessed this performance as good or excellent (or satisfied or very satisfied for pupils) indicated that the learners attained the expected level of literacy, numeracy and knowledge in science and social studies. Those who assessed it as average (moderately satisfied) indicated modest achievement while those who assessed it as poor or very poor (unsatisfied or very unsatisfied) indicated failure of these pupils to achieve expected level of literary, numeracy and knowledge in science and social studies.

Instructional Resources Management was measured in terms of planning, provision and utilization of these resources. Specifically, planning for instructional resources was measured using a 5-point Likert scale of responses ranging from strongly disagree through disagree, not sure and agree to strongly agree. With this scale, respondents who agreed and strongly agreed indicated that the planning for the instructional resources was well done. Those who disagreed and strongly disagreed indicated the opposite. The respondents who were not sure alluded to a mixed view about this planning.

The provision of the instructional resources was measured using a Likert scale that ranged from very inadequate through inadequate and adequate to very adequate. Respondents who indicated 'very inadequate' and 'inadequate' showed that these resources were provided insufficiently. Those who indicated 'adequate' and 'very adequate' were construed to have shown that the resources were sufficiently provided. The appropriateness of the provided resources was measured using a Likert scale ranging from very unsuitable through unsuitable and suitable to very suitable. Respondents who indicated 'very unsuitable' and 'unsuitable' showed that the provided resources were not appropriate to facilitate the learning of pupils with hearing impairment. Those who indicated 'suitable' and 'very suitable' showed that the resources were appropriate.

The utilization of the resources was measured using a Likert scale that ranged from very rarely through rare and often to very often. Respondents who indicated 'very rarely' and 'rarely' showed that the resources were not used to teach pupils with hearing impairment. Those who indicated 'often' and 'very often' showed that the resources were utilized.

3.8 Validity and Reliability of Instruments

3.8.1 Validity of Research Instruments: Golafshani (2003) explains validity in terms of accuracy, rigor and trustworthiness, while Gravetter and Forzano (2009) defines validity of a research instrument as how well the instrument is proficient of measuring what it is supposed to gauge. Content validity was used in this study to measure the degree to which data collected using a particular instrument represented an exact domain or content of a particular concept. The researcher first prepared the research instruments; got two expert judges like knowledgeable people to test the data collection tools and tested for content validity index which was above 0.5 (Creswell 2009). These expert judges were required to assess correctness of data collection tools by rating the accurate ones as relevant (R) and the inappropriate ones as irrelevant (IR). The experts' ratings were used to compute content validity index using the following formula:

$$\textit{Content Validity Index (CVI)} = \frac{\textit{All items in a research instrument rated as relevant (R)}}{\textit{Total number of the rated items (R + IR)}}$$

The computed CVIs are presented in Table 3.2 below:

Table 3.2: Computation of Content Validity Index for Research Instruments

Research Instrument	Assessment and number of items		Computation of Content Validity Index (CVI)	
	R	*IR*	*R + IR*	*CVI = R ÷ (R+IR)*
Head teachers interview schedule	36	5	41	.878
Teachers' questionnaire	30	4	34	.882
Pupils' focus group discussion guide	16	3	19	.842

The content validity indices (CVI) in Table 3.2 were all greater than 0.7 which, according to Amin (2005), should be the minimum value for acceptable validity. Therefore, most items in each research instrument were valid. Those that were irrelevant (IR) were eliminated from each instrument before administering it to the respondents from whom it was collected data.

3.8.2 Reliability of Instruments: According to Orodho (2005), this refers to the degree to which a particular measuring procedure gives same results over a number of repeated trials. In this study, the reliability of the research instruments was established using the Cronbach Alpha method of internal consistency aided by SPSS (Version 25). The researcher conducted a pilot study involving 10 teachers and 10 pupils selected from primary schools with pupils with hearing impairment but not located in Masindi District. The schools were selected from Kampala District, but not Masindi District to avoid replication effects during actual data collection. The responses that the selected teachers and pupils provided were entered in the SPSS program and the Cronbach Alphas computed. The computed Alphaswere as summarised in Table 3.3.

Table 3.3: Cronbach Alpha coefficients

Variable	Cronbach Alpha coefficient		
	Head teachers' instrument	Teachers' instrument	Pupils' instrument
Academic performance	.938	.967	.894
Planning for instructional resources	.933	.868	-
Provision of instructional resources	.748	.965	.708
Utilisation of instructional resources	.768	.875	.800
Overall reliability	.748	.856	.835

All the Cronbach Alpha coefficients in Table 3.3are greater than 0.7, suggesting that the items that were used to measure the variables were sufficiently reliable.

3.9 Data Collection Procedures

Data collection began with seeking necessary authorization and permission. An introductory letter was obtained from the Head of the Department of Education Planning and Management and used to seek permission of access to the relevant respondents from the authorities of the selected schools. After permission was granted, the researcher started by interviewing the head teachers using the designed interview schedule after briefing them about the purpose of the study and alerting them that their responses would be recorded using the researcher's mobile phone, if they choose to respond verbally. After interviewing each head teacher, the researcher proceeded to administer questionnaires to the selected teachers and pupils after explaining the purpose of the study to each of these respondent categories, and assuring them of the confidentiality of their responses. Care was taken not to interfere with the normal teaching schedules. Therefore, effort was made to administer the questionnaires during break and games time. Each participant was required to fill in the questionnaire and they were collected after completion.

3.10 Data Processing and Analysis

3.10.1 Qualitative analysis: All the data that the head teachers and teachers provided in response to the open-ended questions that were included in their respective research instruments were analysed using directed qualitative content analysis. This type of qualitative analysis involves the researcher familiarising with the data by sorting the transcribing, reading through it critically, deciphering meaning out of it and summarising the developed meaning using short quotes that bring it out clearly (Assarroudi *et al.*, 2018). The meaning is developed contextually to respond to research questions being answered in the study (Kibiswa, 2019).

In this study, directed qualitative directed qualitative content analysis, involved familiarising with the collected data by applying intellectual sifting that involved reading through and interpreting transcribed open-ended responses while sorting, editing, or summarising them in a manner that brought out their meaning within the context of the relevant research question. This process involved transcribing the open-ended responses, and editing them analytically to summarise or make them shorter by leaving out unnecessary text and retaining only that which reflected the conceptual value and theme needed to answer a research question (Zubin & Sutton, 2014). It is these short summaries that were quoted directly into the findings according the research questions, which they appropriately answered. Accordingly, the developed summaries were quoted to explain and illustrate:

a) The efforts head teachers made to plan for the instructional resources for pupils with hearing impairment in terms of identifying the professional teachers and their number, the teaching materials, and budgeting for them, whether the budgeted funds were mobilised as expected, and the conducted planning influenced these pupils' academic performance.
b) The provision of instructional materials, including professional teachers, textbooks, writing material, audio-visual aids, two dimensional visual aids [pictures, maps, posters] and three dimensional visual aids (objects) needed to facilitate teachers to teach pupils with hearing impairment in terms of their availability, suitability and adequacy, and how each influences these pupils' academic performance.
c) The utilisation of the available instructional resources by to teach pupils with hearing impairment and how teachers applied modeling in the teaching of these pupils, and how the utilization influenced these pupils' academic performance

3.10.2 Quantitative analysis: Quantitative analysis uses statistical methods to manipulate numerical data in a manner that produces results that not only describe the nature of the variables but also inferentially establish the relationship between the variables and how the independent affects the dependent variable based on the collected data (Berman, 2017). In this study, quantitative analysis was applied to analyse all the data collected in the form of responses to close-ended questions in the interview schedule and questionnaires. The analysis started after entering the data into the SPSS program (Version 25) using the numerical codes that were assigned to the Likert responses that the respondents used to assess the planning, provision and utilisation of instructional resources for pupils with hearing impairment and these pupils' academic performance.

The entered data was screened to identify and remove data entry errors. This data screening was carried out by running preliminary frequency distribution for each of the entered variables. After removing the data entry errors, the global variables (planning, provision and utilisation of instructional materials for pupils with hearing impairment) were computed using the arithmetic technique of the data transformation method of the SPSS. Each global variable was computed by adding the response-codes entered into the SPSS as respondents provided them. After computing the global variables, the explore technique of the descriptive statistics method of the SPSS was applied to detect and remove the outliers from the data.

After the removal of outliers, data analysis was conducted using the descriptive, Pearson bivariate correlation and linear regression analysis methods of analysis. The descriptive method was used to generate relative frequencies, means and standard deviations that were necessary to

describe the nature of the planning for, provision and utilisation of instructional resources for pupils with hearing impairment as well as these pupils' academic performance of as assessed by teachers and pupils using Likert scales. The bivariate Pearson correlation method was used to test the hypotheses of the study as stated in Section 1.6. The linear regression method of analysis was used to establish whether the relationships were predictive or not. Linear regression, therefore, helped establish how planning for, provision and utilisation of instructional resources for pupils with hearing impairment predicted or affected these pupils' academic performance. The findings obtained from the conducted data analysis are presented in the next chapter.

3.11 Ethical Consideration

In this study, ethical issues were taken into consideration at all stages of data collection. Before data collection started, the researcher obtained a letter of introduction from the Department of Educational Planning and Management, Kyambogo University. Permission was sought from relevant authorities of the schools where the study was conducted and parents of children with hearing impairment for their safety. The researcher informed the respondents about the purpose of the study so they could participate based on informed consent. Each respondent was given a consent form to sign as a confirmation of their consent to participate in the study (Appendix 3). Confidentiality was guaranteed to the participants by informing them that they did not need to show their names when providing the data, and this data would be treated confidentially used for purely academic purposes.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

The study investigated Instructional Resources Management and its relationship with the academic performance of learners with hearing impairment in inclusive government aided primary schools in Masindi Municipality. This chapter presents the results obtained from the analysis of the data collected to achieve this purpose and their interpretation. The chapter begins with a description of the response rate and the background characteristics of the respondents that were considered relevant in this study. Thereafter, the results are presented progressively beginning with those obtained from descriptive analysis through those from correlation to those from linear regression analysis. Descriptive results are organised according to the variables of the study as perceived by selected respondents. Correlation and inferential results are presented according to the hypotheses tested in the study.

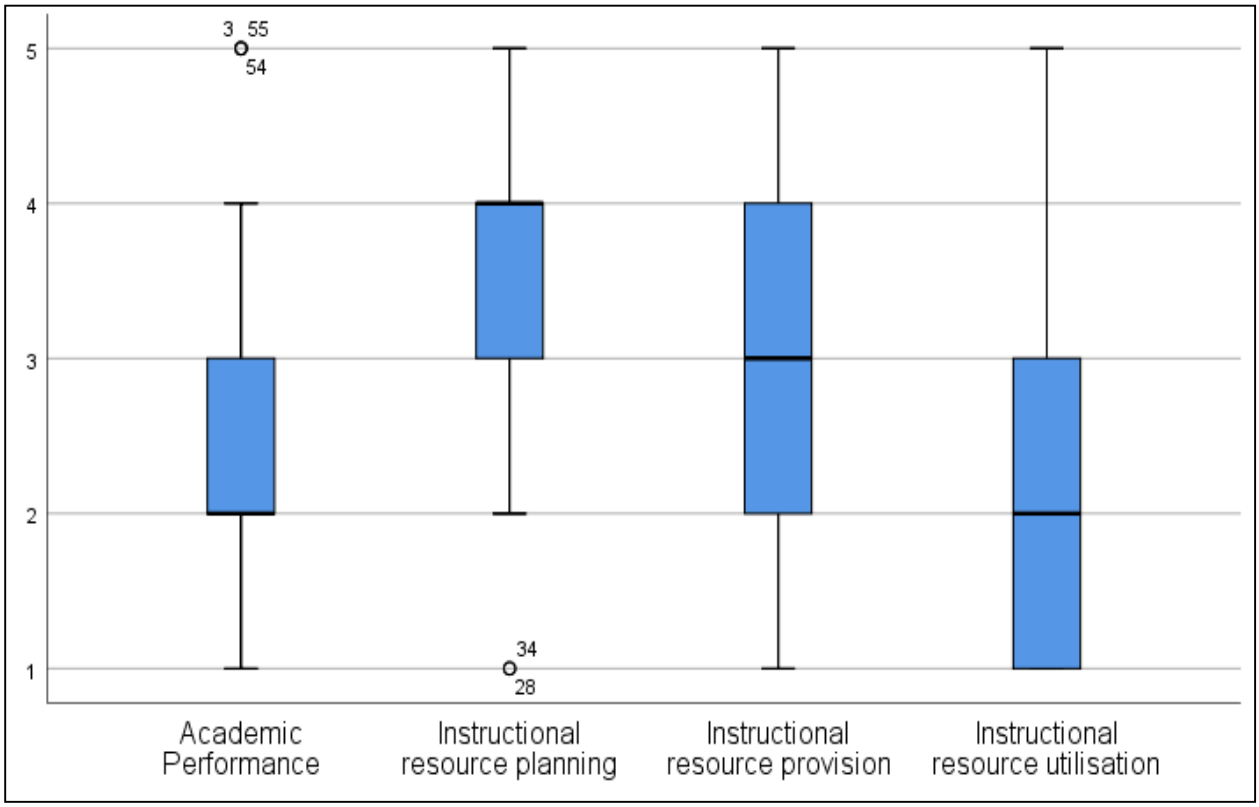
4.2 Response rate

The sample was expected to consist of 132 respondents, including five head teachers, 55 teachers and 90 pupils. However, those who participated were 110, which was equivalent to a response rate of 83.3%. This response rate implies that most of the expected respondents participated in the study. Therefore, the expected sample was largely realised. These included all the five head teachers (100%), all the 55 teachers (100%) and 50 pupils with hearing impairments (55.6%). The expected number of the pupils with hearing impairment was not realised because some of them were in lower primary classes. The study targeted only pupils from primary four to seven.

4.3 Detection of Outliers in Data Collected from Teachers

After entering the data collected from all the 55 teachers, effort was made to explore it with the aim of detecting whether it had outliers. Using the explore technique of the descriptive statistics method of the SPSS (Version 25), outliers in the global variables that were computed from the responses which all the teachers provided when they were asked to assess each variable were detected as shown in Figure 4.1 below.

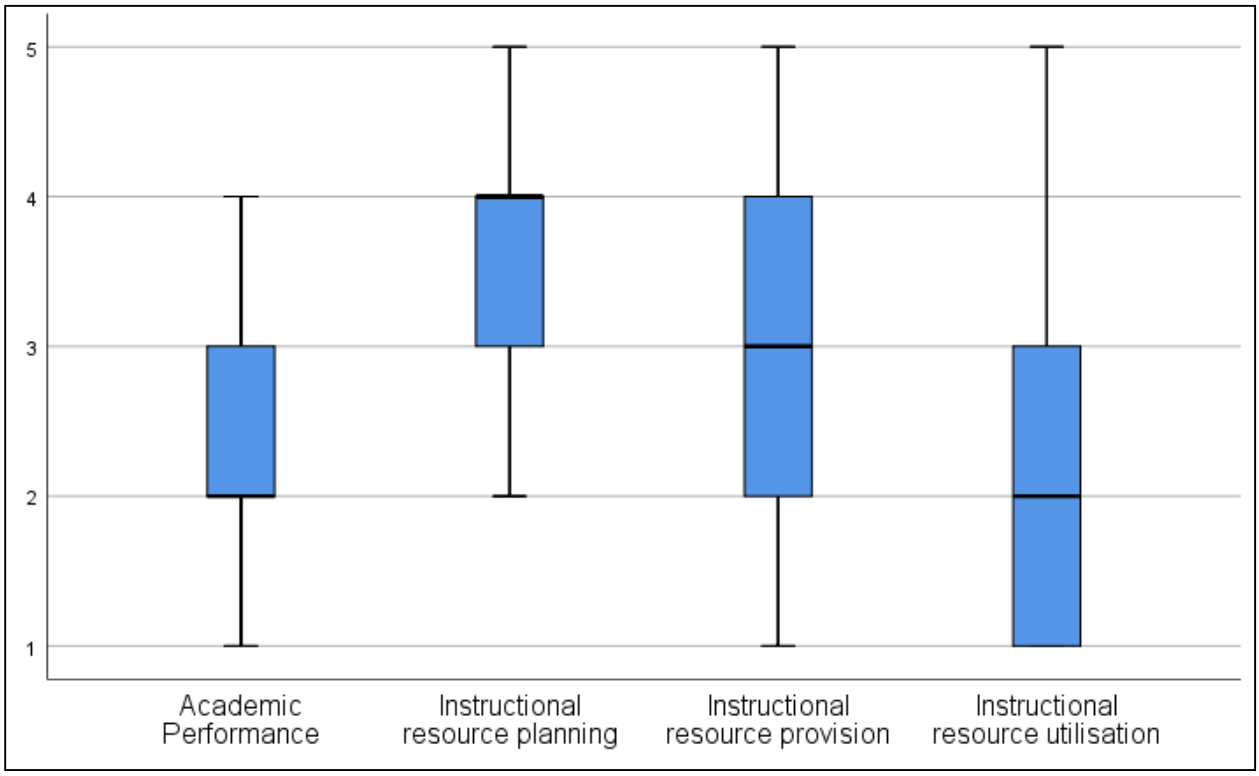
Figure 4.1: First Detection of Outliers



The small round circles in Figure 4.1 indicate that there were outliers in teachers' assessment of the investigated academic performance and instructional resource planning. Specifically, there were three teachers (or cases 3, 54 and 55) who were outliers in the assessment of academic

performance. Similarly, there were two teachers (or cases 28 and 34) who were outliers in the assessment of instructional resource planning. When these five cases were eliminated from the data set, there were no more outliers as shown in Figure 4.2.

Figure 4.2: Second Detection of Outliers in the Data



The elimination of the five cases from the data set effectively reduced the sample size from 55 to 50. Accordingly, subsequent analysis was based on 50 teachers.

4.4 Background characteristics

The characteristics of the sample that were considered relevant for this study included gender, professional qualification and level of professional training in Special Needs Education (SNE), period spent in service as a teacher or head teacher and in the current school, selected school's total enrolment, total number of teachers qualified in SNE number of learners with pupils with

hearing impairment, class taught, pupils' class and period spent in the school. The results obtained from descriptive analysis of the data provided on each of these characteristics are presented in the following subsections.

Enrolment, number of pupils with hearing impairment and their teachers were considered relevant in establishing whether the selected schools were suitable for the study, that is, whether they had pupils with hearing impairment and teachers who taught them. The findings are summarised in Table 4.1.

Table 4.1: Selected schools by enrolment, pupils with hearing impairment and teachers

	Enrolment			Pupils with hearing impairment			Teachers who teach pupils with hearing impairment
Schools	Boys	Girls	Total	Boys	Girls	Total	
A	136	122	258	7	8	15	9
B	766	734	1500	10	11	21	13
C	420	580	1000	12	7	19	12
D	770	730	1500	8	10	18	11
E	400	380	780	7	9	16	10

Table 4.1 indicates that the selected schools had pupils with hearing impairment whose number ranged from 15 to 21. The schools also had teachers who could teach these pupils, and the number of these teachers ranged from nine to thirteen. These findings reveal that the selected schools had the respondents who were needed to provide data and were therefore suitable for the study. It is imperative to note that the number of pupils with hearing impairment was considerably small compared to the total enrolment in each of the selected schools. This suggests that some of the teachers taught both the pupils with hearing impairment as well as the normal pupils. The results obtained from other background characteristics are presented in Table 4.2.

Table 4.2: Background Characteristics of the Respondents

Characteristics	Categories	Head teachers		Teachers		Pupils		Total	
		f	%	*f*	%	*f*	%		
Gender	Male	3	60.0	24	48.0	24	48.0	51	48.6
	Female	2	40.0	26	52.0	26	52.0	54	51.4
	Total	5	100.0	50	100.0	50	100.0	105	100.0
Professional Qualification	Grade III	0	0.0	10	20.0	n/a	n/a	10	18.2
	Diploma (Grade V)	1	20.0	35	70.0	n/a	n/a	36	65.6
	Graduate	1	20.0	4	8.0	n/a	n/a	5	9.0
	Postgraduate diploma	2	40.0	0	0.0	n/a	n/a	2	3.6
	Masters Degree	1	20.0	1	2.0	n/a	n/a	2	3.6
	Total	5	100.0	50	100.0	n/a	n/a	55	100.0
Professional training in Special Needs Education	None	5	100.0	35	70.0	n/a	n/a	35	70.0
	Certificate	0	0.0	12	24.0	n/a	n/a	17	24.0
	Diploma	0	0.0	3	6.0	n/a	n/a	3	6.0
	Total	0	0.0	50	100.0	n/a	n/a	55	100.0
Period spent in teaching service	Less than 1 year	0	0.0	2	4.0	n/a	n/a	2	3.6
	1-5 years	0	0.0	18	36.0	n/a	n/a	18	32.7
	6 or more years	5	100.0	30	60.0	n/a	n/a	35	63.7
	Total	5	100.0	50	100.0	n/a	n/a	55	100.0
Period spent in school	Less than 1 year	0	0.0	0	0.0	5	10.0	5	4.8
	1-5 years	0	0.0	6	12.0	10	20.0	16	15.2
	Over 5 years	5	100.0	44	88.0	35	70.0	84	80.0
	Total	5	100.0	50	100.0	50	100.0	105	100.0
Pupil class	Primary Four	n/a	n/a	n/a	n/a	11	22.0	11	22.0
	Primary Five	n/a	n/a	n/a	n/a	10	20.0	10	20.0
	Primary Six	n/a	n/a	n/a	n/a	10	20.0	10	20.0
	Primary Seven	n/a	n/a	n/a	n/a	19	38.0	19	38.0
	Total	n/a	n/a	n/a	n/a	50	100.0	50	100.0
Class taught	Primary One	n/a	n/a	6	12.0	n/a	n/a	6	12.0
	Primary Two	n/a	n/a	6	12.0	n/a	n/a	6	12.0
	Primary Three	n/a	n/a	6	12.0	n/a	n/a	6	12.0
	Primary Four	n/a	n/a	8	16.0	n/a	n/a	8	16.0
	Primary Five	n/a	n/a	8	16.0	n/a	n/a	8	16.0
	Primary Six	n/a	n/a	8	16.0	n/a	n/a	8	16.0
	Primary Seven	n/a	n/a	8	16.0	n/a	n/a	8	16.0
	Total	n/a	n/a	50	100.0	n/a	n/a	50	100.0

Abbreviations: *f-Frequency,* n/a-Not Applicable.

From Table 4.2, gender was considered relevant in this study because it is one of the key factors to which the management of Uganda's education in general and that of instructional resources in

particular needs to be sensitive in order to reduce the gender imbalance in access to education, especially for students with disabilities. Results in Table 4.2 indicate that apart from head teachers who were mostly male (60%), the sample was composed of more female (51.4%) than male (48.6%) respondents. Female respondents included 52% of teachers and 52% of pupils. These findings suggest although there was gender imbalance that favoured female compared to male respondents, it was caused more by teachers compared to pupils. Indeed, the imbalance between male and female pupils was not very big (48% compared to 52%) and can hence be ignored in this case. Consequently, the results suggest that the sample was almost balanced with respect to pupils with hearing impairment.

In addition, professional qualifications were considered to determine the extent to which the selected head teachers and teachers were qualified. The results in Table 4.2 indicate that most of the respondents (70%) were Diploma holders (Grade V), and these were mostly teachers (70%) with of the largest proportion of head teachers (40%) being postgraduates. These results suggest that most of the respondents were qualified enough to understand the concepts of the study and therefore, provide the data from a professional point of view.

Further, professional training in special needs education was used to establish whether the selected teachers were trained enough to teach pupils with hearing impairment. To this end, the teachers were asked to indicate their level of professional training in this education. The results in Table 4.2 indicate that most of the teachers (70%) who taught pupils with hearing impairment did not have professional training in Special Needs Education, implying that only 30% of them

had this training. These results suggest that most of the selected teachers were not professional enough to teach these pupils.

Furthermore, the period spent in service as a teacher or head teacher was considered to establish the teaching and school management experience of the selected teachers and head teachers, respectively, as a basis for determining whether they were knowledgeable enough to assess the variables of the study. This was done by asking these respondents to indicate the number of years they had spent as a teacher or head teacher. The results in Table 4.2 indicate that only 4.8% of the respondents had spent less than one year in service. This suggests that over 95% of the selected head teachers and teachers had spent over year in service. Of these, all the head teachers (100%) and 70% of the teachers had spent at least six years in their designations, respectively. These findings suggest that the period that the selected head teachers had spent managing instructional resources and that which the teachers had spent teaching pupils with hearing impairment was long enough for them to assess the variables of the study validly and reliably.

In addition, the period spent in school was considered to establish the appropriateness of the respondents to assess Instructional Resources Management in the selected school in a valid and reliable manner. The respondents were asked to indicate the number of years they had each spent in their respective schools. The results in Table 4.2 show that only 4.8% of the respondents had spent less than one year in their respective schools. This implies that over 95% of the respondents had spent over one year. Of these, the majority (80%) of whom 100% were head teachers, 88% were teachers and 70% were pupil had spent over five years. These findings

suggest that the length of time that most of the respondents had spent in their respective schools was enough to make them better acquainted to assess the variables of the study dependably.

Besides the foregoing attributes, the selected pupils were asked to indicate the class in which they studied. The results in Table 4.2 indicate that the pupils were selected from classes that ranged from primary four to primary seven. Therefore, the pupils who participated in the study were selected from primary to primary seven as expected.

Also considered relevant was the class taught in that it helped establish whether the selected teachers taught the pupils from whom the study collected data. The results in Table 4.2 indicate that selected teachers taught classes ranging from primary one to primary seven. These findings reveal that the selected teachers included those who taught primary four to seven. Therefore, they were suitable to provide the required data. The findings obtained from this data as well as that which was collected from head teachers and pupils are presented in the next sections following research questions and hypotheses.

4.5 Descriptive Results on the dependent and independent variables

This section presents and interprets the results obtained from descriptive and qualitative content analysis of how the selected respondents assessed academic performance of pupils with hearing impairment as the dependent variable as well as how they assessed the independent variables, which included instructional resource planning, provision and utilisation

4.5.1 Dependent variable: Academic performance of learners with hearing impairment

The performance of learners with hearing impairment was assessed using a number of items administered to the selected respondents. Close-ended items measuring this performance were administered to the teachers. The items administered to the head teachers and pupils were open-ended. Descriptive analysis of this performance which teachers provided using a Likert scale of responses that ranged from very poor (VP = 1) through poor (P = 2), average (A = 3) and good (G) to excellent (E), led to results presented in Table 4.3.

Table 4.3: Academic performance of pupils with hearing impairment as assessed by teachers

	Teachers per assessment													
	VP		P		A		G		E		Total			
Academic performance indicators	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	**Mean**	**Std.**
Numeracy	5	10.0	30	60.0	10	20.0	5	10.0	0	0.0	50	100	2.14	0.733
Literacy	10	20.0	30	60.0	5	10.0	5	10.0	0	0.0	50	100	2.17	0.774
Science	5	10.0	35	70.0	5	10.0	5	10.0	0	0.0	50	100	2.20	0.797
Social Studies	5	10.0	33	66.0	7	14.0	5	10.0	0	0.0	50	100	2.23	0.808
Overall assessment	**6**	**12.0**	**32**	**64.0**	**7**	**14.0**	**5**	**10.0**	**0**	**0.0**	**50**	**100**	**2.46**	**0.788**

Abbreviations: f-Frequency

The row corresponding to the overall assessment in Table 4.3 indicate that the teachers (76.0% = 12% + 64%) who assessed academic performance as both poor and very poor showed that pupils with hearing impairment failed to attain the expected level of literacy, numeracy and knowledge in science and social studies. The 14% of the teachers who assessed this performance as average indicated that these pupils' achievements were moderate. The 10% of the teachers who assessed this performance as good indicated that these pupils achieved the expected level of literacy,

numeracy and knowledge in science and social studies. However, none of the teachers assessed the performance as excellent, suggesting that none of the pupils with hearing impairment achieved the expected level of literary, numeracy and knowledge in science and social studies excellently.

Therefore, the findings indicate that the majority of the teachers showed that learners with hearing impairment performed below the expected level of literary, numeracy and knowledge in science and social studies. This view is consistent with the mean value (Mean = 2.46) corresponding to the overall assessment. When rounded off to the nearest whole number, this mean value was close to '2', the code for 'poor'. The corresponding standard deviations (Std. = 0.788) was less than one, suggesting low dispersion in the response pattern. This low dispersion reveals that the assessments of the pupils' academic performance which the teachers provided as individuals did not deviate much from their mean assessment as a whole sample. The same interpretation runs through all the individual indicators of this performance as assessed by teachers. Therefore, the results show that most of the pupils with hearing impairment failed to attain the expected level of literary, numeracy and knowledge in science and social studies.

Further analysis was conducted to establish whether teachers' assessment of the pupils' academic performance was normally distributed. This involved computing the average assessment and standard deviation for this assessment, and drawing a histogram for it. The results are displayed in Figure 4.3.

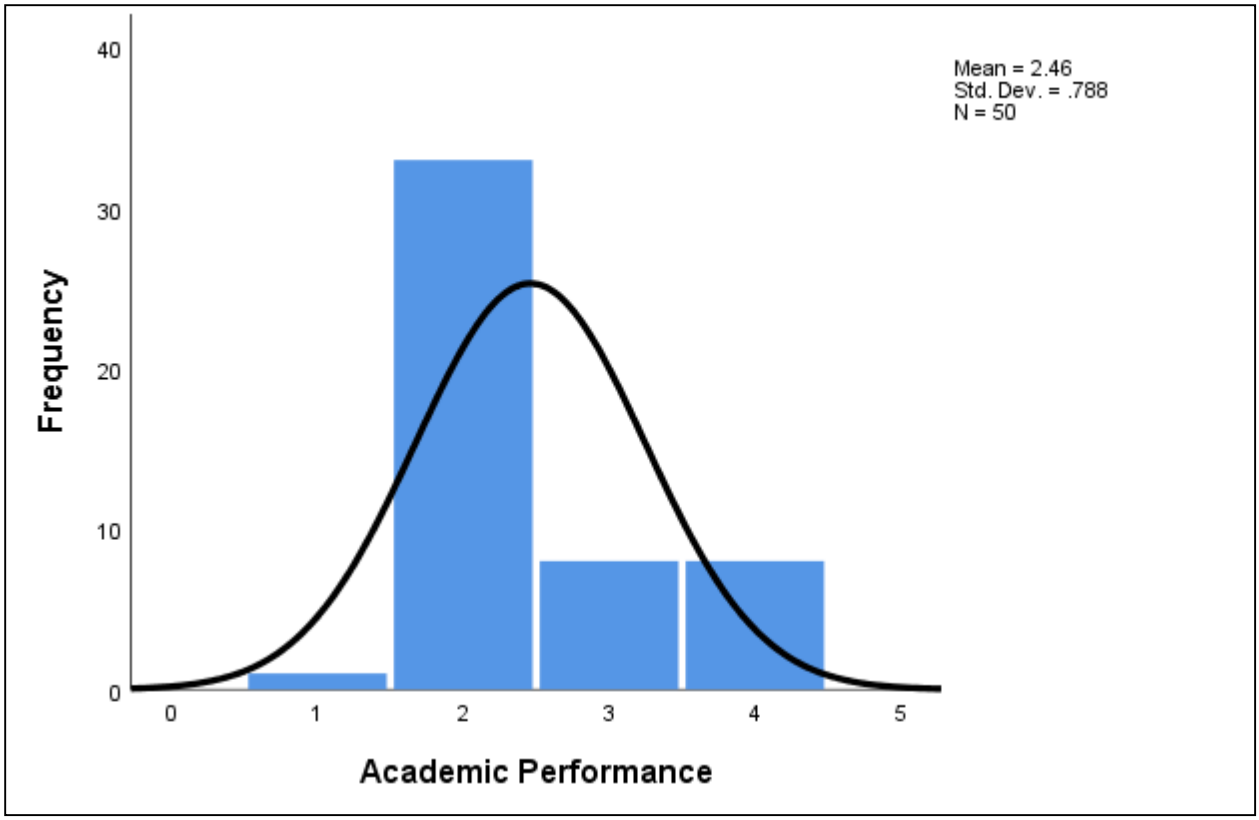


Figure 4.3: Histogram for academic performance as assessed by teachers

As can be seen from Figure 4.3, the curve was symmetrically normal around the mean of 2.46 with most of the cases under the curve. Therefore, as explained before, this mean value suggests that teachers' assessment of the academic performance of pupils with hearing impairment as poor was largely normally distributed. This assessment was corroborated by the interviewed head teachers. When these head teachers were asked to assess the academic performance attained from general examinations by the learners with hearing impairment in their respective schools in literary, numeracy and knowledge in science and social studies, one of these head teachers replied:

> "Well, these pupils' general performance is not the best although some of them are trying. We have about 15 of the pupils with hearing impairment, but only two of them are

good performers in literacy, numeracy and social studies. Their performance is generally poor in science, but those few I have mentioned can write and read. Both are in P.5. The majority perform poorly in all the subjects" (Interview with Head teacher A, 24 February 2022).

The preceding narrative suggests the performance of the pupils with learning impairment varied between poor and good, with the majority performing poorly. Consistent with this narrative, another head teacher explained that the pupils with hearing impairment who in his school were among the poor performers because most of them were slow learners. He recounted:

"Our learners with hearing impairment do not perform well in any of these areas. I mean numeracy, literacy, science and social studies. They are slower to learn in all subjects: mathematics, English, science and social studies compared to normal pupils, and end up performing poorer than most of the normal children. I believe they need more time to first learn sign language before teaching them other subjects. In being taught in the same school with normal children disadvantages them. I need to add though that not all of them perform poorly. One of them competes favourably with normal pupils and is sometimes better than many of them" (Interview held with Head teacher B, 24 February 2022).

Evidently, the above findings indicate that the performance of pupils with hearing impairment was generally poor. Another interviewed head teacher did not differ from those quoted above. She explained that:

"Most of the learners with hearing impairment whom we have in this school do not perform well in all the subjects. In fact, there is a pupil who used to perform so poorly

that we wondered what was wrong until his peers started complaining that he could respond only after shouting hard at him. That is how we identified that he had hearing problems and started teaching him together with those we already knew. There is now some improvement. He no longer scores zeros throughout. His average score has improved to 20%" (Interview held with Head teacher C, 25 February 2022).

Similarly, the poor performance of pupils with hearing impairment was further explained by another head teacher as follows:

> "All I can say is that it is not the performance you can be proud of. It is far below expectation. I think these pupils can be better when they are taught alone, but not together with normal pupils. In fact, if we did not follow a no-repetition policy in UPE schools, many of the pupils with hearing impairment whom we have in this school would be repeating many times. There is one pupil in P.5 now because of that policy, but this girl would honestly have been in P.1. Only a few of them try their best in writing and reading using their sign language. I think they perform poorly because of learning together with normal pupils. They need special attention which they hardly get in general schools like ours. We try our best to get them the teachers who can teach them...., but their performance does not improve" (Interview held with Head teacher D, 25 February 2022).

The results obtained from the pupils themselves did not differ. Most of the pupils who participated in the study, particularly in informal discussions with the researcher expressed similar views that alluded to a theme that they were not satisfied with the performance they attained from the end of term exams. One of these pupils stated that, "I like Mathematics very

much, it is my best subject, but I get very low marks every time we do exams, and this discourages me. I don't know why fail a subject I like most." Another pupil recounted that he liked both social studies and science subjects, but was never satisfied with the marks he scored from the two subjects: "I am dissatisfied with the marks I score from social studies and science yet I like these subjects so much." Another pupil explained that, "Even when I like English, I have never scored more than 30% from the end of term exams. I am worried that I cannot pass even my best subject with good marks." Only one pupil indicated contentment with the marks she got from English and Social Studies, her best subjects, but she added, "I wish I could get the same marks in other subjects to balance my scores". This implies that even the pupils who performed well in some of the subjects did not do the same in other subjects.

Overall, the findings from head teachers, teachers and pupils reveal that most of the learners with hearing impairment failed to achieve the expected level of literary, numeracy and knowledge in science and social studies. As to whether this kind of performance was related to the planning for the instructional resources for these learners was investigated after assessing this planning. The findings are presented in the next section.

4.5.2 First independent variable: Instructional resource planning

The selected head teachers and teachers were asked to assess how the planning for the instructional resources that were needed to facilitate the teaching and learning of pupils with hearing impairment was conducted in the selected schools. Specifically, the selected teachers were asked to use a Likert scale of responses ranging from strongly disagree (SD = 1) through disagree (D = 2), not sure (NS = 3) and agree (A = 4) to strongly agree (SA) to assess how this

planning was conducted in their schools. Descriptive analysis of their assessment generated results shown in Table 4.4. Note that pupils were left out because they were considered inappropriate to assess a process in which they did not participate.

Table 4.4: Planning for instructional resources as assessed by teachers

	Teachers per assessment													
	SD		D		NS		A		SA		Total		**Mean**	**Std.**
Planning indicators	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%		
As teachers, the head teacher asks us to submit the teaching materials we need to teach pupils with hearing impairment	0	0.0	5	10.0	8	16.0	30	60.0	7	14.0	50	100	3.50	0.682
The teaching materials we submit to facilitate the learning of pupils with hearing impairment are all included in the school budget.	0	0.0	3	6.0	7	14.0	15	30.0	25	50.0	50	100	4.71	0.858
Head teacher makes effort to include in the school's budget the number of professional teachers needed to get the desired ratio of teachers to pupils with hearing impairment	0	0.0	3	6.0	6	12.0	32	64.0	9	18.0	50	100	3.54	0.855
The head teacher includes all the funds needed to meet the remuneration of teachers who teach pupils with hearing impairment in the school budget.	0	0.0	2	4.0	7	14.0	30	60.0	11	22.0	50	100	3.51	0.657
Overall assessment	**0**	**0.0**	**3**	**6.0**	**7**	**14.0**	**27**	**54.0**	**13**	**26.0**	**50**	**100**	**3.54**	**0.808**

Abbreviations: *f-Frequency*

The analysis of the itemised frequency distribution in Table 4.4 indicates that most of the teachers (74% = 60% + 14%) agreed (Mean = 3.50, Std. = 0.682) that the head teachers asked

them to submit the teaching materials we need to teach pupils with hearing impairment. Likewise, the majority of the teachers (80% = 30% + 50%) strongly agreed (Mean = 4.71, Std. = 0.858) that the teaching materials they submitted to facilitate the learning of pupils with hearing impairment were all included in the school budget.

In addition, the majority of the teachers (82% = 64.0% + 18%) agreed (Mean = 3.54, Std. = 0.855) that their head teachers made effort to include in the school's budget the number of professional teachers that were needed to get the desired ratio of teachers to pupils with hearing impairment. Last but not least, almost the same proportion of teachers (82% = 60% + 22.0%) agreed (Mean = 3.51, Std. = 0.657) that the head teachers included all the funds needed to meet the remuneration of teachers who teach pupils with hearing impairment in the school budgets.

The frequency distribution corresponding to the overall assessment in Table 4.4 indicates that on average most of the teachers (80% = 54% + 26%) agreed (Mean = 3.54 was close to '4', the code for 'agree') without much deviation from their average response (Std. = 0.808) that the instructional resources for pupils with hearing impairment were planned for. This is well demonstrated by the histogram drawn to establish whether the assessment of how this planning was conducted was normally distributed or not. The histogram is depicted in Figure 4.4.

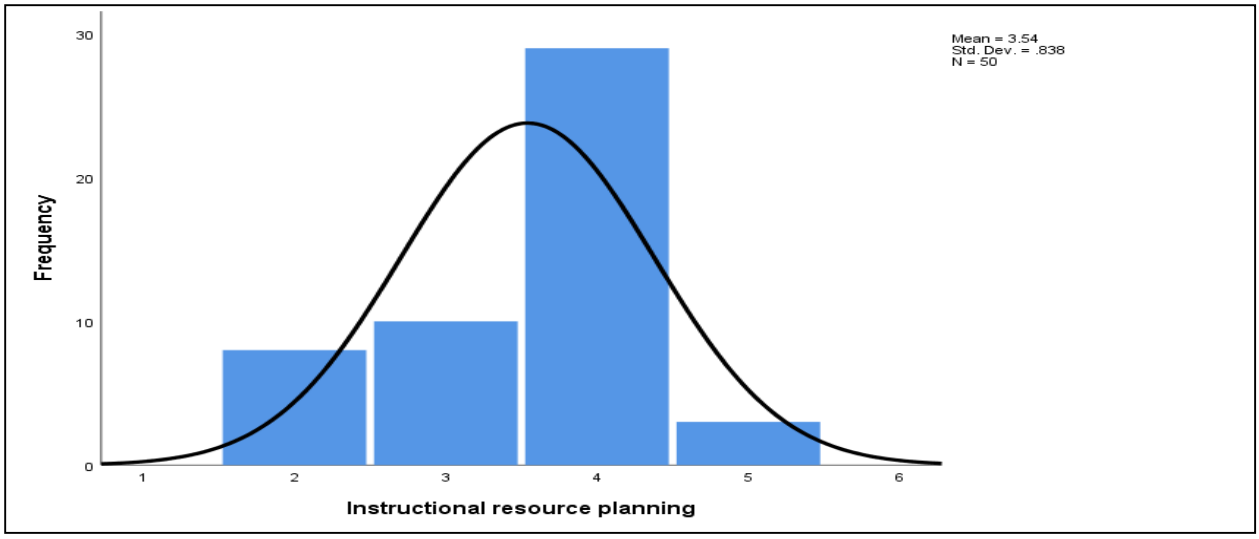


Figure 4.4: Histogram of instructional resource planning as assessed by teachers

The curve in the histogram in Figure 4.4 was symmetrically normal around the mean of 3.54 with most of the cases under the curve. Therefore, teachers' assessment that the planning for the instructional resources needed to facilitate the teaching and learning of pupils with hearing impairment was generally well done was normally distributed. These findings were substantiated by the interviewed head teachers when they were asked to explain how they planned for the instructional resources needed to facilitate the teaching of pupils with learning impairment, one of them had this to say:

> "During budget planning, we include all the instructional resources we need to run the school. Of course some of the included resources are those we need to teach learners with hearing impairment because we have, as I said, about 15 of them. So, we identify the number of teachers we need to teach these pupils and budget for them. We also identify and include in the budget, and all the visual aids and the audio recording and hearing devices these pupils need are included in the proposed budget. We include all these resources in the school teaching and budget plan before submitting it to the district education office" (Interview held with Head teacher A, 24 February 2022).

The foregoing excerpt reveals that planning involved budgeting not only for the teachers needed to teach pupils with hearing impairment but also for the visual aids and devices these pupils need to boost their hearing of what they are being taught. Another head teacher explained:

> "Our planning for the resources needed to run the school does not discriminate any pupil. It takes into account all the resources we need to teach all the pupils, including those with hearing impairment. Remember that some of the materials such as two- and three-dimensional objects, textbooks, teachers' guides and others that are used to facilitate the teaching of these pupils are the same as those used to teach even the normal children. The difference is in how content in the textbooks is presented to normal pupils and those with hearing impairment" (Interview held with Head teacher B, 24 February 2022).

The same head teacher continued:

> "I should add though that we also include the instructional items needed to teach specifically the pupils with hearing impairment as a specific budget line. These items include audio recorders, audio transcription devices, teacher voice amplifiers, hearing aids (earphones), video and captions. We even estimate the funds needed to purchase these instructional items. However, the government does not provide most of these items nor send the funds we can use to buy them. So, we encourage the pupils' parents to buy them for their children" (Interview held with Head teacher B, 24 February 2022).

The above excerpts suggest that instructional resources for teaching pupils with hearing impairment such as textbooks, two- and three-dimensional objects, audio recorders, audio transcription devices, teacher voice amplifiers, hearing aids (earphones), video and captions were

planned for by including them in the budgets the school submitted to the district education office. Essentially similar explanations were given by other interviewed head teachers as the following extract illustrates:

> "We make effort to include all the instructional resources needed to teach all the pupils. With specific reference to the pupils with hearing impairment, include the required teaching resources such as professional teachers who can teach these pupils, audio recorders, audio transcription devices, teacher voice amplifiers, hearing aids (earphones), to mention but a few. Our only challenge is to mobilise the funds required to acquire of these teaching resources, but as far planning or budgeting for is concerned, we really do our best" (Interview held with Head teacher D, 25 February 2022).

In general, therefore, the findings obtained from both the head teachers and teachers indicate that the planning for the instructional resources needed to facilitate learners with hearing impairment was well conducted.

4.5.3 Second independent variable: Instructional resource provision

The selected respondents were asked to assess the provision of the instructional resources that were required to facilitate the teaching of pupils with hearing impairment. Teachers were asked to use the Likert scale of responses ranging from very inadequate (VI = 1) through inadequate (I = 2) and adequate (A = 3) to very adequate (VA = 4) to indicate how sufficient the provided instructional resources were. Descriptive analysis of their assessment generated results summarised in Table 4.5.

Table 4.5: Provision of instructional resources as assessed by teachers

Provided instructional materials	Teachers per assessment										Mean	Std.
	VI		I		A		VA		Total			
	f	%	*f*	%	*f*	%	*f*	%	*f*	%		
Two-dimensional instructional materials facilitating teaching of pupils with hearing impairment	0	0.0	5	10.0	35	70.0	10	20.0	50	100	3.23	0.445
Three-dimensional instructional materials provided for pupils with hearing impairment	0	0.0	5	10.0	35	70.0	10	20.0	50	100	3.23	0.445
Teachers available teach pupils with hearing impairment	30	60.0	15	30.0	5	10.0	0	0.0	50	100	1.75	1.839
Textbooks provided for pupils with hearing impairment	35	70.0	10	20.0	5	10.0	0	0.0	50	100	1.34	1.619
Teachers guides provided for pupils with hearing impairment	41	82.0	4	8.0	5	10.0	0	0.0	50	100	1.33	1.642
Writing materials provided for pupils with hearing impairment	35	70.0	10	20.0	5	10.0	0	0.0	50	100	1.54	0.539
Overall assessment	**24**	**48.0**	**8**	**16.0**	**15**	**30.0**	**3**	**6.0**	**50**	**100**	**2.26**	**1.084**

The overall assessment in Table 4.5 indicates that most of the selected teachers (64% = 48% + 16%) assessed the provided instructional resources as either very inadequate or inadequate, which reveals that these resources were insufficiently provided in most of the selected schools. None the less, it is important to note that there were exceptions to the general view explained above. Specifically, most of the teachers (90% = 70% + 20%) showed that the two-dimensional instructional materials for learners with hearing impairment were adequately provided (Mean = 3.23 was close to '3' the code for 'adequate) and there was no much deviation from this average response (Std. = 0.445). The same proportion of teachers showed the same view with respect to the three-dimensional instructional materials. To establish whether teachers' assessment of this

provision was normally distributed, a histogram depicting a normal distribution curve was drawn as shown in Figure 4.5.

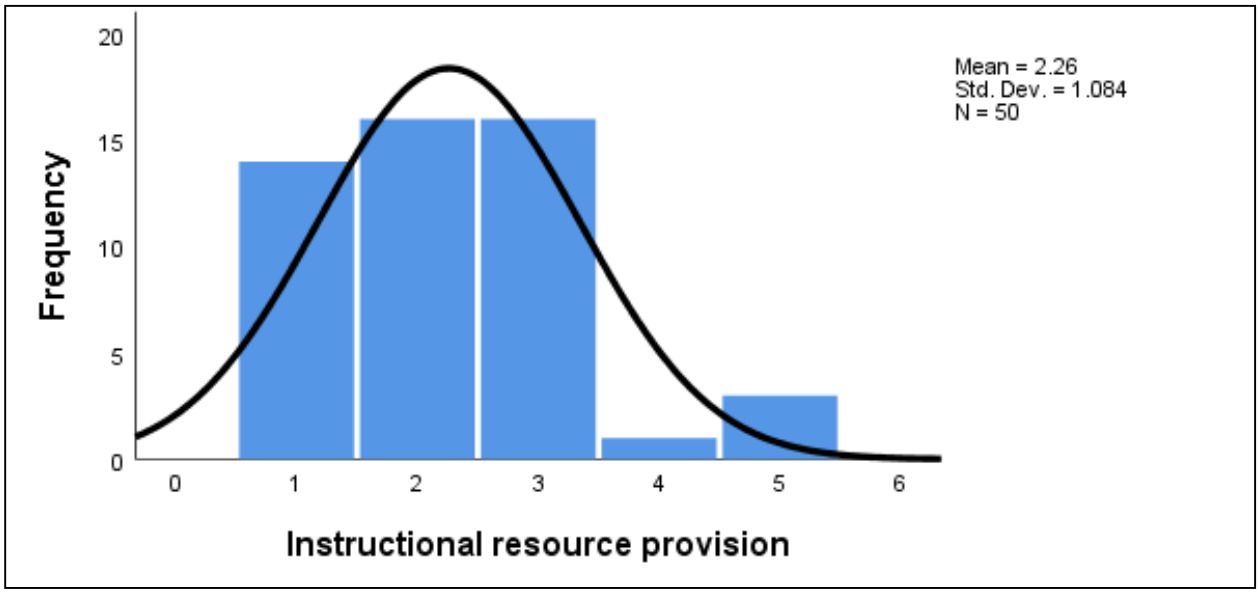


Figure 4.5: Histogram of instructional resource provision as assessed by teachers

The curve in the histogram in Figure 4.5 indicates that teachers' assessment of instructional resource provision was normally distributed around the mean value of 2.26. When rounded off to the nearest whole number, this mean value was close to '2', a code for 'inadequate'. Therefore, the results indicate that teachers indicated that the provision of instructional resources needed to facilitate the teaching of pupils with hearing impairment was inadequate on average. The corresponding standard deviation (Std. = 1.084) was slightly greater than one, suggesting a relatively high dispersion in the assessment of this provision. This dispersion suggests there were resources whose provision deviated much from the average assessment. As noted before, this relatively large deviation resulted from the fact that while some of the resources were inadequately provided, others were adequately provided. These results were corroborated by the

head teachers when they were asked to assess the teaching resources provided to facilitate the teaching of learners with hearing impairment. One of the head teachers had this to say:

> "We need professional sign language teachers, interpreters, educational audiologists and note takers, but do not have some these teachers. The government has not sent us enough of these teachers, even when we include the number we want in every annual school plan we send to the district. In general, out of the 15 teachers we need, we have only nine. So, we are short by six teachers" (Interview with Head teacher A, 24 February 2022)

The preceding excerpt indicates that the teachers that were provided to the school were not enough. In the same vein, another head teacher showed that the textbooks that were needed to facilitate the teaching of these pupils were insufficiently provided:

> "We expect government to provide us with enough textbooks such as MK Science textbooks, MK Mathematics textbooks, English textbooks, Social Studies textbooks that teachers need to teach these and other learners, but the number of the textbooks provided to us is never enough" (Interview with Head teacher B, 24 February 2022).

Another head teacher pointed out even the audio-visual materials that were needed to facilitate the teaching of these pupils were never provided by government as expected:

> "Well, the audio-visual devices that are critically needed to teach pupils with hearing impairment are never provided by government. Teachers need audio recorders, audio transcription devices and each pupil with hearing impairment needs a teacher voice amplifier, hearing aids like earphones, video and captions. But these none of these devices is provided by the government. We normally tell the parents of these pupils to provide them with these learning aids, but some of them are too poor to afford. Therefore,

we end not having enough of these resources. In addition, even the writing materials teachers need to teach these pupils such as Manila paper, posters, globe and hand-out notes are insufficiently provided" (Interview with Head teacher C, 25 February 2022).

While agreeing with the foregoing assessment, another head teacher explained that the provision of the two- and three-dimensional visual aids was adequate. This head teacher had this to say:

> "Some of the instructional resources we need to teach these pupils (with hearing impairment) are not provided, but those which do not require funds such as wall pictures, wall maps, charts, pictures, graphs, and the three-dimensional objects which such as plants, animals, birds, buildings, agricultural implements and others are freely accessible from the surroundings" (Interview with Head teacher D, 25 February 2022).

Generally, the findings suggest that the instructional resources that did not require money to be provided such as most of the two- and three-dimensional teaching aids were adequately provided, but those that required financial resources such as professional teachers, textbooks, and audio-visual devices were inadequately provided. After establishing how the provision of the instructional resources needed to facilitate the teaching and learning of pupils with hearing impairment, effort was made to establish how respondents assessed the utilisation of the provided resources or those that were available.

4.5.4 Third independent variable: Instructional resource utilisation

The respondents were asked to assess how the provided instructional resources or in place to facilitate the teaching of pupils with hearing impairment were utilised. The teachers were asked to assess this utilisation using a Likert scale of responses that ranged from very rarely (VR = 1)

through rare (R = 2), sometimes (S = 3) and often (O = 4) to very often (VO = 5). Descriptive of their assessment led to results presented in Table 4.6.

Table 4.6: Utilisation of instructional resources as assessed by teachers

	Teachers per assessment													
	VR		R		S		O		VO		Total			
Indicators of utilisation	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	**Mean**	**Std.**
How often do teachers model for pupils with hearing impairment	5	10.0	5	10.0	25	50.0	15	30.0	0	0.0	50	100	3.33	0.175
How often do teachers use the two dimensional instructional materials to teach pupils with hearing impairment.	0	0.0	0	0.0	25	50.0	15	30.0	10	20.0	50	100	3.33	0.175
How often do teachers use audiovisual materials to teach pupils with hearing impairment	5	10.0	30	70.0	5	10.0	5	10.0	5	10.0	50	100	2.77	0.471
How often do teachers use the three dimensional visual aids teach pupils with hearing impairment.	0	0.0	5	10.0	28	56.0	5	10.0	12	24.0	50	100	3.35	0.666
How often do teachers use textbooks to teach	5	10.0	5	10.0	25	50.0	15	30.0	0	0.0	50	100	3.36	1.272
How often do teachers use a teacher's guide when teaching pupils with hearing impairment	10	20.0	5	10.0	25	50.0	10	20.0	0	0.0	50	100	3.06	1.307
How often teachers encourage pupils with hearing impairment to use writing materials.	5	10.0	5	10.0	30	60.0	10	20.0	0	0.0	50	100	3.04	1.056
How often do teachers motivate pupils with hearing impairment to look forward to learning	5	10.0	5	10.0	28	56.0	12	24.0	0	0.0	50	100	2.65	0.977
Overall assessment	**4**	**8.0**	**8**	**16.0**	**24**	**48.0**	**11**	**22.0**	**3**	**6.0**	**50**	**100**	**2.66**	**1.189**

A critical look at the frequency distribution corresponding to the overall assessment in Table 4.6 reveals that the largest proportion of teachers (48%) indicated that the instructional resources were sometimes utilised to facilitate the teaching of pupils with hearing impairment. These results suggest that a largest proportion of teachers sometimes utilised the instructional materials and did not use them sometimes when teaching pupils with hearing impairment. A histogram drawn to establish whether teachers' assessment of this utilisation was normal was as shown in Figure 4.6.

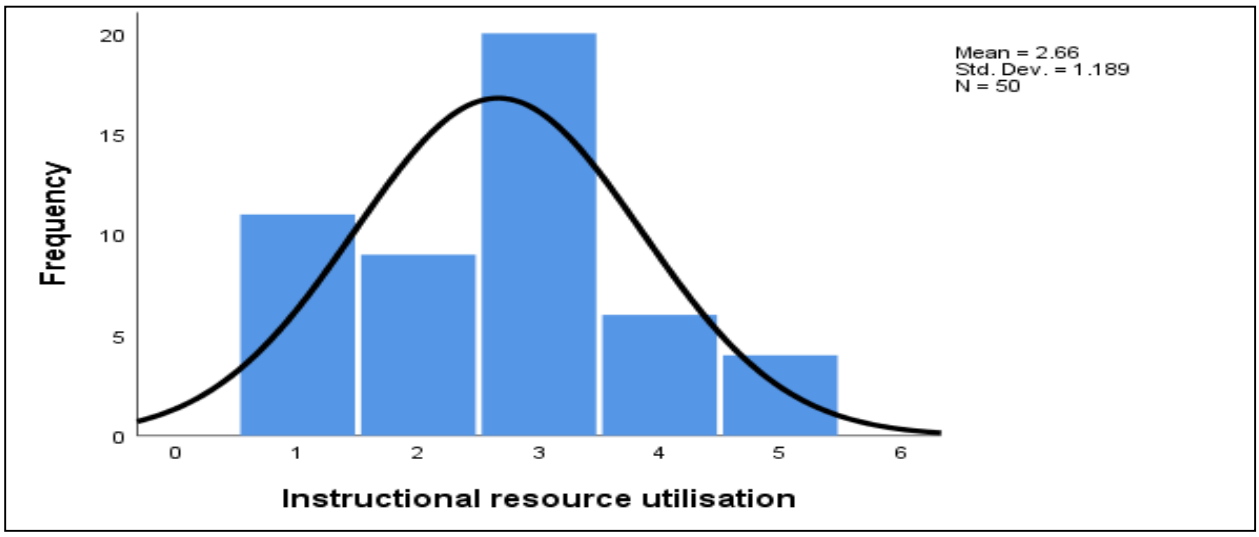


Figure 4.6: Histogram of instructional resource utilisation as assessed by teachers

The histogram in Figure 4.6 indicates that teachers' assessment of instructional resource utilisation was normally distributed around the mean value of 2.66. When rounded off to the nearest whole number, this mean value was close to '3', the code for 'sometimes'. This suggests that on average, teachers showed that they utilised the instructional resources to teach pupils with hearing impairment sometimes. The corresponding standard deviation (Std. = 1.189) was slightly greater than one, suggesting a relatively high dispersion in the sample. These results reveal the

assessment that some teachers provided as individuals that they used the resources sometimes deviated somehow from their average assessment as a sample, but the deviation was not large. These results were corroborated by the interviewed head teachers when they were asked to explain as teacher supervisors, how often the teachers used the instructional resources provided to teach pupils with hearing impairment. One of the head teachers had this to say:

> "The teachers use the instructional materials, mainly the two- and three-dimensional teaching and learning aids such as wall maps, wall pictures and the globe, plants, animals, insects and others. However, there are other instructional materials teachers rarely use because government has never provided them to these pupils. Many of the pupils lack the audio-visual aids such as earphones. So, teachers rely more on sign language than shouting loud in order to make those who are mildly or moderately impaired hear what they are teaching. All these pupils are treated as if they all have severe hearing impairment because of lack of these aids" (Interview with Head teacher C, 24 February 2022).

The narrative above reveals that the two- and three-dimensional instructional resources were utilised to teach pupils with hearing impairment, but audio-visual aids were rarely used because they were not provided by the government. Consistent with this view, another head teacher recounted:

> "Teachers utilise the instructional materials that are available in most cases, but they cannot use what is not provided to them. We do not get all the textbooks we need to teach these pupils. We do not get the Manila paper teachers need to draw visual illustrations used to facilitate these pupils' learning. Pupils with hearing impairment need extra teaching and learning aids such as earphones and audio-visual recorders, which we do not get because government does not provide them; and most of the pupils' parents are too poor to provide these learning aids. So, the use the available resources well and cannot use what is not provided…." (Interview with Head teacher D, 24 February 2022).

The preceding extract indicates that teachers used the provided teaching materials 'in most cases', which suggests that the materials were not used all the time the teachers taught. This was echoed by the selected pupils. In the informal discussions held with the selected pupils, they were asked to explain how often their teachers used the different instructional materials to teach them. The findings from qualitative content analysis of their responses revealed that some pupils indicated that the teachers used mostly the two- and three-dimensional materials to teach them, but the pupils could not tell whether the teachers used textbooks. A few of the pupils explained that some of the teachers motivated them to look forward to learning their lessons, but other teachers did not. Specifically, one of the pupils elaborately explained the use of the two-dimensional teaching and learning aids such as maps and pictures or drawn on school walls by stating that:

> "The learning aids the teachers use depend on what they are teaching. The teacher who teaches Science sometimes uses the skeleton, fish, insect and other science pictures drawn on the school walls to teach us their different parts. The SST teacher uses the maps of Uganda, East Africa, African and the World, which are drawn on the front walls of the school whenever he teaches us the different things we need learn from these maps" (Informal discussion held with pupils in School A, 24 February 2022).

In consistency, another pupil stated:

> "Our Science teacher tells us to go out and get pick leaves from the compound when we are learning about the leaves and their functions. He tells us to go out and see trees when we are learning about their different parts and how useful the trees are to us, human beings. We also go out and look at the sky when we are studying about the different clouds" (Informal discussion held with pupils in School A, 24 February 2022).

Clearly, the excerpt above shows that teachers also used the three dimensional objects to teach the pupils with hearing impairment. In contrast, another pupil summarised the non-use of audio-visual materials by stating rather succinctly that:

> "I have not seen any teacher using those materials. What are they? What do they look like? Our teachers use only sign language to teach us all the things they teach" (Informal discussion held with pupils in School A, 24 February 2022).

In general, findings suggest that teachers utilised the instructional materials that were provided or were in place to facilitate the learning of pupils with hearing impairment, but not on a regular basis. After establishing how the academic performance, planning for, provision and utilisation of instructional resources for pupils with hearing impairment were assessed, inferential analysis was conducted to test the hypothesis of the study.

4.6 Inferential results from hypotheses testing

The study was set to verify three hypotheses restated below:

H_1: There is a positive relationship between planning for instructional resources for learners with hearing impairment and their academic performance in inclusive government primary schools in Masindi Municipality.

H_2: There is a positive relationship between the provision of instructional resources and the academic performance of learners with hearing impairment in the inclusive government primary schools in Masindi Municipality.

H_3: There is a positive relationship between utilisation of instructional resources and academic performance of learners with hearing impairment in the inclusive government primary schools in Masindi Municipality.

The hypotheses above were restated in their null form as shown below to facilitate their testing:

H_{o1}: There is no positive relationship between planning for instructional resources for learners with hearing impairment and their academic performance in inclusive government primary schools in Masindi Municipality.

H_{o2}: There is no positive relationship between the provision of instructional resources and the academic performance of learners with hearing impairment in the inclusive government primary schools in Masindi Municipality.

H_{o3}: There is no positive relationship between utilisation of instructional resources and academic performance of learners with hearing impairment in the inclusive government primary schools in Masindi Municipality.

Consequently, the Pearson bivariate correlation method was applied to establish the relationships and the linear regression method was applied to establish whether the relationships were predictive or not. The findings from Pearson bivariate correlation are shown in Table 4.7.

Table 4.7: Correlation Statistics between instructional resource planning and academic performance

Variables	Statistics	Academic Performance	Instructional resource planning	Instructional resource provision	Instructional resource utilisation
Academic Performance	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	50			
Instructional resource planning	Pearson Correlation	.358*	1		
	Sig. (2-tailed)	.011			
	N	50	50		
Instructional resource provision	Pearson Correlation	.663**	.224	1	
	Sig. (2-tailed)	.000	.118		
	N	50	50	50	
Instructional resource utilisation	Pearson Correlation	.612**	.207	.515**	1
	Sig. (2-tailed)	.000	.149	.000	
	N	50	50	50	50

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

The results in Table 4.7 were statistically significant at the 0.01 or 0.05 level of significance. Therefore, all the tested null hypotheses ($H_{1o} – H_{o3}$) were rejected in favour of their alternatives. The rejection of the null hypotheses necessitated establishing whether the accepted relationships were predictive. This involved conducting linear regression analysis in which academic performance was the dependent variables and instructional resource planning, provision and utilisation were considered independent variables. The results from this analysis are summarised in Table 4.8.

Table 4.8: Linear Regression Statistics between instructional resource planning, provision, utilisation and academic performance

	Statistics predicted on the dependent variable: Academic performance						
	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Independent Variables	B	Std. Error	Beta	t	p-value	Tolerance	VIF
(Constant)	.477	.332		1.435	.158		
Instructional resource planning	.181	.089	.192	2.034	.048	.945	1.058
Instructional resource provision	.252	.096	.347	2.619	.012	.483	2.072
Instructional resource utilisation	.325	.101	.424	3.220	.002	.486	2.056

$R = 0.782$, $R^2 = 0.611$, Adjusted $R^2 = 0.586$, $F = 24.110$, p-value = .000

The results in Table 4.8 indicate how the different dimensions of instructional resource management predicted the academic performance of pupils with hearing impairment. Table 4.8 further indicates that the results were statistically significant at the 0.01 level of significance ($F(3, 50) = 24.110$, p-value = $0.000 < 0.01$). All the three independent variables (instructional resource planning, provision and utilization) predicted the academic performance of pupils with hearing impairment by a significant 58.6% (Adjusted $R^2 = 0.586$). The three variables caused this performance to vary by 61.1% ($R^2 = 0.611$). The results suggest that the variables accounted for a greater proportion of the academic performance that pupils with hearing impairment achieved. Only less than 38.9% of this performance was accounted for by other factors. Accordingly, the results in Table 4.7 and Table 4.8 respond to the research questions that this study was set to answer as follows:

4.7 Research Question One: The rejection of H_{o1} in favour of H_1 based on the correlation results in Table 4.7 implies that there was a positive relationship between planning for instructional resources for learners with hearing impairment and their academic performance in inclusive government primary schools in Masindi Municipality (r = 0.358, N = 50, Sig. = 0.011 < 0.05). The Beta coefficient, t-value and level of significance corresponding to planning in Table 4.8 reveal that this relationship was such that the way these resources were planned significantly predicted these pupils' academic performance by 19.2% (Beta = 0.192, t = 2.034, Sig. = 0.048 < 0.05).

4.8 Research Question Two: The fact that H_{o2} was rejected in favour of H_2 based on the correlation results in Table 4.7 suggests that there was a positive relationship between provision of instructional resources for learners with hearing impairment and their academic performance in inclusive government primary schools in Masindi Municipality (r = .663, N = 50, Sig. = 0.000 < 0.01). From Table 4.8, the Beta coefficient, t-value and level of significance corresponding to this provision indicate that this relationship was such that the provided resources significantly predicted the pupils' academic performance by 34.7% (Beta = 0.347, t = 2.619, Sig. = 0.012< 0.05).

4.9 Research Question Three: Rejecting H_{o3} in favour of H_3 based on the correlation results in Table 4.7 suggests that there was a positive relationship between utilisation of instructional resources for learners with hearing impairment and their academic performance in inclusive government primary schools in Masindi Municipality (r = ..615, N = 50, Sig. = 0.000 < 0.01). As

can be seen in Table 4.8, the Beta coefficient, t-value and level of significance corresponding to this utilization indicate that this relationship was such that the use of these resources significantly predicted the pupils' academic performance by 42.4% (Beta = 0.424, t = 3.220, Sig. = 0.002< 0.01). The implications of these results are discussed in the next chapter.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to examine Instructional Resources Management and its relationship with the academic performance of learners with hearing impairment in five inclusive government aided primary schools in Masindi Municipality. The findings obtained to meet this purpose were presented in the previous chapter. This chapter presents the discussion of these findingsas well as the conclusions and recommendations that can be derived from them. The chapter is organized according to the objectives of the study.

5.2 Discussion

This section presents a discussion of the implications of the findings. In the course of the discussion, effort is made to cross-reference the implications of the findings with the existing literature.

5.2.1Instructional resource planning and academic performance of learners with hearing impairment

The first objective of the study was to analyse the relationship between planning for instructional resources for learners with hearing impairment and their academic performance in inclusive government aided primary schools in Masindi Municipality. The findings obtained from the selected head teachers and teachers revealed that this relationship was significantly positive (Table 4.12) and predictive (Table 4.13 and Table 4.22). By revealing this relationship, the

findings confirm the resource management theory that identifies planning for resources as one of the dimensions that determines academic performance achieved in schools. The findings also concur with the studies of Males et al. (2016), Kanyonga *et al*. (2019) and Santos (2021) each of which established a significant and positive relationship between instructional resource planning and students' academic performance.

The fact that the established relationship was predictive implies that the manner in which instructional resource planning was conducted had a direct positive effect on the level of academic performance attained by the learners with hearing impairment in inclusive primary schools in Masindi Municipality. This effect implies that any improvement in this planning would enhance the academic performance of these learners. This is in line with Santos' (2021) observation that the more instructional resource planning improves the better students' academic performance becomes. The findings in Table 4.9 indicate that the planning for the instructional resources that were needed to facilitate learners with hearing impairment was generally well conducted in almost all the selected schools albeit with some exception, which explains why these pupils performed poorly.

Specifically, all the selected head teachers made efforts to identify the required professional teachers, determine their needed number, asked teachers to submit all the teaching materials required to facilitate the learning of pupils with hearing impairment, and included all these resources in the proposed school budgets (Table 4.10 and Table 4.11). The head teachers further estimated all the funds that were needed to acquire all the teaching resources and to allocate the funds properly. Unfortunately, the allocated funds were not mobilized to expectation. Therefore,

notwithstanding the fact that instructional resource planning was generally well conducted, the fact that the allocated resources were not mobilized as expected rendered the process not effective enough to achieve its purpose. This is why the pupils could not perform well.

Indeed, failure to mobilize the expected funds implies that in effect, the head teachers did not get all the money they needed to acquire all the instructional resources that they had planned to facilitate the learning of the pupils with hearing impairment. As Tikkanen *et al.* (2019) observed, the failure to mobilise expected funds created a lack of budgetary resources which constrained realisation of the budgetary outcomes, including these pupils' academic performance as expected. The findings therefore, point to a need for the head teachers to mobilise all the budgeted funds if the academic performance of learners with hearing impairment is to improve as desired. Since all the selected schools were government schools, these findings imply that the government needs to ensure that it fully funds the budgets submitted by head teachers for the instructional resources needed to facilitate pupils with hearing impairment.

5.2.2 Instructional resource provision and academic performance of learners with hearing impairment

The second objective of the study was to examine the relationship between the provision of instructional resources for learners with hearing impairment and their academic performance in inclusive government aided primary schools in Masindi Municipality. From the findings obtained from correlation and linear regression analysis of the selected head teachers, teachers and pupils' assessment of the provided instructional resources and pupils' academic performance, the relationship was positive, significant and predictive (Table 4.17, Table 4.18 and

Table 4.22). This relationship confirms the instructional resource management theory that asserts that provision of instructional resources determines pupils' academic performance in any school. The relationship is also consistent with that which was established in the studies of Akungu (2014) and Akpan and Okoli (2017), but it contradicts the kind of relationship established in the study of Busingye and Najjuma (2015), since the latter found that it was insignificant despite being positive.

The positive and predictive nature of the relationship established in this present study implies that the academic performance of the learners with hearing impairment depended on the extent to which the instructional resources that facilitated their learning were provided and made available to these pupils. The findings in Table 4.14, which were obtained from qualitative analysis revealed the instructional resources that the head teachers and teachers wanted to be provided included human resources (sign language teachers, interpreters, notes takers or peers, and educational audiologist). They also included textbooks for Science, Mathematics, English and Social Studies; writing materials like exercise books, manila paper, chalk, chalkboard, hand-out notes, and audio recorders, audio transcription devices, teacher voice amplifiers, hearing aids (earphones), video and captions. Other instructional resources included wall pictures, wall maps, posters, charts, pictures, graphs, and three-dimension materials or real objects such as globes, plants, animals, birds, buildings, bicycles, and agricultural implements. These resources confirm the social learning theory that identifies them as the live, symbolic and verbal models required to facilitate development of learning competences. They also confirm those identified by Colclasure et al. (2016) for teaching students with hearing impairment.

However, the respondents' assessment of the instructional resources they were actually available in the selected schools revealed that most of them were inadequate and some were even unsuitable. Findings in Table 4.15 and Table 4.16 indicate that in particular, only the two-dimensional and three-dimensional instructional materials were adequately available and suitable to facilitate the teaching of these learners. Not only were the other instructional resources not adequately available but also unsuitable for these learners. These results that most of the resources that learners with hearing impairment were insufficiently provided.

Analytically speaking and as Colclasure et al. (2016) observed, each of these instructional resources plays a critical role in the learning and performance of pupils with hearing impairment. Akpan and Okoli (2017) emphasised this view by noting that children taught in schools where instructional materials are adequately provided perform better than those who study in schools that lack these materials. As such, the findings point to a need for adequate provision of suitable instructional resources needed to teach pupils with hearing impairment. The findings in Table 4.15 and Table 4.16 indicate that the resources that need to be provided sufficiently include human resources (sign language teachers, interpreters, notes takers or peers, and educational audiologist), textbooks for Science, Mathematics, English and Social Studies; writing materials like exercise books, manila paper, chalk, chalkboard, hand-out notes, and audio recorders, audio transcription devices, teacher voice amplifiers, hearing aids (earphones), video and captions. Since the schools that were identified with the insufficiency of these resources were government schools, findings allude to a need for government to address it. These are the very live, symbolic and verbal models that Bandura's (2004) social learning theory identifies as the resources that should be facilitate pupils to develop learning competences visually.

5.2.3 Instructional resource utilisation and academic performance of learners with hearing impairment

The third objective of the study was to analyse the relationship between utilisation of instructional resources for learners with hearing impairment and their academic performance in inclusive government aided primary schools in Masindi Municipality. The findings obtained in response to this objective revealed that this relationship was significantly positive and predictive(Table 4.20, Table 4.21 and Table 4.22). These findings suggest that the academic performance that these learners attained was significantly affected by the manner in which their instructional resources were utilised to facilitate their learning. The findings therefore, confirm the instructional resource management theory that posits that academic performance achieve by pupils in a school is determined by how the available instructional resources are utilised. The findings also support the studies of Akungu (2014), Krukru (2015), Punzalan (2017), Nyaata (2018) and Boi-Dok et al. (2019). Each of these studies established that the way instructional resources are utilised in schools relates positively with the performance of learners. The performance of learners increases with the frequency at which the resources are used to teach them.

The findings in Table 4.19 indicate however, none of the available instructional resources was often and therefore frequently utilised. Most of the resources, including teachers' modelling for pupils with hearing impairment, encouragement and motivation of these learners, the two- and three-dimensional instructional materials, textbooks, and teacher's guides, were utilized sometimes, implying that their use was irregular. In the light of the established relationship and

the social learning theory, this infrequent use of these resources explains why the pupils performed poorly. Indeed, according to Bandura's (2004) social learning theory, when the live, symbolic and verbal models are not effectively utilised, little or no learning takes place. This is also in line with the study of Obosu et al. (2013) which showed that the infrequent use of instructional resources caused learners with hearing impairment to perform poorly. This situation worsened when it came to audiovisual materials as their use was rare in the teaching of pupils with hearing impairment (Table 4.19).

In the light of the observation made by Colclasure et al. (2016) that audiovisual instructional materials are the most critical to the learning of pupils with hearing impairment, it goes without saying that their rare use was a significant contributor to these learners' poor academic performance. The findings therefore allude to a need for the teachers to ensure regular utilization of all the instructional materials provided and therefore made available to them facilitate the learning of pupils with hearing impairment. This need is particularly important to meet owing to the findings in Table 4.22. These findings indicate that instructional resource utilization was the best predictor of these pupils' academic performance, suggesting that emphasizing the use of all the available teaching resources results into the most significant improvement in this performance.

5.3 Conclusions

The significant and positively predictive relationship established between instructional resource planning and academic performance of learners with hearing impairment indicates that improving this planning enhances this performance. The improvements are particularly needed in

the mobilization of the funds budgeted to facilitate acquisition of the needed instructional resources.

The significant and positively predictive relationship established between instructional resource provision and academic performance of learners with hearing impairment indicates that these learners perform better as the sufficiency and suitability of instructional resources provided to facilitate their learning improves. The performance becomes significantly better when the improvement ismade in the sufficiency and suitability of provided sign language teachers, interpreters, notes takers, educational audiologist, textbooks, writing materials, audio recorders, audio transcription devices, teacher voice amplifiers, hearing aids, video and captions.

The positively significant and predictive relationship established between instructional resource utilization and academic performance of learners with hearing impairment suggests that ensuring frequent and regular use of all the teaching resources made available to facilitate these pupils' learning improves their academic performance considerably. The improvement in this performance is optimized when emphasis is placed on ensuring regular use of visual and audiovisual teaching materials and devices to facilitate these pupils' learning

5.4 Recommendations

In respect of the conclusion reached in response to the first objective of the study, the government of Uganda, particularly the Ministry of Education and Sports should ensure that the Ministry of Finance, Planning and Economic Development releases to the primary schools in

Masindi Municipality all the funds that their head teachers budget to facilitate them to acquire the instructional resources they need to facilitate the learning of pupils with hearing impairment.

In accordance with the conclusion reached in response to the second objective of the study, the government of Uganda, particularly the Ministry of Education and Sports should provide the government primary schools in Masindi Municipality with adequate and suitable instructional resources needed to teach pupils with hearing impairment. The performance becomes significantly better when the improvement is made in the sufficiency and suitability of provided sign language teachers, interpreters, notes takers, educational audiologist, textbooks, writing materials, audio recorders, audio transcription devices, teacher voice amplifiers, hearing aids, video and captions.

Based on the conclusion reached in response to the third objective of the study, teachers who teach pupils with hearing impairment in inclusive primary schools in Masindi Municipality should ensure that they often utilize all the instructional resources made available to facilitate the learning of these pupils, while putting more emphasis on regular use of visual and audiovisual teaching materials and devices. The head teachers should supervise the teachers who teach these pupils to ensure regular and effective use of these materials and devices.

5.5 Areas for further research

The study has shown that instructional resource management predicts the academic performance of learners with hearing impairment by up to 72.4%, which is less than 100%. This suggests that

there are other factors that influence this performance. Further research is recommended into these factors.

The study was conducted in inclusive government aided primary schools in Masindi Municipality, and despite having relied on a statistically representative sample, covered a small area which may not be practically generalized to the whole of Masindi District, let alone Uganda as far as the established nature of the variables and their relationships were concerned. Therefore, a replica of the study based on a statistically representative district and national sample is recommended to establish the district and national picture of these variables, respectively.

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APPENDICES

Appendix 1: Introductory Letter from Kyambogo University

KYAMBOGO UNIVERSITY
P. O. BOX 1, KYAMBOGO – KAMPALA, UGANDA
TEL: +256-0414-285037/285001, www. Kyambogo.ac.ug
FACULTY OF EDUCATION
Department of Educational Planning and Management

Date: 17th March 2021

TO WHOM IT MAY CONCERN

Dear Sir/Madam

RE: ROSEMARY ASABÁ, REG NO18/U/GMED/19763/PD

This is to certify that **ROSEMARY ASABA, 18/U/GMED/19763/PD** is a student in our department pursuing a Master of Education in Policy Planning and Management. She is carrying out research as one of the requirements of the course. She requires data and any other information on this topic titled

"INSTRUCTIONAL RESOURCES MANAGEMENT AND ACADEMIC PERFORMANCE OF LEARNERS WITH HEARING IMPAIRMENT IN INCLUSIVE PRIMARY SCHOOLS: THE CASE OF GOVERNMENT PRIMARY SCHOOLS IN MASINDI DISTRICT."

Any assistance accorded to her is highly welcome. She is strictly under instructions to use the data and any other information gathered for research purposes only.

Thank you.

Dr. George Wilson Kasule
HEAD OF DEPARTMENT

Appendix 2: Letter of Transmittal

Asaba Rosemary

P. O. Box 94, Masindi

Dear Respondent

RE: REQUEST FOR DATA

I am a post graduate student pursuing a degree of Masters of Educational Policy Planning and Management at Kyambogo University. I am required to submit as part of my award, a research report on Instructional Resources Management and the academic performance of learners with hearing impairment in an inclusive setting in Masindi Municipality. To achieve this, you have been selected to participate in the study. I kindly request you to fill the attached questionnaire to generate data required for the study. This information will be used purely for academic purpose and will be treated in confidence. Your name will not be mentioned in the report.

Your assistance and cooperation will be highly appreciated.

Thank you in advance. Yours faithfully,

_____

Asaba Rosemary

Appendix 3: Participants' Consent Form

Good morning/afternoon, my name is Asaba Rosemary, a student of Educational Policy Planning and Management at Kyambogo University. I am carrying out a study on Instructional Resources Management and the academic performance of learners with hearing impairment in an inclusive setting in Masindi Municipality. You have been selected as a respondent in this study by virtue of being a person with relevant information about the study. The information obtained will purely be for the purpose of this research and will be treated with confidentiality and will be used for academic purposes only in fulfilment of my research project. Your participation is completely voluntary and your input will assist me to know the impact of Instructional Resources Management on the academic performance of learners with hearing impairment in an inclusive setting. There is no right or wrong answer in this study.

Do you have any concerns or questions about your participation in this exercise?

If yes, please tick in the brackets ( )

If no, kindly sign below as evidence of your informed consent.

Sign_____ Date _____

Thank you for your cooperation.

Appendix 4: Head teachers Interview schedule

Dear Sir / Madam,

This interview guide is designed to investigate the factors influencing academic performance of hearing-impaired learners in inclusive settings like schools in Masindi Municipality. Please, I request you to participate in this research by giving your opinion which will inform the education practitioners on the factors influencing academic performance of hearing-impaired learners in inclusive settings so that they can be dealt with to improve the academic performance of hearing-impaired learners.

Section A: Background Information

1. Professional Qualification……...…….……
2. Your professional training in Special Needs Education.....
3. Number of years spent as a head teacher…….....…….……
4. Number of years spent in the current school: …….....……
5. Gender: Male ( ) Female ( )
6. Total enrolment: …… Boys: …….. Girls: …….....…….
7. Total number of teachers qualified in Special Needs Education: Male...…Female: ……..
8. Total number of learners with pupils with hearing impairment……

Section B: Academic Performance

What is the general academic performance learners with hearing impairment in your school attain from general examinations in the following?

1. Numeracy
2. Literacy

2. Science
4. Social studies

Section C: Planning for instructional resources

1. As a school, do you make efforts to identify the professional teachers you need to facilitate the learning of pupils with hearing impairment?
2. As a school, do you make efforts to identify the teaching materials you need to facilitate the learning of pupils with hearing impairment?
3. The number of professional teachers needed to be hired to facilitate the learning of pupils with hearing impairment is budgeted for in the school's budget. True or False?
4. Do you include in the school's budget the teaching materials needed to facilitate the learning of pupils with hearing impairment?
5. Are the funds required that are needed to acquire the teaching resources needed to facilitate the learning of pupils with hearing impairment mobilised as expected?

Section D: Provision of instructional resources

D1. Would you please give the instructional materials that should be available in the school to facilitate teachers to teach pupils with hearing impairment?

D2. Please provide your assessment of the adequacy of the following resources for teaching pupils with hearing impairment in your school

1. Teachers
2. Textbooks
3. Writing material
4. Audio-visual aids

5. Two dimensional visual aids (pictures, maps, posters, etc)
6. Three dimensional visual aids (objects)

D3. Please provide your assessment of the suitability of the following resources for teaching pupils with hearing impairment in your school

1. Teachers:
2. Textbooks
3. Writing material
4. Audio-visual aids
5. Two dimensional visual aids (pictures, maps, posters, etc)
6. Three dimensional visual aids (objects)

Section E: Utilization of instructional resources

Would you please assess how often the following instructional resources are used to teach pupils with hearing impairment?

1. Teachers' modelling
2. Textbooks
3. Writing materials
4. Audio-visual aids
5. Two dimensional visual aids (pictures, maps, posters, etc):
6. Three dimensional visual aids (objects)

Thank You for Participating in the Study

Appendix 5: Teachers Questionnaire

Dear Sir / Madam,

This questionnaire is designed to investigate the poor academic performance of hearing impaired learners in inclusive settings like your class in Masindi Municipality. Please, I request you to participate in this research by giving your opinion which will inform the education practitioners on the factors influencing academic performance of hearing impaired learners, so that the factors should be dealt with to improve the academic performance of hearing impaired learners in inclusive setting.

Section A: Background information

1. Professional Qualification…….

2. Sex: Male..... Female.....

3. Class taught……

4. For how long have you been teaching? Less than 1 ( ) 1-5 years ( ) Six and above ( )

5. For how long have you been the current school? Less than 1 ( ) 1-5 years ( ) Six and above ( )

6. At which level is your professional training in Special Needs Education?

None ( ) Certificate ( ) Diploma ( ) Degree ( ) Postgraduate ()

Section B: Academic Performance

Please rate the general academic performance attained by learners with hearing impairment from the general examinations in the following:

1. Numeracy: Very Poor ( ) Poor ( ) Average ( ) Good ( ) Excellent ( )
2. Literacy Very Poor ( ) Poor ( ) Average ( ) Good ( ) Excellent ( )
3. Science Very Poor ( ) Poor ( ) Average ( ) Good ( ) Excellent ( )

4. Social studies: Very Poor ( ) Poor ( ) Average ( ) Good ( ) Excellent ( )

Section C: Planning for instructional resources

1. As teachers, the head teacher asks us to submit the teaching materials we need to teach pupils with hearing impairment.

   Strongly Disagree ( ) Disagree ( ) Not Sure ( ) Agree ( ) Strongly Agree ( )

2. The teaching materials we submit to facilitate the learning of pupils with hearing impairment are all included in the school budget.

   Strongly Disagree ( ) Disagree ( ) Not Sure ( ) Agree ( ) Strongly Agree ( )

3. The head teacher makes effort to include number of professional teachers needed to get the desired ratio of teachers to pupils with hearing impairment in the school's budget.

   Strongly Disagree ( ) Disagree ( ) Not Sure ( ) Agree ( ) Strongly Agree ( )

4. The head teacher includes all the funds needed to meet the remuneration of teachers who teach pupils with hearing impairment in the school budget.

   Strongly Disagree ( ) Disagree ( ) Not Sure ( ) Agree ( ) Strongly Agree ( )

Section C: Provision of instructional resources

1. Would you please outline the instructional materials that should be available in the school to facilitate you to teach pupils with hearing impairment?

……....

2. Rate the adequacy of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

3. Rate the suitability of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment

Very unsuitable ( ) Unsuitable ( ) Suitable ( ) Very Suitable ( )

4. Rate the adequacy of the three dimensional materials provided for pupils with hearing impairment

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

5. Rate the suitability of the three-dimensional materials provided for pupils with hearing impairment

Very unsuitable ( ) Unsuitable ( ) Suitable ( ) Very Suitable ( )

6. Rate the adequacy of the teachers available to teach pupils with hearing impairment

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

7. Rate the suitability of the teachers available to teach pupils with hearing impairment

Very unsuitable ( ) Unsuitable ( ) Suitable ( ) Very Suitable ( )

8. Rate the adequacy of the textbooks provided for pupils with hearing impairment

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

9. Rate the suitability of the textbooks provided for pupils with hearing impairment

Very unsuitable ( ) Unsuitable ( ) Suitable ( ) Very Suitable ( )

10. Rate the adequacy of the teachers guides provided for pupils with hearing impairment

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

11. Rate the suitability of the teachers guides provided for pupils with hearing impairment

Very unsuitable ( ) Unsuitable ( ) Suitable ( ) Very Suitable ( )

12. Rate the adequacy of the writing materials provided for pupils with hearing impairment

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

Section D: Utilisation of instructional resources

1. How often do you use the two dimensional instructional materials to teach pupils with hearing impairment

Very Rarely ( ) Rarely ( ) Sometimes ( ) Often ( ) Very Often ( )

2. How often do you use audiovisual materials do you use teach pupils with hearing impairment?

Very Rarely ( ) Rarely ( ) Sometimes ( ) Often ( ) Very Often ( )

3. How often do you use the three dimensional visual aids (objects) do you use to teach pupils with hearing impairment?

Very Rarely ( ) Rarely ( ) Sometimes ( ) Often ( ) Very Often ( )

4. How often do you use the textbooks do you use to teach pupils?

Very Rarely ( ) Rarely ( ) Sometimes ( ) Often ( ) Very Often ( )

5. How often do you use a teacher's guide when teaching pupils with hearing impairment?

Very Rarely ( ) Rarely ( ) Sometimes ( ) Often ( ) Very Often ( )

6. How often do you encourage pupils with hearing impairment to use the writing materials the school gives them, if any?

Very Rarely ( ) Rarely ( ) Sometimes ( ) Often ( ) Very Often ( )

7. How often do pupils with hearing impairment indicate that they are motivated to look forward to learning your lessons?

Very Rarely ( ) Rarely ( ) Sometimes ( ) Often ( ) Very Often ( )

Thank You for Participating in the Study

Appendix 6: Pupils' Guided-Response Questionnaire

Dear Pupils,

These questions are designed to investigate the poor academic performance of hearing-impaired learners in inclusive settings like your class in Masindi Municipality. Please, I request you to participate in this research by giving your opinion which will inform the education practitioners on the factors influencing academic performance of hearing-impaired learners, so that the factors should be dealt with to improve the academic performance of hearing-impaired learners in inclusive setting.

Section A: Background information

1. Sex: Male..... Female.....

2. In which class are you? .....…

3. For how long have you been in the school? Less than one year ( ) 1-5 years ( ) Six and above ( )

Section B: Academic Performance

Indicate how satisfied you are with your performance in the following:

1. Numeracy:

   Very unsatisfied ( ) Unsatisfied( ) Moderately satisfied ( ) Satisfied ( ) Very Satisfied( )

2. Literacy:

   Very unsatisfied ( ) Unsatisfied ( ) Moderately satisfied ( ) Satisfied ( ) Very Satisfied ( )

3. Science:

   Very unsatisfied ( ) Unsatisfied ( ) Moderately satisfied ( ) Satisfied ( ) Very Satisfied ( )

4. Social studies:

   Very unsatisfied( ) Unsatisfied( ) Moderately satisfied( ) Satisfied( ) Very Satisfied ( )

Section C: Provision of instructional resources

1. Rate the adequacy of the two-dimensional visual materials available in your school to facilitate your learning.

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

2. Rate the adequacy of audio-visual learning materials are available in your school.

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

3. Rate the adequacy of the three dimensional visual materials/aids (objects) are in your school

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

4. Rate the adequacy of the textbooks available in your school to facilitate your learning

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

5. Rate the adequacy of the writing materials your school provide you

Very Inadequate ( ) Inadequate ( ) Adequate ( ) Very Adequate ( )

Section D: Utilisation of instructional resources

1. How often do your teachers use two dimensional instructional materials to teach you?

Very Rarely ( ) Rarely ( ) Often ( ) Very Often ( )

2. How often do your teachers use audiovisual materials teach you?

Very Rarely ( ) Rarely ( ) Often ( ) Very Often ( )

3. How often do your teachers use three dimensional visual aids (objects) to teach you?

Very Rarely ( ) Rarely ( ) Often ( ) Very Often ( )

4. How often do your teachers use textbooks to teach pupils?

Very Rarely ( ) Rarely ( ) Often ( ) Very Often ( )

5. How often do your teachers make you feel motivated to look forward to learning their lessons?

Very Rarely ( ) Rarely ( ) Often ( ) Very Often ( )

Thank You for Participating in the Study

Appendix 7: Reliability Analysis

For Head teachers' Research Instrument

Case Processing Summary for Academic performance			
		N	%
Cases	Valid	5	100.0
	Excluded[a]	0	.0
	Total	5	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics (Academic performance)	
Cronbach's Alpha	N of Items
.938	4

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Numeracy	7.80	10.700	.697	.967
Literacy	7.60	9.800	.855	.918
Science	7.40	8.300	.958	.886
Social Studies	7.80	10.700	.974	.897

Reliability Statistics (Planning for instructional resources)	
Cronbach's Alpha	N of Items
.933	6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
As a school, we make efforts to identify the professional teachers we need to facilitate the learning of pupils with hearing impairment.	22.00	5.500	.515	.932
As a school, we make efforts to identify the teaching materials we need to facilitate the learning of pupils with hearing impairment.	21.80	4.700	.926	.904
The number of professional teachers needed to be hired to facilitate the learning of pupils with hearing impairment is budgeted for in the school's budget.	22.00	5.500	.515	.932
The teaching materials needed to facilitate the learning of pupils with hearing impairment are	21.80	4.700	.926	.904

included in the school's budget.				
The funds required needed to acquire of the teaching resources needed to facilitate the learning of pupils with hearing impairment are mobilised as expected.	21.80	4.700	.926	.904
The funds mobilised to acquire the teaching resources needed to facilitate the learning of pupils with hearing impairment are allocated for this very purpose	21.60	5.300	.634	.943

Reliability Statistics (Provision of instructional materials	
Cronbach's Alpha	N of Items
.748	12

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Rate the adequacy of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment	21.00	5.000	.632	.689
Rate the suitability of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment	21.20	5.700	.749	.682
Rate the adequacy of the materials provided for pupils with hearing impairment	21.00	7.500	.000	.756
Rate the suitability of the materials provided for pupils with hearing impairment	20.80	6.200	.494	.717
Rate the adequacy of the materials provided for pupils with hearing impairment	20.80	6.700	.259	.746
Rate the suitability of the materials provided for pupils with hearing impairment	21.00	7.500	.000	.756
Rate the adequacy of the textbooks provided for pupils with hearing impairment	20.80	6.700	.259	.746
Rate the suitability of the textbooks provided for pupils with hearing impairment	20.80	6.200	.494	.717
Rate the adequacy of the teachers guides provided for pupils with hearing impairment	20.80	7.700	-.161	.794
Rate the suitability of the teachers guides provided for pupils with hearing impairment	21.00	4.500	.833	.642
Rate the adequacy of the writing materials provided for pupils with hearing impairment	20.80	6.200	.494	.717

Reliability Statistics (Utilisation of instructional resources)	
Cronbach's Alpha	N of Items

.768	8

Reliability Statistics (Overall for head teachers' research instrument)	
Cronbach's Alpha	N of Items
.748	29

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Numeracy	76.80	37.200	.158	.758
Literacy	76.60	38.800	.042	.770
Science	76.40	39.800	-.049	.787
Social Studies	76.80	37.200	.247	.744
As a school, we make efforts to identify the professional teachers we need to facilitate the learning of pupils with hearing impairment.	75.00	41.500	-.174	.760
As a school, we make efforts to identify the teaching materials we need to facilitate the learning of pupils with hearing impairment.	74.80	36.200	.637	.722
The number of professional teachers needed to be hired to facilitate the learning of pupils with hearing impairment is budgeted for in the school's budget.	75.00	41.500	-.174	.760
The teaching materials needed to facilitate the learning of pupils with hearing impairment are included in the school's budget.	74.80	36.200	.637	.722
The funds required needed to acquire of the teaching resources needed to facilitate the learning of pupils with hearing impairment are mobilised as expected.	74.80	36.200	.637	.722
The funds mobilised to acquire the teaching resources needed to facilitate the learning of pupils with hearing impairment are allocated for this very purpose	74.60	37.300	.463	.731
Rate the adequacy of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment	77.20	40.700	-.055	.762
Rate the suitability of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment	77.40	39.800	.124	.748
Rate the adequacy of the materials provided for pupils with hearing impairment	77.20	40.700	.000	.749
Rate the suitability of the materials provided for pupils with hearing impairment	77.00	35.500	.938	.713
Rate the adequacy of the materials provided for	77.00	41.500	-.174	.760

pupils with hearing impairment				
Rate the suitability of the materials provided for pupils with hearing impairment	77.20	40.700	.000	.749
Rate the adequacy of the textbooks provided for pupils with hearing impairment	77.00	41.500	-.174	.760
Rate the suitability of the textbooks provided for pupils with hearing impairment	77.00	35.500	.938	.713
Rate the adequacy of the teachers guides provided for pupils with hearing impairment	77.00	41.500	-.174	.760
Rate the suitability of the teachers guides provided for pupils with hearing impairment	77.20	34.700	.660	.714
Rate the adequacy of the writing materials provided for pupils with hearing impairment	77.00	35.500	.938	.713
How often do teacher model for pupils with hearing impairment	77.00	41.500	-.174	.760
How often do you use the two dimensional instructional materials to teach pupils with hearing impairment	77.00	35.500	.938	.713
How often do you use audiovisual materials do you use teach pupils with hearing impairment?	76.80	36.200	.637	.722
How often do you use the three dimensional visual aids (objects) do you use to teach pupils with hearing impairment?	76.80	36.700	.558	.726
How often do you use the textbooks do you use to teach pupils?	77.00	35.500	.938	.713
How often do you use a teacher's guide when teaching pupils with hearing impairment?	76.40	40.300	.035	.751
How often do you encourage pupils with hearing impairment to use the writing materials the school gives them, if any?	76.20	35.200	.596	.719
How often do pupils with hearing impairment indicate that they are motivated to look forward to learning teachers/your lessons?	76.60	39.800	.087	.750

Reliability for Teachers' Research Instrument

Case Processing Summary			
		N	%
Cases	Valid	35	100.0
	Excluded[a]	0	.0
	Total	35	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics (Academic performance)	
Cronbach's Alpha	N of Items
.967	4

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Numeracy	6.60	5.129	.903	.960
Literacy	6.57	4.958	.947	.948
Science	6.54	4.726	.954	.945
Social Studies	6.51	4.904	.870	.971

Reliability Statistics (Planning for instructional resources)	
Cronbach's Alpha	N of Items
.868	4

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
As teachers, the head teacher asks us to submit the teaching materials we need to teach pupils with hearing impairment.	13.66	1.644	.417	.866
The teaching materials we submit to facilitate the learning of pupils with hearing impairment are all included in the school budget.	13.11	1.104	.070	.765
The head teacher makes effort to include number of professional teachers needed to get the desired ratio of teachers to pupils with hearing impairment in the school's budget.	13.37	.534	.432	.857
The head teacher includes all the funds needed to meet the remuneration of teachers who teach pupils with hearing impairment in the school budget.	13.34	.585	.559	.867

Reliability Statistics (Provision of instructional resources)	
Cronbach's Alpha	N of Items
.965	11

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Rate the adequacy of the two-dimensional instructional materials available to facilitate you to	23.23	64.770	.803	.963

teach pupils with hearing impairment				
Rate the suitability of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment	23.66	62.173	.883	.961
Rate the adequacy of the materials provided for pupils with hearing impairment	23.09	66.963	.981	.959
Rate the suitability of the materials provided for pupils with hearing impairment	23.09	66.022	.840	.962
Rate the adequacy of the materials provided for pupils with hearing impairment	23.37	65.770	.665	.969
Rate the suitability of the materials provided for pupils with hearing impairment	23.14	66.185	.954	.959
Rate the adequacy of the textbooks provided for pupils with hearing impairment	22.94	67.997	.889	.961
Rate the suitability of the textbooks provided for pupils with hearing impairment	23.17	65.852	.942	.959
Rate the adequacy of the teachers guides provided for pupils with hearing impairment	23.14	67.008	.744	.965
Rate the suitability of the teachers guides provided for pupils with hearing impairment	23.37	63.652	.792	.964
Rate the adequacy of the writing materials provided for pupils with hearing impairment	22.94	67.703	.915	.961

Reliability Statistics (Utilisation of instructional of resources)	
Cronbach's Alpha	N of Items
.875	7

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
How often do teacher model for pupils with hearing impairment	18.49	15.845	.755	.844
How often do you use the two dimensional instructional materials to teach pupils with hearing impairment	19.09	19.434	.780	.852
How often do you use audiovisual materials do you use teach pupils with hearing impairment?	18.74	21.138	.388	.885
How often do you use the three dimensional visual aids (objects) do you use to teach pupils with hearing impairment?	18.86	20.479	.452	.879
How often do you use the textbooks do you use to teach pupils?	18.14	16.067	.823	.832
How often do you use a teacher's guide when teaching pupils with hearing impairment?	18.26	16.255	.660	.861
How often do you encourage pupils with hearing	18.20	16.812	.845	.831

impairment to use the writing materials the school gives them, if any?				

Overall Reliability Statistics for Teachers' Questionnaire	
Cronbach's Alpha	N of Items
.856	27

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Numeracy	73.80	105.047	.411	.851
Literacy	73.77	105.240	.389	.852
Science	73.74	105.020	.374	.852
Social Studies	73.71	105.445	.342	.853
As teachers, the head teacher asks us to submit the teaching materials we need to teach pupils with hearing impairment.	71.77	110.946	.083	.857
The teaching materials we submit to facilitate the learning of pupils with hearing impairment are all included in the school budget.	71.23	112.299	-.077	.860
The head teacher makes effort to include number of professional teachers needed to get the desired ratio of teachers to pupils with hearing impairment in the school's budget.	71.49	109.198	.155	.857
The head teacher includes all the funds needed to meet the remuneration of teachers who teach pupils with hearing impairment in the school budget.	71.46	109.197	.191	.856
Rate the adequacy of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment	73.66	97.879	.618	.843
Rate the suitability of the two-dimensional instructional materials available to facilitate you to teach pupils with hearing impairment	74.09	96.375	.629	.842
Rate the adequacy of the materials provided for pupils with hearing impairment	73.51	100.257	.740	.842
Rate the suitability of the materials provided for pupils with hearing impairment	73.51	99.139	.645	.843
Rate the adequacy of the materials provided for pupils with hearing impairment	73.80	100.224	.448	.850
Rate the suitability of the materials provided for pupils with hearing impairment	73.57	99.782	.702	.842
Rate the adequacy of the textbooks provided for pupils with hearing impairment	73.37	100.770	.704	.843
Rate the suitability of the textbooks provided for pupils with hearing impairment	73.60	100.071	.655	.843

Rate the adequacy of the teachers guides provided for pupils with hearing impairment	73.57	99.252	.619	.844
Rate the suitability of the teachers guides provided for pupils with hearing impairment	73.80	96.576	.619	.843
Rate the adequacy of the writing materials provided for pupils with hearing impairment	73.37	100.358	.733	.842
How often do teacher model for pupils with hearing impairment	72.80	101.871	.373	.853
How often do you use the two dimensional instructional materials to teach pupils with hearing impairment	73.40	105.718	.451	.851
How often do you use audiovisual materials do you use teach pupils with hearing impairment?	73.06	110.820	.034	.860
How often do you use the three dimensional visual aids (objects) do you use to teach pupils with hearing impairment?	73.17	110.264	.063	.860
How often do you use the textbooks do you use to teach pupils?	72.46	107.255	.159	.860
How often do you use a teacher's guide when teaching pupils with hearing impairment?	72.57	104.546	.238	.859
How often do you encourage pupils with hearing impairment to use the writing materials the school gives them, if any?	72.51	106.375	.240	.856
How often do pupils with hearing impairment indicate that they are motivated to look forward to learning teachers/your lessons?	73.71	113.739	-.174	.864

Reliability for Pupils' Research Instrument

Case Processing Summary			
		N	%
Cases	Valid	80	100.0
	Excluded[a]	0	.0
	Total	80	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics for Academic performance	
Cronbach's Alpha	N of Items
.894	4

Reliability Statistics (Provision of instructional resources	
Cronbach's Alpha	N of Items
.708	5

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Rate the adequacy of the visual materials available in your school to facilitate your learning.	10.44	6.756	.663	.586
Rate the adequacy of audio-visual learning materials are available in your school.	10.39	6.392	.703	.562
Rate the adequacy of the materials three dimensional visual aids (objects) are in your school	10.43	6.349	.688	.565
Rate the adequacy of the textbooks available in your school to facilitate your learning	10.41	6.650	.653	.585
Rate the adequacy of the writing materials your school provide you	9.49	9.468	-.066	.894

Reliability Statistics (Utilisation)	
Cronbach's Alpha	N of Items
.800	5

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
How often do you use the two dimensional instructional materials to teach pupils with hearing impairment	8.40	1.180	.636	.750
How often do you use audiovisual materials do you use teach pupils with hearing impairment?	8.44	1.262	.754	.705
How often do you use the three dimensional visual aids (objects) do you use to teach pupils with hearing impairment?	8.46	1.366	.790	.708
How often do you use the textbooks do you use to teach pupils?	8.44	1.363	.543	.777
How often do pupils with hearing impairment indicate that they are motivated to look forward to learning teachers/your lessons?	8.46	1.796	.258	.839

Reliability Statistics (Overall pupil Questionnaire)	
Cronbach's Alpha	N of Items

.853	14

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Numeracy	30.59	33.537	.732	.828
Literacy	30.54	32.581	.785	.824
Science	30.58	32.374	.784	.824
Social Studies	30.56	32.882	.771	.825
Rate the adequacy of the visual materials available in your school to facilitate your learning.	30.59	33.537	.732	.828
Rate the adequacy of audio-visual learning materials are available in your school.	30.54	32.581	.785	.824
Rate the adequacy of the materials three dimensional visual aids (objects) are in your school	30.58	32.374	.784	.824
Rate the adequacy of the textbooks available in your school to facilitate your learning	30.56	32.882	.771	.825
Rate the adequacy of the writing materials your school provide you	29.64	39.981	.003	.888
How often do you use the two dimensional instructional materials to teach pupils with hearing impairment	30.79	40.423	.123	.859
How often do you use audiovisual materials do you use teach pupils with hearing impairment?	30.83	40.425	.166	.857
How often do you use the three dimensional visual aids (objects) do you use to teach pupils with hearing impairment?	30.85	40.559	.177	.856
How often do you use the textbooks do you use to teach pupils?	30.83	40.501	.135	.858
How often do pupils with hearing impairment indicate that they are motivated to look forward to learning teachers/your lessons?	30.74	40.778	.043	.863