Investigation of the Relationship between Continuous Professional Development of Teachers on the Implementation of Lower Secondary Curriculum in Gulu City, Uganda

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Declaration

I, Benjamin Okumu declare that this research report entitled; "Relationship between Continuous Professional Development of Teachers on the Implementation of Lower Secondary Curriculum in Gulu City, Uganda", is my original work, and it has never been submitted for any academic award in any University or other academic institutions.

.....

Signature

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Approval

This research report entitled; "Relationship between Continuous Professional Development of Teachers on the Implementation of Lower Secondary Curriculum in Gulu City, Uganda", produced under our guidance, has been submitted for examination with our approval.

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Dedication

I dedicate this work to my beloved wife, Mrs. Nighty Okumu and to all my children, who gave me the encouragement I deserve in life.

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List of Acronyms

CPD	Continuous Professional Development
LSC	Lower Secondary Curriculum
ICT	Information and Communication Technology
NCDC	National Curriculum Development Centre
SPSS	Statistical Package for the Social Sciences
MoES	Ministry of Education and Sports
SESMAT	Secondary Science and Mathematics Teachers
UNEB	Uganda National Examinations Board
CBC	Competence-Based Curriculum
UPE	Universal Primary Education
EAC	East African Community
SAQ	Self-Administered Questionnaire
CVI	Content Validity Index
TDT	Teacher Design Teams
EFL	English as a Foreign Language
ELT	English Language Teaching
CEO	City Education Officer
AOI	Activity of Integration
CAI	Continuous Assessment Instrument
WWW	World Wide Web

Abstract

This study focused on investigating the relationship between Continuous Professional Development (CPD) of teachers on the implementation of Lower Secondary Curriculum (LSC) in Gulu City. The study looked at three specific objectives such as; to examine the status of CPD of teachers in lower secondary in Gulu City, to determine the level of implementation of LSC in Gulu City and lastly to establish relationship between CPD of Teachers and implementation of the LSC in Gulu City. The study was conducted using mixed method characterized by both quantitative and qualitative research approaches to help manage the data better. The study employed a descriptive cross-sectional and correlational survey research design while using questionnaires and interview guides. Data were collected from 202 respondents comprising of 173 teachers, 28 head teachers and the inspector of schools. The data from questionnaires were analyzed using descriptive statistics and regression analysis methods. Data from interviews were analyzed using thematic analysis and the information was narratively presented. Statistical Package of Social Sciences (SPSS) software version 20 was used for analyzing the data. Findings revealed high status of CPD activities among teachers in Gulu City, high level of implementation of the LSC, and strong positive relationship between CPD and LSC in Gulu City. The study recommends that following; the government, development partners, communities should mobilize funding for effective implementation of LSC; respective school administrations should organize frequent capacity building and refresher courses on LSC implementation termly; and lastly the government through the MoES should develop a tracking system for monitoring effective implementation of LSC both at district and national level.

Chapter One: Introduction

Curriculum implementation has not been done well by teachers especially in the following areas; curriculum interpretation, preparation for teaching, assessment and reporting learners' achievement in African countries particularly in Uganda (Ahabwe, 2022). Curriculum implementation is marred with a number of challenges such as insufficient professional development opportunities and limited contents (Cooper, 2019). However, continuous professional development of teachers can be a key lever for increasing the focus on up-to-date quality of teaching and learning. It is important in enhancing teachers' skills and knowledge of translating curriculum contents into syllabuses, schemes of work and lesson plan, and then delivering it to the students (Melesse & Gulie, 2019). This chapter is comprised of introduction that clearly shows the background of the study, problem statement, purpose, objectives, research questions, scope of the study and significance.

1.1 Background to the Study

Background to the study is comprised of historical, theoretical, conceptual and contextual.

1.1.1 Historical background

The scope of curriculum emerged with two trends; the first one was promoted by an American Philosopher called John Dewey in 1902 with a vision centered on the student, on his learning experience. He argued that curriculum should be relevant to students' lives hence he saw learning by doing and development of practical life skills as significant to children's education. The second was raised by an American Educationist in 1918 (Bobbit, 1918) and reinforced by Charter, centered on the institutions and the need to establish the contents from which the teaching issues are derived, that is, in the formal definition of teaching (Durán González et al., 2019).

At the end of the Second World War, Ralph Tyler's (1949) position arose, centered on connecting the curriculum with plans and programs of study; Tyler's vision was able to overcome the discussions around the visions of Dewey and Bobbit, and prevailed during the next two decades, and became international in the late 1960s. He believed that the curriculum is only good if it has been developed bearing in mind the needs and interests of the learners (Durán González et al., 2019).

Curriculum implementation is a significant stage in the life cycle of curriculum design and development (Nevenglosky, et al., 2019). By 20th Century, institutions were the great laboratories to plan, design, implement and test the impact of innovations in Competency Based Curriculum implementation. They can contribute to the curriculum development and Learning Resources Development Centre in a great way (Nevenglosky et al., 2019). Also, Al-Samarraie, Shamsuddin, and Alzahrani (2020), asserted that curriculum implementation is the practical application of theory into practice in a way that the eventual outcome is evidenced through the learners' performances in and outside the classroom. Besides, when teachers deliver both the curriculum contents and instructional strategies in the way and manner they were designed to be delivered, curriculum implementation is said to have occurred (Rosiek, & Clandinin, 2019). However, the ability and effectiveness of the teacher to carry out curriculum implementation depends to a large extent on some variables like knowledge/experience; qualification, availability of resources and motivational issues among others (Spreen & Knapczyk, 2018).

Since early 2000s', the roles of teachers in the implementation of curriculum have changed (Karakuş, 2021). Besides, the teacher no longer transmits information but manages the learning process. Also, what is expected is to provide activity-based teaching where students focus on cause and effect, work collaboratively, communicate and share (Karakuş, 2021). Further, to

ensure all of these, teachers can sometimes make some changes in curriculum implementations (Nevenglosky, 2018). Moreover, Nevenglosky, (2018) opine that during implementation the teacher identifies possible problems, observes the political and social structure of school, evaluates adequacy and applicability of curriculum, uses pedagogical knowledge and creativity to develop him/her professionally. Also, the teacher determines how he can support learning and student development (Jan, 2017; McLachlan, Fleer& Edwards, 2018). Besides, a teacher is expected to do many things such as implementing curriculum, supporting student's development at a desired level, and solving all problems (Falloon, 2019). However, students will have a hard time if they are left alone (Chapman, 2019).

In many African countries, curriculum implementation is marred with a number of challenges such as insufficient professional development opportunities and limited content. After gaining independence in the middle of 20th Century, many African nations attempted to alter their educational systems to better represent their unique national identities and regional requirements (Cooper, 2019). Still, there were calls for reform to enhance teacher qualifications and pedagogical skills due to the persistence of insufficient training systems (Brownell, & Tanner, 2012). Several African countries like Ethiopia realized in the latter part of the 20th century that CPD was necessary in order to address a number of issues related to education, such as low labour force participation, low level of skills among the graduate, high unemployment among others (Bernadine, 2019).

In East Africa, various regional bodies, such as the East African Community (EAC) particularly in the sector of Education, Science and Technology have pushed forward educational reforms, including CPD for teachers (Wamisho, 2021). The focus has been on cooperative initiatives, sharing best practices, and harmonizing educational policies across borders. Countries such as

Kenya, Tanzania, and Uganda developed national frameworks that outline standards for teacher competencies and frameworks for CPD programs. This reflects a growing recognition that the quality of education is directly correlated to teacher quality. However, research on the efficacy of CPD frameworks in educational settings is lacking (Njenga, 2023). Examining programme delivery integrity, standard compliance, and educator issues are all part of this.

In Uganda since independence in 1962, the educational system has experienced numerous changes (Fraser, & Lockheed, 2021). The concept of CPD gained prominence in the 1990s as part of broader educational reforms. The government recognized that the quality of education hinges on the competence of teachers, leading to initiatives aimed at providing teachers with opportunities for development. Programs focused on in-service training, workshops, and collaborative learning among educators became usual (Lockard, 2019). A highly qualified and educated teaching personnel was required for the implementation of Universal Primary Education (UPE) in 1997 and other initiatives targeted at enhancing secondary education. Uganda's National Curriculum Development Centre (NCDC) has played a key role in developing and evaluating the curriculum (Lockard, 2019).

In 2020, a new competence-based curriculum was rolled out in lower secondary to equip learners with problem solving skills which can make them to be all rounded to fit the 21st century challenges (NCDC, 20220). Furthermore, the graduate profile of this new curriculum talks of hand on skills development that the learners possess in order to provide a workforce demanded by the society and contribute to providing goods and services that the society requires (Tumuheise, Ssempala, Rwends, & Nachuha, 2023). This emphasizes the need for continuous professional development (CPD) and calls on instructors to embrace creative teaching strategies. To assist teachers in adjusting to this new curriculum, the Uganda Ministry of Education and

Sports has launched a number of CPD programmes, seminars, and training sessions in partnership with NCDC and other stakeholders (Kibirige, 2023). Online resources, peer networks, and mentorship programmes are some of these initiatives. Despite the initiatives, challenges persist, including limited resources for CPD, inadequate training facilities, disparities in access to professional development based on geographical location, and the varying levels of teacher preparedness (Abakah, 2019).

In Gulu city, implementation and training of teachers has faced unique challenges, including limited infrastructure, shortage of teaching materials, fewer number of trained teachers and varying levels of teacher preparedness (Gusango, 2023). The Uganda National Teachers' Policy (2008) emphasized the need for CPD and support to enhance teaching quality in schools. However, there is a lack of comprehensive studies evaluating the impact of CPD initiatives on curriculum implementation in Gulu City particularly, following the adoption of the LSC (Lamaro & Okello, 2024).

1.1.2 Theoretical background.

This study was guided by curriculum theory developed by Ralph W. Tyler in 1949 that is premised in Tyler's work entitled "Basic Principles of Curriculum and Instruction." Tylers' curriculum theory, is a deductive theory that starts from the general to the specific. Tyler argued that this theory is linear and it involves certain categorization of phase right from the start to end.

Tyler also holds three types of resources that should be used to formulate the objective of learning instruction. These resources include: learners, contemporary life, as well as quality consideration of the study field. Therefore, these resources guide the planning of a curriculum as per the aims of a given education system.

The theory highlights the need for teachers to have a deep understanding of the curriculum they are teaching, as well as the ability to adapt and innovate in response to changing educational needs and goals (Tejedor, et al., 2021). Besides, Derakhshan, et al. (2020), opine that teachers should be encouraged to engage in CPD activities, such as attending workshops, pursuing advanced degrees, and participating in collaborative learning communities. Also, Chiu (2021) stated that teachers should have opportunities to provide input on the design of the curriculum, as well as the flexibility to make adjustments based on the needs and interests of their students.

The application of this theory definitely inspires teachers to be actively engaged in obtaining what the world is like and this will develop a connection between learner experience and learning outcomes (Harrington, & Thomas, 2023). Also, this curriculum theory helps teachers and educators understand the underlying purpose of education and the objectives of the curriculum (Pugach, et al., 2020). Besides, the theory provides insights into different pedagogical approaches, teaching methods, and instructional strategies (Sanusi, et al., 2022). This knowledge is essential for teachers to develop their teaching skills and adapt their practices to meet the needs of diverse learners.

Furthermore, this curriculum theory equips educators with the knowledge and critical thinking skills necessary to contribute to curriculum development and make informed decisions about curriculum implementation (Chiu, & Chai, 2020). Also, the theory emphasizes the need for flexibility and adaptability in curriculum implementation. This is particularly important in the context of lower secondary education, where students have diverse learning needs and abilities (Chiu, & Chai, 2020). Besides, teachers who are well-versed in curriculum theory can effectively tailor their teaching to accommodate these differences. The curriculum theory encourages

teachers to engage in reflective practice, critically evaluating their teaching methods and the impact on student learning (Colomer, et al., 2020).

Also, continuous professional development supported by this curriculum theory enables teachers to refine their practices, integrating new insights and best practices into their teaching (Colomer, et al., 2020). Tyler's curriculum theory is instrumental in linking the CPD of teachers with the implementation of the LSC as follows: CPD ensures that teachers are well-versed in the learning outcomes (objectives). Workshops, advanced degrees, and collaborative learning communities provide teachers with the knowledge and skills to understand and implement these learning outcomes effectively. CPD activities, such as attending workshops and participating in professional learning communities, help teachers stay updated with the latest educational trends and methodologies. This enables them to adapt the curriculum to meet the needs and interests of their learners, which is crucial for effective curriculum implementation.

In conclusion, Tyler's curriculum theory supports the CPD of teachers and the implementation of LSC by emphasizing the importance of ongoing learning, the need for teachers to have a deep understanding of the curriculum, and the active involvement of teachers in the curriculum development and implementation process. It provides a framework for understanding the purpose of education, guides pedagogical approaches, supports curriculum development and evaluation, promotes flexibility and adaptability, encourages reflective practice, and advocates for student-centered learning. These principles are integral to the ongoing growth and effectiveness of educators in their roles as curriculum implementers and facilitators of student learning.

1.1.3 Conceptual background.

Professional development refers to gaining new skills through continuing education and career training after entering the workforce (Gomez, et al., 2019). It can include taking classes or

workshops, attending professional or industry conferences, or earning a certificate to expand your knowledge in your chosen field (Zepeda, 2019).

Teachers' Professional Development is the activities that develop teachers' skills, knowledge, expertise and other characteristics (Sancar, et al,. n.d). It involves a continuous process of reflection, learning and action to further a teacher's knowledge and skills, leading to enhanced teaching practices that positively impact on students' learning (Compen, et al., 2019).

Teachers' CPD refers to maintaining and improving the knowledge, skills, values and competencies of staff. Besides, CPD of teachers is the process of tracking and documenting the skills, knowledge, and experience that, teachers gain both formally and informally as they work, beyond any initial training (Srinivasacharlu, 2019).

In this study, CPD is defined as a process of gaining new skills and improving the existing one through formal and informal training to keep the teacher updated with the current teaching methods that the 21st century educational needs and goals which includes creativity, innovation, ICT proficiency, problem solving and mathematical computation.

Curriculum refers to a written document or plan that gives sets of learning opportunities for students (Mehmood Bhuttah et al., 2019). The definition above is relevant to this study because it highlights key words like learning experiences, materials and methods, knowledge among others.

Curriculum implementation is defined by Chaudary (2015), as an application of ideas and innovations to teach knowledge, skills, concepts, and interpretations. Teachers are the main curriculum implementers, while at the same time students, parents, school administrators can be directly or indirectly involved in the implementation process.

In this study, curriculum implementation is the process of putting into practice activities that are expected to effect change that has been designed. It therefore occurs when it has been effectively and efficiently utilized. It addresses key changes on the teaching methods, assessment and reporting learners' achievement.

A competency-based curriculum is a curriculum that accentuates what learners are expected to do rather than mainly focusing on what they are expected to know (Kabombwe, & Mulenga, 2019). In principle, such a curriculum is learner-centred and adaptive to the changing needs of students, teachers, and society (Kabombwe, & Mulenga, 2019). Ahabwe (2022), argued that the LSC is a Competence Based Curriculum (CBC) that emphasizes active participation of learners in the learning process, rather than a passive teacher-centered approach that was predominant in the old curriculum.

The major components of LSC implementation includes; Preparation for teaching, participatory teaching method, ICT integration, Evaluations and Assessments (Innocent, 2022). Therefore, the researcher will consider the use of those elements of curriculum implementation especially in this current lower secondary school curriculum in Uganda and in Gulu City in particular.

1.1.4 Contextual background.

In Uganda, the school curriculum has been developed, reviewed and reformed over years. For example, in 2000 there was Instructional Materials Reform Programme, in 2008 came a curriculum review, and the recent curriculum review of 2020 for lower secondary schools. All these reforms and evolvement were geared towards developing appropriate quality content for the implementation process. The current LSC is a result of a review based on the Education Sector Strategic Plan by the Ministry of Education and Sports (MoE&S) through the NCDC. The

focus of this review was to produce a secondary school graduate who has competencies required in the 21st century and skills that reduce unemployment among school graduates.

The LSC's implementation is not completed well because its adoption was hasty marred by inadequate teacher preparation and lack of training resources, such as books. However, there were delays in distribution of senior three learners' text books to schools but were later released a year after implementation. Further, there exists selective training of teachers in curriculum implementation by schools and this could be due to lack of logistics / funds to facilitate the training.

In Northern Uganda, fresh teachers still demonstrate low competencies specifically in ICT and instruction integration methods and use of instructional materials in LSC while many (68.6%) of teachers possess limited teaching skills and abilities, limited knowledge and understanding of competencies related elements such as the use of appropriate teaching method, self-esteem, planning and communication skills, good sense of humor, emotional intelligence among others over the past years (Omara, et al., 2021). In addition, most of the teachers in Northern Uganda lack pedagogical and professional competence. Moreover, in implementing LSC, most of teachers in Northern Uganda lack skills in subject content mastery while teaching as they could not explain in depth concepts when questioned by the learners, lack preparation hence stick to dictation of notes, have poor classroom organization as they continue to teach in disorganized classrooms, and still, others cannot formulate their own assessment questions due to limited questioning and assessment and evalution skills in line with LSC (Ahabwe, 2022).

In Gulu City, the 2022 inspection report of the 3rd inspection in regard to implementation of LSC, indicated that out of the 10 schools that were observed, only 4 (40%) schools had most of their teachers who could ably make quality planning in terms of; Schemes of Work, Lesson Plans and

link those plans to lesson objectives following LSC guides. Majority (70% of the schools) had their teachers who could not integrate ICT in their teaching methods. 50% of the schools did not have syllabus books including LSC text books (learners' books and teachers' guides). 10% of the school had given at least a project though in few subjects and 80% of the schools observed were still giving tests and end of term exams yet these were banned in the LSC guide (Ochola, 2023 & Kidega, et al., 2024)

In Gulu City, there are 28 secondary schools; private and public schools (Gulu city Local Government Report, 2022). All of the 28 secondary schools have adopted the LSC as seen from the fact that teachers from these schools attended workshop trainings organized by MOE&S through the NCDC that took place in Layibi College and Sacred Heart Girls S.S in 2020, 2021, 2022 and recently in 2023. However, there has been scarcity of debates, discussions and reports (literature) to guide and support the teacher on curriculum implementation practices in Gulu City. Further, there is limited research on CPD and curriculum implementation of LSC in Gulu City in particular. Hence, it was against this background that this study examined the relationship between Teacher's CPD and LSC in Gulu City.

1.2 Statement of the Problem

The MoES through NCDC in Uganda rolled out a CBC for Lower Secondary schools (MoE&S, 2020). This curriculum is aimed at equipping the learners with the 21st Century skills for self-reliance and producing holistic persons for national development (NCDC 2020). To implement this curriculum, teachers underwent CPD (Melesse & Gulle 2019). Additionally, the government distributed instructional materials, carried out public sensitization, developed assessment frame work and did engagement of key stakeholders in Education (Kara Kusi, 2021).

Despite government efforts in conducting trainings at national, regional and district levels to schools through seminars and workshops, teachers still have challenges. The challenges are seen in curriculum interpretation, preparation, assessment and reporting learners' achievements (Ahabwe, 2022). Unfortunately, the extent to which the CPD of teachers has contributed to the implementation of the LSC in Gulu City was not known. If these challenges continue, the LSC graduate profile will lack the 21st Century skills needed for self-reliance which is key in competence-based approach. The researcher therefore investigated the influence of CPD of teachers and implementation of LSC in Gulu City.

1.3 Purpose of the Study

The purpose of the study was to investigate the influence of CPD of teachers on implementation of LSC in Gulu City.

1.4 Objectives of the Study

The specific objectives of the study were;

i) To examine the status of CPD of teachers in lower secondary in Gulu City
ii) To determine the level of implementation of LSC in Gulu City
iii) To establish relationship between CPD of Teachers and implementation of the LSC in Gulu City

1.5 Research Questions

This study addressed the following questions;

i) What is the status of CPD of Teachers in lower secondary schools in Gulu City?
ii) What is the level of implementation of the LSC in Gulu City?

iii) What is the relationship between CPD of teachers and implementation of the LSC in Gulu City?

1.6 Significance of the study

This study would subscribe to the wealth of knowledge in the study of curriculum implementation and its indicators. This knowledge shall be relevant to the entire teaching fraternity.

The study would help the government to come up with a policy to address effective implementation of the lower secondary curriculum and include it in the human resource policy.

This study would influence the practice of lower secondary school managers in enhancing specific elements of an individual teacher's competencies in curriculum implementation through implementing CPD of teachers and other appropriate interventions and tools.

The result of this study would awaken and build the teachers' conception of competencies in handling and implementing LSC. This would enable them to develop the right potential to exercise their duties and responsibilities to improve performance.

The study would help to provide additional literature for similar research in future.

The would provide an in-depth understanding of the relationship between CPD of teachers on the implementation of LSC in Gulu City.

1.7 Scope of the Study

Geographically, the study was conducted in all secondary schools in Gulu City. Gulu City is found in Northern Uganda, and is boarded by Gulu district to the North-East, Omoro to the South-East and Amuru to the West.

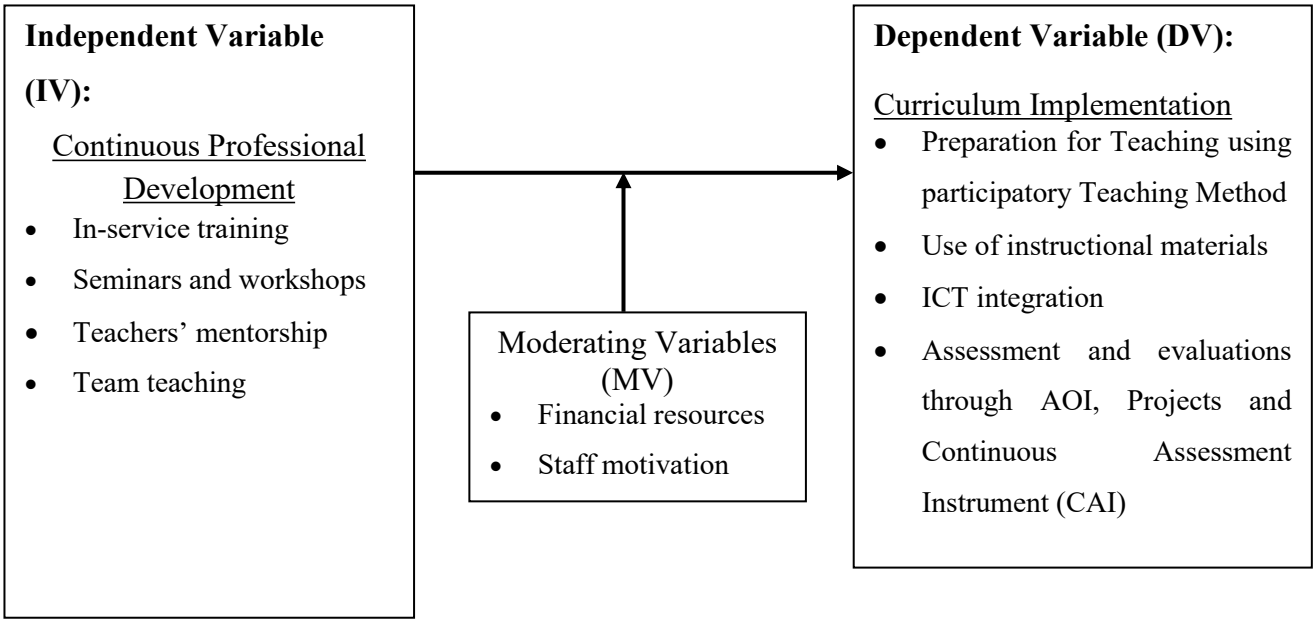
In its content, the study focused on finding out the relationship that exists between CPD of teachers and implementation of LSC in Gulu City. This was based on establishing the status of CPD of teachers and determining the level of implementation of LSC.

The study was limited to the period from 2020-2023. This was the time period in which LSC was rolled out in secondary schools by MoE&S and NCDC.

1.8 Conceptual Framework showing the relationship between CPD of teachers and Implementation of LSC

The Conceptual Framework of this study graphically describes the relationship between CPD of teachers and implementation of LSC including the moderating variables.

Figure 1: Conceptual Framework



Source: Adopted from Phelan, 2018;Ayemh Ayemhenre & Okolo, 2019; BrigBriggs, 2019; Okoye et al., n.d.,; and Innocent, 2022;Kampen, 2019;Malunda; 2017;MOE&S, 2018).

It is conceptualized that the independent variable is the Continuous Professional Development of teachers and the dependent variable is implementation of lower secondary curriculum.

CPD of teachers was considered with the dimensions of in-service training, seminars and workshops, Teachers' mentorship, team teaching adopted by (Phelan, 2018; Ayemhenre & Okolo, 2019; Briggs, 2019; Okoye et al., n.d.,) while Curriculum implementation was considered with the indicators of preparation for teaching using teaching method, participatory teaching method, use of instructional material, ICT integration, assessment and evaluation through Activity of Integration (AOI), projects and Continuous Assessment Instrument (CAI) for psychomotor and affective domain adopted from (Muhwezi, Kurgat, & Ssekamatte, 2022; Kampen, 2019; Malunda; 2017; and MOE&S, 2018) as evidenced in the theory which emphasized teachers to have deeper understanding of the curriculum they are to teach by attending seminars, workshops, team teaching and teachers' mentorship. Also, in curriculum can be effectively implemented if teachers are able to apply the knowledge from the theory into practice by effectively carrying out preparation for teaching, integration of ICT in teaching and learning appropriately select teaching learning resources and teaching methods and eventually carry out assessment and evaluation.

The core hypothesis was that effective CPD practices positively impacts curriculum implementation. When teachers engage in CPD practices like seminars and workshop makes them to aquire skills for preparation for teaching like drawing scheme of work, lesson plan, selecting right instructional materials and use ICT in teaching and learning and finally assess and evaluate learners.

When teachers are properly mentored by experienced teachers like heads of departments, director of studies, deputy headteachers, they can effectively prepare for teaching, assess and evaluate learners effectively.

In circumstances where team teaching is practiced, for example, join preparation for teaching, actual delivery of lesson and assessment makes a teacher to gain skills in implementing the curriculum.

Chapter Two: Literature Review

2.0 Introduction

This chapter presents literature reviewed from the works written by other scholars on CPD of teachers and implementation of LSC. The chapter contains the status of CPD in lower secondary schools, the level of implementation of LSC and lastly the relationship between CPD and implementation of LSC. It further critiques the views of different researchers and authorities based on the purpose and objectives of the study.

2.1 Status of Continuous Professional Development (CPD)

A Study conducted by Nasreen and Odhiambo (2018), investigated the status and practices of CPD of principals in Pakistan. They utilized both qualitative and quantitative approaches. Also, collected data through questionnaires and semi-structured interviews with 30 randomly selected secondary school principals from Lahore (Punjab, Pakistan). Further, Nasreen and Odhiambo (2018) in their study revealed that workshops, short and long training courses, self-directed study, and collaborative learning were the most frequently attended types of professional development activities, and the principles were somewhat in agreement about their professional learning through single day workshops, short courses, mentoring, collaborative work, and self-directed learning. However, with regard to their opinion on learning through other forms of professional activities, they disagreed about workshop series, long courses, conferences, peer coaching/observation, study groups/group activities, work-shadowing, networks, teleconference/video, action research, self-directed visits to professionals, and membership in professional organizations. A Closer look at the study above indicates that CPD was conducted among the principal moreover in colleges but not the subject teachers of secondary school setting. This study focused on examining the status of CPD among the teachers at lower secondary schools in Gulu City.

The significance of CPD of teachers in junior secondary schools in Botswana was revealed by Macheng, 2016. The study was quantitative and qualitative in nature and data was gathered using questionnaires and interviews. Also, a computer aided statistical analysis (SPSS version 20) was used to analyze the quantitatively derived data. The analysis engaged both descriptive and inferential statistical analysis. The study recommended that programmes such as coaching, mentoring, peer observation and lesson study should be established in schools to facilitate teacher development. However, the study above did not hypothesize any variables to measure aspect of continuous professional development of teachers but this study focused on short courses, seminars and workshops, Teacher mentorship, peer learning, and supervised practice of skills development among teachers of lower secondary in Gulu City.

A Study by Makhbuba (2022), revealed the current situation in the CPD of teachers at Tashkent State Pedagogical University, Uzbekista. Findings revealed that 46.5% of teachers did not have any problems during the in-service short course, 24% - answered that financial opportunity is not enough to go to short courses and there is need to take missed classes during the time spent on professional development particularly long courses and workshops, 17% answered that professional development programs like peer supervision and supervision practices did not suit their professional interests. However, the above study focused on CPD among teachers in a university setting yet the current study will focus on teachers of lower secondary level hence gaps.

Furthermore, Mekonnen (2014), investigated the practices of school-based teachers' CPD in secondary schools of Kemashi Zone, Benishangul- Gumuz Regional State. The research used a descriptive survey method, which was supplemented by qualitative data. The sampling techniques used included purposive, availability and simple random sampling. The sample size

was 83 teachers, 14 department heads, seven principals, seven schools, CPD facilitators, four educational office experts in Woreda state of Ethiopia, four cluster supervisors and one zone education office expert with the total of 120 participants out of 151 study populations. The data gathering tools employed were questionnaire, interview as well as document analysis. Data was analyzed using percentage, frequency, standard deviation, and mean score while the data gathered through interview and open-ended questions were narrated qualitatively. The study finding revealed that the extent to which teachers' engagement in CPD activities was inadequate because of the insufficient financial support provided for the teachers. However, this study was conducted in Kemashi Zone, Benishangul- Gumuz Regional State far apart from the current setting of Gulu City hence spatial gap.

Cirocki and Farrell (2019), report on a study of the CPD experiences of 250 teachers of English as a foreign language (EFL) in secondary schools in Indonesia. Using a mixed-methods approach through the use of a questionnaire, a reflective report and a focus group interview, the results revealed a detailed picture of the continuing professional development in the context under study. Specifically, the findings indicated that the EFL teachers conceptualize professional development in five different ways: school-based learning, an academic undertaking, a professional pursuit outside the school environment, a government scheme and self-directed learning. The study also showed that although the teachers had ample opportunity to develop professionally, not everyone took advantage of this. The study additionally reveals that some professional development activities were more impactful than others. Finally, the article recommended steps that sought to help EFL teachers to sustain their CPD as well as offers directions for future research. However, the study above dealt with EFL teachers other than teachers generally hence the current research dealt with teachers in lower secondary schools in Gulu City.

A Study by Rahman, et al., (2014) was aimed at uncovering the Continuing Professional Development (CPD) practices of the secondary school 'English' teachers of Assam. A self-developed questionnaire, with 36 open-ended items was used for the purpose of this study. The sample of the study consisted of fifty English teachers of class IX and X, selected from thirty purposely selected schools situated in rural and urban areas in Dhemaji district of Assam. The study found nearly forty percent English teachers of Assam attended in-service and ELT training and possessed a professional degree. Most of the teachers' involvement in Conferences/Seminars, publication in English or subscribing any ELT journals, either in print or online and professional associations was found to be very low. Nearly eighty percent teachers did not facilitate Peer Observation or getting feedback from students without knowing students' identity. The study was conducted among the English teachers yet the current study will be for teachers of lower secondary curriculum in Gulu City. Also, the study was conducted in India which is far apart from Gulu City. Further, the study used only 50 teachers of English who were selected from rural and urban schools while the current study used 710 teachers from the entire Gulu City secondary schools.

Also, Ozdemir (2013), examined the activities of professional development that Turkish elementary and secondary teachers experienced individually in the previous two years. Survey method was used and data were collected through an instrument developed by researcher. Sample consisted of 507 elementary and secondary teachers employed in 12 elementary and 11 secondary schools in Kırıkkale. Results indicated that the most common activities, teachers participated in, were "to search on the internet to follow the latest developments (new methods, techniques or activities) related to their fields or education and use these in their lessons", "to participate in forums on the Internet related to education or teachers to share opinions,

documents or activities for professional development", "to visit another school with the aim of professional development.

Furthermore, Okumu, et al., (2021), investigated the relationship between mentoring and teacher effectiveness in Government-aided secondary schools in the Acholi sub-region in Uganda using a descriptive and cross-sectional survey designs. Finding revealed that mentoring has enormous potential to bring about learning, personal growth and development for professional teachers. This study confirms that helping teachers to improve their classroom practices is very essential and builds their' confidence in teaching. Teachers increase their effectiveness when they are helped with strong instructional guidance in this way, it improves their skills of teaching. The school mentors (Director of Studies, Deputy Headteachers and Headteachers) from Government-aided secondary schools in the Acholi sub region positively acknowledged that helping teachers to improve teaching process is equally important. The mentors in these schools are close to the mentees, share ideas with them, talk about their welfare, monitor the mentees work and then discuss with them their areas of strengths and weaknesses. The research results showed that mentors in Government-aided secondary schools do not adequately help guide mentees to improve on teacher effectiveness. And yet helping mentees can result in teacher (mentees) being creative, resourceful, confident and active in teaching (Okumu et al., 2021). However, the current study considered only Gulu City secondary schools and used only cross sectional as a study design.

2.2 Implementation of lower secondary curriculum

According to Pak, et al. (2020), curriculum implementation refers to how teachers deliver instruction and assessment through the use of specified resources provided in a curriculum. Bourke, et al., (2020), investigated the level of implementation of an Ethical Education (EE)

Curriculum in Secondary Schools in Ireland. Interviews regarding this curriculum's effects on school culture and organization were conducted with thirteen teachers and two principals. Thematic analysis of transcripts, which examined participant views and identified systemic elements such as obstacles and enablers for the implementation of EE curriculum, was guided by an implementation science methodology. Interviews were analyzed utilizing Narvaez's framework of ethical skills for deductive analysis as well as inductive analysis based on participants' experiences. The results indicates that there was low level of curriculum implementation in secondary schools in Ireland. However, the current study was conducted in Gulu City, hence, spatial and knowledge gap.

A Study by Bowles, et al. (2018), in the United Kingdom revealed that majority (80%) of subject teachers possess emotional and relational competencies to support students in order to enhance curriculum implementation. This is because it enhances confidence, self-esteem, and students' participation in class discussions. However, Slater (2018) findings revealed that the retrieval practice of reviewing the previous lesson materials by asking quizzes at the start of a new lesson contributes to curriculum implementation. This shows that taking a recap of previous lessons whenever the subject teachers are to start a new lesson is important in curriculum implementation, as the practice enhances the students' memory. However, the current study assessed what the learner could do but not what the learner knows.

Ainsworth (2019), campaigned for a continued programme and curriculum development strategy for curriculum implementation in Europe. However, Tan and Park (2016) found out that teachers in lower secondary schools in the Asian countries have adopted ICT competence teacher training successfully hence they attained high level of curriculum implementation. They emphasized that text displays a clear connection between evaluation strategy and curriculum implementation. The

current study used more indicators to measure curriculum implementation such as preparations, participatory teaching, instructional materials, ICT integration, assessment and evaluation.

Coast (2019) reported that the use of online learning in teaching leads to curriculum implementation of the lower secondary curriculum. Moreover, quantitative studies conducted by Ayemhenre and Okolo (2019), report that adoption of ICT and utilization of the World Wide Web (WWW) in teaching is rational for curriculum implementation in lower secondary schools in Sub-Saharan Africa. This is evidenced by over 65% of questionnaire respondents who agreed that ICT aided the curriculum implementation process. The current study used many indicators for measuring implementation.

In East Africa, sufficient scholarly work has not been done to address the above. In Uganda particularly, little focus has been put on teacher practices for curriculum implementation of LSC. Ndawula et al., (2013) indicated that teachers with ICT skills guided the curriculum implementation of online subject content. Therefore, these findings mean that evaluation and monitoring of curriculum is being implemented to measure its effectiveness. It is not only evaluation which measures then effectiveness of implementation of LSC but also other elements such as preparations and use of instructional materials.

In Ugandan context, the study of Muhwezi et al., (2022), many teacher practices that supported the subject teachers in the implementation of the new lower secondary curriculum. The study participants revealed that ICT integration, assessment and evaluation, lesson planning, use of teaching aids, integration of teaching methods were the major teacher practices that Business subject teachers used to support their implementation of the new Business subject curriculum. The earlier indicated that subject teachers had some knowledge on ICT; were fully equipped in designing assessment items; dominated class sessions with both teacher-centeredness and

learner-centeredness method and prepared prior actual implementation process for consistency and timely completion of the syllabus. The current study looked at all the subjects in all secondary schools in Gulu City.

In addition, According to Oule, et al. (2023), LSC's implementation is not completed well in Uganda because it's adoption was hasty marred by inadequate teacher preparation and a lack of training resources, such as books. There were delays in distribution of senior three learners' text books to schools in Uganda whereby these books were released a year after implementation. Further, there was selective training of teachers in curriculum implementation by schools and this could be due to lack of logistics / funds to facilitate the training. While the current study sought to find the status of implementation of LSC in Gulu City in particular since there are no literature found for Gulu City.

2.3 The relationship between CPD of teachers and implementation of LSC

Melesse and Gulie (2019), examined the relationship between teachers' CPD and quality in education towards curriculum implementation in Fagita Lekoma Woreda, Awi Zone, Amhara Region, Ethiopia. Data was collected from teachers, school principals, and woreda regional education office supervisors. Questionnaire and interview were used as the data gathering tools of the study. Quantitative data was analyzed using percentage and one sample t-test while qualitative data was analyzed via thematic description. The findings confirmed that the respondents' level of agreement regarding the implementation of teachers' CPD was found significantly greater than the expected mean (3) in some parameters of the implementation of CPD. The aggregate calculated mean value of extent of CPD implementation (3.14) also showed insignificant difference from the expected mean (3). Moreover, it was confirmed that there was no significant difference between the expected mean and the calculated means of all the

parameters of the relationship between CPD and curriculum implementation in schools in the woreda. The study was conducted in Fagita Lekoma Woreda which is far apart from Gulu City context hence geographical scope.

Polly, et al. (2015), examined the link between professional development on both teachers' instruction and student achievement and curriculum implementation in terms of syllabus coverage. This study examined the influence of three year-long cohorts of elementary school teachers' participating in a learner-centered mathematics professional development program. Data sources include surveys on teachers' instructional practices and beliefs as well as their students' performance on curriculum-based assessments. Multi-level analyses indicated that teachers' content knowledge and changes in teachers' practices both had statistically significant effects on student achievement and syllabus coverage. This study advances the knowledge base on the influence of content knowledge and teachers' beliefs on student achievement. The current study considered teachers of all the subjects but not only for mathematics in Gulu City.

A Study by Mooney Simmie, 2007) was conducted from October to December 2005, Six biology associates were employed to progress the connection between curriculum implementation and the CPD of teachers at regional level. The associates worked with one hundred biology teachers in Teacher Design Teams (TDTs) and together they produced eighteen innovative classroom resources, which have now been made available for the teaching of biology nationally. The study considered the merits of the TDT approach as a form of curriculum implementation and CPD with reference to international literature in the area and the reported experiences of biology associates in working with biology teachers in one region. Findings indicate the benefits which accrue, when teachers are actively engaged in the process of curriculum implementation through TDTs hence this indicates a positive relationship between curriculum implementation and the

CPD of teachers at regional level. The current study focused on assessing on district/city level (Gulu City) and will be amongst teachers of all subjects.

2.4 Conclusion

This document presents a comprehensive overview of existing research on CPD for teachers, highlighting its crucial role in teacher development and curriculum implementation. While previous studies have shed light on various aspects of CPD in different contexts, they also reveal significant research gaps that necessitate further investigation. This research aims to address these gaps by focusing on the specific context of lower secondary schools in Gulu City, Uganda. The literatures present the status of CPD but did not adequately address some of the key aspects of the concepts such as in-service training, Seminars and workshops, Teacher mentorship, team teaching and conferences which the current study intends to address. Those on the level of implementation of curriculum did not, as well, address specific indicators of curriculum implementation such as; Integration of ICT, participatory teaching methods, use of instructions materials, lesson planning, scheme of work, assessment and evaluation of activity of integration, projects and end of year cycle. Literatures on the relationship between CPD of teachers and implementation of curriculum were brought out clearly and confirmed that there was no significant difference between the expected mean and the calculated means of all the parameters of the relationship between CPD and curriculum implementation in schools in the woreda (Melesse & Gulie, 2019). Such areas which were boosted through continuous Professional Development of Teachers included, amongst others, Integration of ICT, uses of instructional materials, teaching methods, preparation or planning, assessment, project work. This therefore credits continuous Professional Development of teachers while placing the above aspects of curriculum implementation in the center of the process. Could this be a similar situation with lower secondary schools in Gulu City?

Chapter Three: Methodology

3.0 Introduction

This chapter describes the procedure adopted to undertake the study. This included research orientation and design, target population, sampling size and strategies. It also detailed data collection methods and instruments, data quality control, and collection procedure, ethical considerations and data management.

3.1 Research Orientation

This study was conducted using Mixed Method which combines both Quantitative and Qualitative Research Approaches to provide a more thorough grasp of the research subject (Noble & Heale, 2019). According to the method underlying the mixed orientation, combining these two methods can maximize their individual advantages while reducing their disadvantages, thus producing results that are more solid, legitimate, and trustworthy. Further, using both Quantitative and Qualitative Approaches enriched the data for accuracy and relevancy (Shorten & Smith, 2017), and ensures data triangulation (Noble & Heale, 2019) for more reliable results.

To gather numerical data on CPD and implementation of lower secondary curriculum, the researcher distributed structured questionnaires to a representative sample of teachers of secondary school students in Gulu City. The survey included statements of inquiry on; status of CPD of teachers, implementation of LSC in Gulu City and demographic information (age, gender, education qualification, teaching experiences). Also, to gather in-depth information from key informants (headteachers and Gulu City inspectors of schools), the researcher designed interview guides for them.

3.2 Research Design

Research design is a master plan specifying the methods and procedures for collecting and analyzing the needed information in a research study (Mensah, 2020). This study used a cross-sectional research design, which comprised of both quantitative and qualitative approaches. According to Maier, et al. (2023), cross-sectional research design is a research tool used to capture information based on data gathered for a specific point in time and the data gathered is from a pool of participants with varied characteristics and demographics known as variables. The cross-sectional design was used for this study because of the economic nature of the design, its rapid ability of data collection, and its ability to understand a population by using part of the population (Amin, 2005; Martins, et al., 2017). Further, this study was Cross-sectional in nature to collect pertinent data from all the respondents at once during a short period of time to reduce costs and complete the study in time (Creswell, et al., 2007), and Correlational Designs to allow the researcher to describe the relationship between the two measured variables (Jackson, 2014).

3.3 Target Population

The target population for the study consisted of 710 teachers in the lower secondary education (Gulu City Education Office Record, 2024). Teachers were selected because: they are directly responsible for implementation of curriculum. All the head teachers (28) were included in this study because they are responsible for implementation of CPD of teachers. All inspectors of schools (02) were selected because they are responsible for monitoring of implementation of LSC in Gulu City.

3.4 Sample Size

The study used a sample size of 284 respondents. This comprised of 255 teachers and 28 head teachers from the 28 secondary schools in Gulu city and the inspector of schools. The sample

size was arrived at using Glenn D. Israel (1992) sample size procedure. The number of teachers that were sampled in each school among the 28 schools is shown in Table 1 below.

Using Glenn D. Israel (1992), the researcher has chosen to use highest precision (±5%) to determine the sample size for teachers (255) out of 710. The higher precision (±5%) is used because of reduced / smaller margin errors and minimal resources like time and funds. The reason for using the highest precision (±5%) was because it helped to select statistically sufficient sample size (255) to represent the views and characteristics of all teachers in the population.

However out of 255 questionnaires which were initially administered to teachers, 173 questionnaires were fully filled and returned for analysis.

Table 1: Sample Size Distribution

Category of Respondents	Population	Samples	Final Sample Size	Sampling Technique
Teachers	710	255	173	Simple Random Sampling
Headteachers	28	28	28	Purposive Sampling
Inspectors of School	02	01	01	Purposive Sampling
TOTAL	740	284	202	

Source: Primary source, (2024)

3.5 Sampling Technique

The study used Simple Random Sampling for the teachers. This technique was employed to enable equal inclusion probability of every member of population in the sample (Taherdoost, 2016, p.21). This was so to avoid prejudice and give the opportunity to obtain the appropriate characteristics required of the sample members.

The study also used Purposive Sampling for the head teachers who oversees curriculum implementation and implement CPD. The Inspectors of Schools were selected using purposive sampling techniques because of their positions as external supervisors and monitors who inspect

the curriculum implementation in schools. Thus, 02 inspectors of Schools and 28 head teachers were purposively selected.

3.6 Data Collection Methods

The study employed Questionnaire Survey Method of data collection because respondents were required to provide personal views, opinions, perception and feelings in a pre-determined order (Taherdoost, 2016), since the study variables could not be directly observed. In addition, obtaining a lot of information over a short period of time was hard using other methods.

The study also employed Interview Method to help corroborate information obtained from the Questionnaire Survey where the researcher carefully asked the selected respondents from Gulu City with the purpose of obtaining in depth firsthand information (Castillo-Montoya, 2016).

3.7 Data collection instruments

Questionnaire and an Interview Guide were used as explained below.

3.7.1 Questionnaire

The study utilized a Structured Self-administered Questionnaire (SAQs), consisting of items that provide a variety of rating scales. The five- point Likert Scale involved use of descriptions such as *Strongly Agree* (5), *Agree* (4), *Not Sure* (3), *Disagree* (2) and *Strongly Disagree* (1). This tool was appropriate because it saves time and gives respondents a chance to answer questions at their convenience, thus eliminating interview bias (Rodriguez, et al., 2015). In addition, the Questionnaire was also used because the study focused on opinions, attitudes, feelings and perceptions (Cohen, et al., 017), of teachers who have undergone CPD and implemented LSC.

Table 2. The evaluation of items in the questionnaire by 3 Judges

	Judge 1		Judge 2		Judge 3	
ITEMS	Relevant	Not Relevant	Relevant	Not Relevant	Relevant	Not Relevant
Section A	06	00	05	01	06	00
Section B	19	02	18	03	19	03
Section C	24	01	24	01	20	05
TOTAL	49	03	47	05	45	08

Source: Primary Data, 2024

3.7.2 Interview Guide

The choice of Interview Guide as a data collection instrument helped to triangulate the questionnaires. An Interview Guide was prepared to assist Face-to-Face Interview with the head teachers and Inspectors of Schools while collecting data. It comprises majorly open-ended questions to be verbally responded to by the respondents on a one-on-one basis as the researcher made the recording. The guide helped to obtain in-depth views and opinion of the key informants (Head teachers and Inspectors of Schools) who were treated as resourceful, experienced and knowledgeable people in the field of CPD of teachers and curriculum implementation in secondary schools.

3.8 Data Quality Control

Data quality control was assured through validity and reliability tests of the research instruments.

3.8.1 Validity of Instruments.

The validity of instruments in the research was ensured by; preparing items that conform to the study's research objectives and Conceptual Framework (Figure 1), passing the instrument to 3 experts to evaluate the relevance of each item in the instruments to the objectives of the study and rating them on the scale of Relevant (2) or Not Relevant (1). Content Validity Index (C.V.I)

which was rated either 1 or 2 by all the judges divided by the total number of items in the Questionnaire (Zamanzadeh, et al., 2015), was used to determine validity too.

$$\text{Content Validity Index (CVI)} = \frac{\text{Number of items rated relevant}}{\text{Total number of items in the questionnaire}}$$

Therefore, the total items rated relevant by all judges = 141; the total number of items in the questionnaire are 157.

Content Validity Index (CVI) = 141/157

= 0.898

The rule of acceptance was adopted from Amin (2005), who maintained that for any instrument to be accepted as valid, the average index should be 0.70 and above. Therefore, the obtained value of 0.898 was considered valid.

The researcher ensured the validity of interview guide by passing it through the supervisors and other research experts or judges to critique the interview guide until it became fit for the purpose of this study.

3.8.2 Reliability of Instruments.

In order to ensure reliability, a pilot study was carried out in two schools in Omoro district, which were not part of the study. At least 10 teachers and 2 head teachers was selected from each school. For consistency of research results from the study, high coefficient indicated a high reliability and high reliability indicated minimum error variable (Taherdoost, 2016). Data from the pilot study was analyzed with the help of the SPSS 20 and the result was obtained.

The study also analyzed data from the pilot study using Cronbach's Alpha Statistical Method to measure the internal consistency or the correlation of the items in the Questionnaire. The scale of 0.7 in the Cronbach's Alpha Coefficient was considered reliable (Bujang, et al., 2018). This method, unlike the others requires only a single sample for estimating reliability (Howard, 2020).

The researcher ensured the reliability of interview guide by passing it through the supervisors and other research experts or judges to critique the interview guide until it became fit for the purpose of this study.

3.9 Administration Procedures

Official channels of requesting for permission to carry out this study was followed. After successfully defending the proposal, the researcher obtained approval of research proposal from Dean of Faculty of Education of Gulu University. Request to carry out this study was granted by the Dean, Faculty of Education and Humanities of Gulu University to the City Education Officer (CEO) and the different head teachers whose schools were involved in the study because this authenticated the research process. The researcher later trained a research assistant who helped him in the field and then made appointments with the different schools by the use of letters and telephone calls. The use of a research assistant was necessary because the distance between some schools in Gulu City is so great that the researcher could not traverse to all the schools within the period of time available. On the appointed dates, the Questionnaires were then administered within 25 minutes to teachers and collected instantly by the researcher or the research assistant. Interviews were conducted with the head teachers from their schools on appointed dates and time convenient for them; the Inspector of Schools was also interviewed from the workplace on appointed dates. Each of these interviews took a maximum of 25 minutes. Finally, the data was analyzed, interpreted and the report was processed.

3.10 Ethical Considerations

Anonymity. The researcher informed all participants in the research that they have the right to remain anonymous and that their individual identities were not required. The anonymity

therefore was ensured by pooling data and releasing them as group data rather than individual ones and subjects were identified by tags not names.

Confidentiality. This means knowing some information without revealing it to other people because they were not supposed to have it (Gladwell, 2010). Confidentiality of the hardcopy data was ensured by locking them in safe bag that could only be accessed by the researcher himself. Soft copy data was encrypted by a password.

Informed Consent. The researcher also considered informing participants of the procedures and purpose of the study as being purely academic and any unforeseen risk or discomfort were equally communicated. Plus consent forms were given to them.

3.11 Data Analysis

Data analysis started with sorting and coding of data (Chowdhury, 2015). In this study Quantitative Data from the Questionnaires was analyzed with the help of the Statistical Package for Social Scientists (SPSS) version 20.

Descriptive statistics comprising of statistical tools like percentages, mean and standard deviation were used to examine the status of CPD of teachers and to determine the level of implementation of curriculum in lower secondary schools in Gulu City.

One way Analysis of Variance (ANOVA) was used to compare the means of the different responses on objectives 1 and 2 to determine the extent of the influence of CPD of teachers on the implementation of LSC.

Then the Pearsons Product Moment Correlation was used to analyze objective 3 which was to determine the relationship between CPD of Teachers and Curriculum implementation in the lower secondary schools.

Qualitative Data from Interviews was analyzed using Thematic Analysis and information was mainly narratively presented. This supplemented findings from statistical analysis.

3.12 Limitations and Delimitations of the Study

The study was faced with the challenge of limited time to conduct test-retest reliability of the research instruments. Therefore, Cronbach's Alpha which can calculate data from a single sample unlike other methods were used to beat time (Howard, 2020).

The study equally faced unavailability of some experts who should rate the questionnaires for validity as a result of their busy schedule. Therefore, the researcher had to look for new judges to ensure continuity of work.

Chapter Four: Data Presentation, Analysis and Interpretation

4.0 Introduction

This section presents findings of the study which aimed at investigating the relationship between CPD of teachers and implementation of LSC in Gulu City. The study was guided by specific objectives that include: - (i) to examine the status of CPD of teachers in lower secondary in Gulu City, (ii) to determine the level of implementation of LSC in Gulu City, and lastly (iii) to establish the relationship between CPD of Teachers and implementation of the LSC in Gulu City. Data was collected using questionnaires that were administered to 255 teachers of secondary schools teaching lower secondary curriculum in Gulu City and 173 questionnaires were returned. Interviews were conducted with key informants who included an inspector of schools of Gulu City and 28 head teachers of secondary schools in Gulu City with the help of interview guides. Data was analyzed using SPSS version 20. Analysis on objectives 1 and 2, and bio-data of the respondents were done with the help of frequency and percentages. Also, the descriptive statistical methods of mean and standard deviation were used to analyze objectives 1 and 2. Then the Pearsons Product Moment Correlations, Model Summary, ANOVA and Coefficients were used to analyze objective 3.

4.1 Background information of teachers

The demographic characteristics of respondents are presented in this section to provide context for the analysis. The sample of 173 teachers includes both male and female participants, as well as individuals with different marital statuses and educational levels. This section explores factors such as gender, marital status, level of education, and years of service among the teachers, which may influence both the CPD of teachers and implementation of LSC.

Table 3: Demographic Characteristics of Teachers

Demographic Characteristics of Teachers		Frequency	Percent (%)
Gender of the Respondents	Male	113	65.3%
	Female	60	34.7%
Age of the respondents (Years)	Below 20	0	0.0%
	20-24	11	6.4%
	25-29	45	26.0%
	30-35	44	25.4%
	36-39	20	11.6%
	40-44	19	11.0%
	45-49	17	9.8%
	50-54	12	6.9%
	> 55	5	2.9%
Education of the respondents	PhD	0	0.0%
	Master	5	2.9%
	Postgraduate Diploma	9	5.2%
	Graduate	116	67.1%
	Diploma	43	24.9%
Teaching experience (Years)	1-5	47	27.2%
	6-10	61	35.3%
	11-15	32	18.5%
	16-20	14	8.1%
	21 and Bove Years	19	11.0%

Source: Primary data, 2024

Table 3 shows that the majority of the respondents are male, comprising 113 (65.3%) of the total, while females represent only 60 (34.7%). This disparity indicates a gender imbalance in the teaching profession in Gulu City. It suggests that male teachers are more prevalent in lower secondary education settings, which could reflect societal norms or barriers that limit female participation. If male teachers dominate the workforce, it could impact how female students engage with subjects traditionally viewed as male-oriented, such as STEM (Science, Technology, Engineering, and Mathematics). Efforts to encourage female participation in teaching and educational leadership could help balance this ratio.

The age distribution shows 20-24 years 11 (6.4%) and 25-29 years 45 (26.0%). A relatively small number of young teachers (age 24 and below) suggests that entry into the profession may happen later, possibly due to extended education or training periods. Teachers in the age brackets of 30-35 years were 44 (25.4%). This age group represents the largest portion of respondents, indicating a core demographic of experienced educators who may be more familiar with CPD practices. Teachers in the age brackets of 36-39 years were 20 (11.6%) and 40-44 years were 20 (11.0%). These groups reflect mid-career teachers who might be seeking new CPD opportunities to enhance their teaching methods. Teachers in the age brackets of 45-49 years were 17 (9.8%); 50-54 years 12 ((6.9%), and >55 years 5 (2.9%). The presence of fewer older teachers may reflect either retirement trends or lower recruitment of mature educators in recent years. The significant proportion of teachers in the 30-35 age range suggests they are likely to be receptive to new educational strategies and curricula reforms, particularly if they perceive them as beneficial to their teaching practice and student outcomes.

Concerning the education of the teachers, findings revealed the graduate 116 (67.1%), Diploma 43 (24.9%), Postgraduate Diploma 9 (5.2%) and Master's Degree 5 (2.9%). The high number of graduate-educated teachers may mean that they are more likely to engage in CPD initiatives that require critical thinking and advanced instructional strategies.

About the teaching experience, teachers in 1-5 years were 47 (27.2%), 6-10 years 61 (35.3%), 11-15 years 32 (18.5%), 16-20 years 14 (8.1%) and 21 years and above 19 (11.0%). The concentration of teachers with less than 10 years of experience highlights a potential need for robust mentorship programs that leverage the experience of those with more than a decade in the field, ensuring a smooth transition into contemporary teaching practices and curriculum implementation.

4.2 Descriptive Statistics on the status of CPD of teachers in lower secondary schools in Gulu City

Objective one focused on analyzing the status of CPD of teachers in lower secondary schools in Gulu City. CPD was categorized in terms of in-service training, seminars and workshops, teachers' mentorship and lastly team teaching as analyzed below:

Table 4: Status of CPD of teachers in lower secondary schools in Gulu City

KEY: SA- Strongly Agree; A- Agree; NS- Not Sure; D- Disagree; SD- Strongly Disagree

In-service Training	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
I have ever attended in-service training for my professional development	73	76	149	2	13	9	22
	42.2%	43.9%	86.1%	1.2%	7.5%	5.2%	12.7%
The school administration allows me to go for long in-service training	39	86	125	19	20	9	29
	22.5%	49.7%	72.3%	11.0%	11.6%	5.2%	16.8%
I have ever been facilitated by my school to go and have my professional training	38	79	117	11	30	15	45
	22.0%	45.7%	67.6%	6.4%	17.3%	8.7%	26.0%
I have so far attended many in-service trainings	41	91	132	7	27	7	34
	23.7%	52.6%	76.3%	4.0%	15.6%	4.0%	19.7%
All my in-service trainings are in line with my profession	44	103	147	7	14	5	19
	25.4%	59.5%	85.0%	4.0%	8.1%	2.9%	11.0%
The training I attended are in line with my day-to-day work	50	98	148	7	14	4	18
	28.9%	56.6%	85.5%	4.0%	8.1%	2.3%	10.4%
Seminar and Workshop	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
I have attended many seminars and workshops in my profession	67	92	159	2	10	2	12
	38.7%	53.2%	91.9%	1.2%	5.8%	1.2%	6.9%
All the workshops and seminar I attended are in line with my teaching profession	50	98	148	5	18	2	20
	28.9%	56.6%	85.5%	2.9%	10.4%	1.2%	11.6%
My school always support me for the seminars and workshops	40	99	139	12	16	6	22
	23.1%	57.2%	80.3%	6.9%	9.2%	3.5%	12.7%
I gained knowledge and skills in the seminars and workshops that I attended	59	100	159	2	11	1	12
	34.1%	57.8%	91.9%	1.2%	6.4%	0.6%	6.9%
I am always kept up to date in my profession through the seminars and workshops	44	106	150	8	10	5	15
	25.4%	61.3%	86.7%	4.6%	5.8%	2.9%	8.7%
Teachers' Mentorship	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
My school has teachers' mentorship program	29	78	107	21	32	13	45
	16.8%	45.1%	61.8%	12.1%	18.5%	7.5%	26.0%
I have benefited from our teachers' mentorship program	27	78	105	19	39	10	49
	15.6%	45.1%	60.7%	11.0%	22.5%	5.8%	28.3%
I have a teacher mentor who continuously guide me in my profession	25	78	103	18	43	9	52
	14.5%	45.1%	59.5%	10.4%	24.9%	5.2%	30.1%
I am more updated in my profession through the help of my mentors	24	85	109	12	42	10	52
	13.9%	49.1%	63.0%	6.9%	24.3%	5.8%	30.1%
My mentor is very experienced, professional and skilled enough to support me	36	72	108	18	39	8	47
	20.8%	41.6%	62.4%	10.4%	22.5%	4.6%	27.2%
Team teaching	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
My school has in place team teaching program	47	97	144	11	14	4	18
	27.2%	56.1%	83.2%	6.4%	8.1%	2.3%	10.4%
I have ever been supported by departmental members	60	101	161	2	8	2	10
	34.7%	58.4%	93.1%	1.2%	4.6%	1.2%	5.8%
I gained a lot of experience and knowledge through team teaching	46	104	150	13	8	2	10
	26.6%	60.1%	86.7%	7.5%	4.6%	1.2%	5.8%
The team teaching helps me to understand difficult concepts	52	103	155	9	7	2	9
	30.1%	59.5%	89.6%	5.2%	4.0%	1.2%	5.2%
Team teaching has helped to improve on my teaching performance	45	112	157	9	5	2	7
	26.0%	64.7%	90.8%	5.2%	2.9%	1.2%	4.0%

Source: Primary data, 2024

The analysis of in-service training for teachers in Gulu City, as outlined in Table 4 above, demonstrates that the majority of teachers have participated in such professional development opportunities, with a high percentage 149 (86.1%) affirming attendance at in-service training. This is a strong indication that professional development is widely accessible, and teachers recognize its importance for their growth. The neutral response (NS) to this statement is relatively low 2 (1.2%), and only 22 12.7% express some level of disagreement (D+SD), highlighting the general acceptance of in-service training as a professional practice.

The support from school administration for long-term in-service training is fairly strong, with 125 (72.3%) agreeing that they are allowed to pursue this opportunity. However, a slightly higher neutral response 19 (11.0%) suggests that there is a level of uncertainty or inconsistency in the extent of support provided, and a combined 29 16.8% (D+SD) feel their ability to attend long-term training is not adequately supported.

When it comes to facilitation, around 117 (67.6%) of respondents agree that their schools facilitate their professional training. However, this is comparatively lower than the overall participation in training. With 45 (26.0%) expressing disagreement, there is a notable gap between attending training and receiving adequate support from the schools, indicating that while teachers are participating in professional development, they might be doing so without comprehensive support or facilitation.

The majority of teachers 132 (76.3%) agree that they have attended many in-service training sessions, which reflects ongoing efforts for continuous development. However, a small percentage of respondents remain neutral 7 (4.0%), and around 34 (19.7%) disagree, suggesting that while many have accessed multiple training opportunities, some still face limitations in the frequency or availability of such programs.

A substantial percentage of respondents 147 (85.0%) indicate that their in-service training aligns with their profession, reinforcing the relevance of these sessions to their professional roles and responsibilities. Only 19 (11.0%) express disagreement, which may reflect isolated cases where training content or focus diverged from specific professional needs while least 7 (4%) were not sure about this statement of inquiry.

The overall analysis reveals that in-service training practices in Gulu City are generally perceived positively, with an average of 134 (77.5%) of teachers agreeing that these professional development opportunities are provided and relevant. The consistency across various indicators of in-service training suggests that while the majority of teachers experience professional development aligned with their roles, some challenges remain, particularly regarding facilitation and support from school administrations. This is consistent with the broader context of career guidance in these schools, indicating a robust approach to professional development, but with room for further enhancement in support and facilitation mechanisms.

In examining the status of in-service training in lower secondary schools in Gulu City, responses from headteachers on this were found as follows:

Respondents 3, 8, 4, 7 confirmed the availability and the effectiveness of the implementation of in-service training for their staff in their respective schools: "*Most of our staff have enrolled for in-service training programs in fulfilment of the National teachers' policy which says all teachers from primary to secondary must have a minimum qualification of a degree. Also in my school, to support this program, we have a yearly budget that support a number of teachers towards this training and this comes from the board of Governors.*" The in-service training which most headteachers responded to are for upgrading training programs that are attended by staff when they apply for study leave and sometimes distant learning program.

Findings on seminars and workshops in Table 4 show that a significant majority (159, 91.9%) of respondents agree that they have attended many seminars and workshops in their profession, suggesting a broad engagement with professional development activities. Only a small proportion 12 (6.9%) disagrees with this statement.

A large proportion 148 (85.5%) of respondents confirm that the seminars and workshops they attend are relevant to their teaching profession, with 50 (28.9%) strongly agreeing and 98 (56.6%) agreeing. The low level of disagreement 20 (11.6%) indicates that most teachers find these training opportunities aligned with their professional needs.

Support from schools for attending seminars and workshops is evident, with 139 (80.3%) of respondents indicating strong agreement 40 (23.1%) or agreement 99 (57.2%). However, 22 (12.7%) express disagreement, which might reflect variability in support across different schools.

Respondents highly appreciate the skills and knowledge acquired through these training sessions, as 159 (91.9%) agreed that they gained new knowledge and skills. The very low disagreement 12 (6.9%) suggests that these training sessions are generally effective and beneficial.

Respondents 1, 2, 6, 17 and 23 confirmed that seminars and workshop were taking place in their respective schools. "*This is being organized internally (school level) but most of the time externally by organization that work with the MoES such as UNEB, NCDC and SESMAT. It is being done at the beginning of the term, during the term and at the end of the term. Some of these seminars & workshop like Secondary Science and Mathematics Teachers (SESMAT) is compulsory and must be attended by all science teachers of every school in Uganda with the aim of improving the teaching and learning of science subjects."* Findings revealed that each school also facilitate their respective teachers to attend such the seminars and workshop whereby at the

end, each teacher walks out with the certificate of attendance and the school also gets a certificate as acknowledgment for allowing its teachers participation.

Key informants 1, 2, 6, 17 and 23 further argued that UNEB had started retooling examiners, which is done in terms of workshop and seminars during holidays with the aim of improving scoring during assessment of national examination. Its during such seminars and workshops where examiners/scorers are made to know how the new grading system for CBC would be done for 2024 national examinations.

The analysis of teachers' mentorship (Table 4) in secondary schools in Gulu City reveals that a mentorship program is in place in many schools, with 107 (61.8%) of respondents acknowledging its existence. However, 45 (26.0%) of respondents do not agree that such a program is available, indicating that while the mentorship program is widespread, it is not universally implemented.

When examining the benefits derived from mentorship, 105 (60.7%) of respondents affirm they have benefited from the teachers' mentorship program, showing a strong perception of the program's positive impact. However, 49 (28.3%) do not share this sentiment, suggesting that while the mentorship is effective for a majority, there is still a considerable portion of teachers who do not perceive its benefits.

Regarding having a continuous mentor, 103 (59.5%) of respondents agree they have a teacher mentor guiding their professional development, but 52 (30.1%) indicate otherwise. This disparity suggests that while mentorship relationships are relatively common, consistent guidance may not be experienced by all teachers.

Mentorship is also perceived to contribute to professional development, with 101 (63.0%) of respondents feeling that they are more updated in their profession through their mentors. However, 52 (30.1%) disagree, highlighting a gap in how mentorship is facilitating professional growth for all.

Lastly, the experience and skills of mentors are recognized, with an average of 108 (62.4%) of respondents agreeing that their mentor is experienced, professional, and skilled enough to support them effectively. Nevertheless, 47 (28.6%) do not concur, indicating that while many mentors are deemed capable, a significant minority of teachers feel their mentors may lack sufficient expertise.

Respondents 10, 19, 21, 18, 14 and 26 acknowledged the availability of teachers' mentorship though having some gaps in its implementation. *"Some departments in my school lack experienced mentors who could guide teachers on effective teaching and learning. Also, in these schools, some departments have only one personnel, especially the vocational and elective subject areas, making this program not to be implemented well. This has also been affected by high rate of teacher turn-over."* This implies that schools should have retention strategy for maintaining experienced teachers / mentors in the school.

The analysis of team-teaching program (Table 4) in schools shows that the most prevalent aspect is support from departmental members, with 161 (93.1%) of respondents affirming they have been supported by their colleagues, and only 10 (5.8%) disagreeing. Similarly, 155 (89.6%) of respondents agree that team teaching helps them understand difficult concepts, while 9 (5.2%) remain neutral or disagree. A significant majority 150 (86.7%) also feel that they have gained substantial experience and knowledge through team teaching, with only 10 (5.8%) disagreeing.

The presence of a team-teaching program in schools is also well-supported, with 144 (83.2%) of respondents indicating its existence, though 18 (10.4%) disagree.

Respondents 8, 3 and 5 during interviews argued as below:

”The *competency-based curriculum emphasizes team work for the learners who sits in group, and for teachers who prepares for teaching jointly and carry out assessment collectively. Effective teaching and learning require collaborative support of teachers in terms of preparation, delivery and assessment as a unit or team and this is well done in my school since some of these teaching and learning activities cannot be done individually. Therefore, this calls for teamwork.”*

Finding revealed responses from Gulu City Inspector of Schools about CPD in Gulu City as follows:

“*Under Local Government, Inspectorate Department of Education are not allocated fund from central government for professional development opportunities. They only provide oversight roles and identify opportunities where such funds can be got from schools.”* This implies that implies that they cannot enforce CPD activities in schools especially those who do not have the funds to put it in practice since their office is not allocated funding.

4.3 Descriptive Statistics on the level of implementation of LSC in Gulu City

Objective two focused on determining the level of implementation of LSC in Gulu City. Implementation of LSC was categorized in terms of preparation for teaching, instructional material, participatory teaching method, ICT integration and lastly Assessment and Evaluation. The results obtained are summarized in Table 5.

Table 5 The level of implementation of LSC in Gulu City.

Preparation for Teaching	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
I always prepare scheme of work relevant to the CBS	100	67	167	3	3	0	3
	57.8%	38.7%	96.5%	1.7%	1.7%	0.0%	1.7%
I always prepare lesson plan for teaching	52	82	134	9	28	2	30
	30.1%	47.4%	77.5%	5.2%	16.2%	1.2%	17.3%
I use observation checklist for assessment of psychomotor and affective skills	62	95	157	3	13	0	13
	35.8%	54.9%	90.8%	1.7%	7.5%	0.0%	7.5%
I prepare activities to be done for the learners during classroom interaction	62	106	168	3	2	0	2
	35.8%	61.3%	97.1%	1.7%	1.2%	0.0%	1.2%
I improvise the needed teaching materials for the lesson	59	107	166	4	3	0	3
	34.1%	61.8%	96.0%	2.3%	1.7%	0.0%	1.7%
Instructional Materials	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
My school provides enough teaching materials for my learners	21	112	133	8	28	3	31
	12.2%	65.1%	77.3%	4.7%	16.3%	1.7%	18.0%
I am able to effectively connect all the curriculum materials during teaching and learning	22	112	134	12	26	1	27
	12.7%	64.7%	77.5%	6.9%	15.0%	0.6%	15.6%
My learners can easily access the instructional materials for learning	21	109	130	15	25	3	28
	12.1%	63.0%	75.1%	8.7%	14.5%	1.7%	16.2%
I can easily access the instructional materials at anytime	27	98	125	13	31	4	35
	15.6%	56.6%	72.3%	7.5%	17.9%	2.3%	20.2%
The instructional materials are appropriate to the learners' level	23	124	147	6	18	2	20
	13.3%	71.7%	85.0%	3.5%	10.4%	1.2%	11.6%
Participatory Teaching method	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
I always use cooperative learning methods when teaching in class	43	114	157	11	5	0	5
	24.9%	65.9%	90.8%	6.4%	2.9%	0.0%	2.9%
I use project-based learning method for developing innovation	41	113	154	7	12	0	12
	23.7%	65.3%	89.0%	4.0%	6.9%	0.0%	6.9%
I find that the self-discovery teaching method is appropriate for me when teaching	41	117	158	6	9	0	9
	23.7%	67.6%	91.3%	3.5%	5.2%	0.0%	5.2%
I use inquiry-based learning when teaching	41	117	158	7	7	1	8
	23.7%	67.6%	91.3%	4.0%	4.0%	0.6%	4.6%
I use learners-centered methods in my teaching	59	104	163	4	6	0	6
	34.1%	60.1%	94.2%	2.3%	3.5%	0.0%	3.5%
ICT Integration	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
I always integrate ICT in my daily teaching	33	87	120	11	36	6	42
	19.1%	50.3%	69.4%	6.4%	20.8%	3.5%	24.3%
I have received training on ICT integration	25	86	111	14	43	5	48
	14.5%	49.7%	64.2%	8.1%	24.9%	2.9%	27.7%
I have knowledge of the use of a variety of ICT materials in my teaching process	29	89	118	11	38	6	44
	16.8%	51.4%	68.2%	6.4%	22.0%	3.5%	25.4%
I can apply ICT knowledge in teaching all the topics in my subject	33	77	110	18	37	8	45
	19.1%	44.5%	63.6%	10.4%	21.4%	4.6%	26.0%
I can easily guide my students to use various ICT devices for research and class activities	28	88	116	21	28	8	36
	16.2%	50.9%	67.1%	12.1%	16.2%	4.6%	20.8%
Assessment & Evaluation	**SA**	**A**	**SA+A**	**NS**	**D**	**SD**	**D+SD**
I always evaluate and assess my learners in Activity of Integration (AOI), projects, end of year and continuous assessment item (CAI) basing on the standards	108	61	169	1	3	0	3
	62.4%	35.3%	97.7%	0.6%	1.7%	0.0%	1.7%
I have been trained on evaluation and assessment criteria for Competency based curriculum	85	75	160	7	6	0	6
	49.1%	43.4%	92.5%	4.0%	3.5%	0.0%	3.5%
I can report learners' achievements to stakeholders	67	95	162	7	4	0	4
	38.7%	54.9%	93.6%	4.0%	2.3%	0.0%	2.3%
Evaluation and assessment criteria are simple and easy to perform	48	102	150	8	12	3	15
	27.7%	59.0%	86.7%	4.6%	6.9%	1.7%	8.7%
I can effectively score students' AOI and end of year assessment	69	91	160	6	6	0	6
	40.1%	52.9%	93.0%	3.5%	3.5%	0.0%	3.5%

Source: Primary data, 2024

The evaluation of teachers' preparation for teaching in relation to the CBC reflects generally high levels of agreement with some variations across different practices (Table 5). The highest agreement is with the preparation of relevant schemes of work, where 167 (96.5%) of teachers agree (SA+A), indicating a strong commitment that they draw relevant scheme of work for CBC. A similarly high level of agreement is observed in the preparation of classroom activities, with 168 (97.1%) of teachers preparing activities for learners, highlighting a focus on interactive learning.

The use of observation checklists for assessing psychomotor and affective skills is also well-supported, with 157 (90.8%) of respondents agreeing, indicating a comprehensive approach to student assessment beyond cognitive skills. However, a lower but still considerable level of agreement is noted in the preparation of lesson plans for teaching, with 134 (77.5%) of teachers affirming this practice, while 30 (17.3%) disagree, showing some inconsistency in lesson planning practices.

Overall, the level of agreement across all aspects of preparation is high suggesting a strong adherence to practices that support the implementation of CBC and this also indicates adherence for professionalism. Disagreement across all practices is low, indicating that the majority of teachers are engaged in thorough preparation for teaching in line with curriculum standards, despite some variability in specific practices like lesson planning and following of the new CBC format.

The level of implementation of LSC in Gulu City for the past years has been a topic of significant interest by all the educational stakeholders. Insights from Headteachers of the participating schools reveal a complex picture of standard of progress, effectiveness, availability and implementation as per the implementation guideline of LSC.

Respondents 3 and 8 argued that; "*As far as preparation for delivery of CBC learning is concerned, most of the teachers prepare schemes of work before start of the term for teaching and learning but few only few teachers prepare lesson plans. This is attributed to high workload due to high enrolment of learners in schools, for example, teaching period is beyond 24 periods per week."* This implies that curriculum implementation can only be effective if teachers prepares both scheme of work and lesson plans to deliver CBC. Some of the teachers also fear because they have inadequate knowledge to prepare the scheme of work and lesson plans in the competency way.

The availability and accessibility of instructional materials was also determined as seen in Table 5 above. The highest agreement among respondents is with the statement that "My school provides enough teaching materials for my learners," with 133 (77.3%) affirming this and only 18.0% disagreeing. Similarly, 134 (77.5%) of respondents agree that they are able to effectively link curriculum documents, indicating strong coherence in material usage. The accessibility of instructional materials for learners is also viewed favorably, with 130 (75.1%) of respondents indicating that learners can easily access the materials, while 28 (16.2%) disagree.

However, there is a slight decline in perceived accessibility when it comes to teachers' access to these materials, with 125 (72.3%) agreement and 35 (20.2%) disagreement, suggesting that while most teachers can access instructional materials, there is still a challenge for some. Furthermore, 147 (85.0%) agree that the instructional materials are appropriate to the learners' level, highlighting a strong match between the materials and the learners' needs.

Overall, looking at across all the aspects of instructional materials, there is high availability of instructional materials which are majorly provided by the government indicating a favorable perception of the availability, coherence, and appropriateness of instructional materials in

implementing the curriculum. Nevertheless, not all teaching and learning materials are provided by the government and within easy reach of the teachers and learners.

Respondents 27, 25, 28, 20, 22 and 26 said they have insufficient instructional materials mainly the textbooks in some subjects in other classes as follow: "*Some textbooks for S.3 and other classes, were delayed to be brought or distributed by government a year after the curriculum was rolled out and this affected coverage and implementation.* This implies that the implementation of this new curriculum did not take place uniformly in all subjects.

The analysis of participatory teaching methods among educators shows a generally high level of agreement in the use of various active learning strategies, with some differences across the methods (Table 5). The most commonly agreed-upon practice is the use of problem method of teaching, with 158 (91.3%) of respondents either strongly agreeing or agreeing that it is appropriate for their teaching. Similarly, 158 (91.3%) support the use of inquiry-based learning in their teaching.

Also, the use of cooperative learning is highly favored, with 157 (90.8%) agreement since it is a requirement of the sitting arrangement in the competency-based learning. This was closely followed by project-based learning for developing innovation, which is agreed upon by 154 (89.0%) of the teachers. The overall trend indicates a strong inclination towards participatory and student-centered teaching methods, as the average agreement across these approaches stands at 90.6%. However, there were still some defiant teachers who still go the traditional way of teacher centered learning as indicated in the findings. Learner-centered method as a guide for implementation of LSC is being used as reflected by the scores (163, 94.2%).

The neutrality across these teaching methods is minimal. A small portion of respondents expressed disagreement or strong disagreement with these methods. This suggests that while

participatory teaching approaches are widely embraced, a small subset of educators may either be hesitant or have different preferences for their teaching style. Overall, the data reflects a strong positive perception and adoption of participatory and learner-centered teaching strategies among the educators surveyed.

However, some respondents 9, 10, 13 negatively said; "a*lthough the implementation of the LSC stands at around 90% in my school, there are still few gaps of some teachers having negative attitude towards this curriculum as reflected in the work they do for preparing, delivering and assessment of the learners."* This affects implementation since the guideline of the LSC is not being followed.

The analysis of ICT integration in the teaching and learning process among lower secondary school teachers in Gulu City reflects a generally positive perception, with varying degrees of implementation across different aspects (Table 5). The highest level of agreement is seen in the statement "I always integrate ICT in my daily teaching," with 120 (69.4%) of respondents agreeing (SA+A), and 42 (24.3%) disagreeing (D+SD). A similar positive trend is observed in teachers' training on ICT integration, where 111 (64.2%) affirm having received training, while 48 (27.7%) disagree.

Knowledge of using a variety of ICT materials in teaching is acknowledged by 118 (68.2%) of teachers, suggesting a strong awareness of diverse ICT tools, with 44 (25.4%) indicating disagreement. The ability to apply ICT knowledge across all teaching topics sees slightly lower affirmation at 110 (63.6%), accompanied by 45 (26.0%) disagreement, indicating some challenges in comprehensive ICT application in teaching and learning.

The ease of guiding students in using ICT devices for research and class activities is rated with a slightly lower agreement of 66.4%, and a disagreement of 25.8%.

On average, the overall agreement on the integration of ICT in teaching and learning stands at 116 (67.1%), reflecting a favorable attitude towards ICT integration in Gulu City's, although there is some variability in teachers' confidence and capacity to integrate ICT comprehensively across all subjects and student activities. Findings also revealed that few numbers of teachers possess ICT equipment like personal computer (PC) and also schools have few ICT infrastructures such as computers, projectors, internet connections and storage devices. All these affect comprehensives of integration of ICT in teaching and learning which is the basis of a CBC.

The issues of ICT integration were reported by 13, 14, 15 and 16 to be major problem across all schools in Gulu City as below: "*ICT infrastructure is still a major challenge in most schools in Gulu City ranging from availability of equipment, outdated and inefficient computers, interrupted internet services, interrupted power supply, few pieces of computers compared to high student enrolment, government policy which prevent students from using their personal ICT accessories at school.*

The assessment and evaluation practices in a CBC indicates a generally favorable perception with notable variations (Table 5). The highest agreement is seen with the statement that teachers always evaluate and assess learners in Activity of Integration (AOI), projects, end-of-year assessments, and continuous assessment items (CAI) based on standards, with 169 (97.7%) of teachers affirming this and only 3 (1.7%) disagreeing. Findings revealed that the challenge identified by the teachers is that it is still difficult for some of them in constructing scenario-based questions and scoring them. Also, for project works, findings revealed challenge of project identification, scoring of project and late circulation of project themes by UNEB for all the current S.3 which was just done in term 3 but rather was supposed to be done in term 1 2024.

Training on evaluation and assessment criteria for the CBC is also highly recognized, with 160 (92.5%) agreement and a minimal 6 (3.5%) disagreement.

Additionally, the ability to report learners' achievements to stakeholders is well-supported, with 162 (93.6%) agreement, while only 4 (2.3%) disagreed. However, there is a slight decrease in agreement regarding the simplicity and ease of performing evaluation and assessment criteria, with 150 (86.7%) finding it simple and easy, but 15 (8.7%) expressing disagreement. During interaction with the teachers, some teachers expressed difficulties in interpreting learner achievement to stakeholders as per the new format of assessment.

The effectiveness in scoring students' AOI and end-of-year assessments also garners strong support, with highest number of the respondents agreeing to being effective in this task. The average agreement across all statements is 160 (93.0%), indicating an overall strong positive perception of assessment and evaluation practices within the curriculum. Disagreement remains minimal throughout, suggesting consistency in the evaluation practices, yet there is a slight variation in perceived ease and effectiveness.

Despite all these achievements, assessment is also facing gaps especially in developing and scoring standard activity of integration, identification and scoring of students' projects, using the checklist for continuous assessments among others.

Respondent 3 reported; "*Although training on assessment has been carried out, teachers still face gaps in reporting assessment results to stakeholders, concerting and forwarding assessment marks to UNEB and finally grading learners as per the new format of the competency-based curriculum of A, B, C, D, E*, and *X.* Hence, this affects the level of implementation of assessment. This implies that other learners will be individually affected by grading due to wrong transfer of marks done by the teacher hence, the learner ability will not be properly assessed.

4.4 Relationship between CPD of Teachers and implementation of the LSC in Gulu City.

Table 6 Table: Descriptive Statistics on Status of CPD for teachers in secondary schools in Gulu City

	N	Mean	Std. Deviation
Inservice Training	173	3.820	0.1900
Seminars and Workshops	173	4.080	0.1280
Teachers' Mentorship	173	3.420	0.0200
Team Teaching	173	4.299	0.7077
AVERAGE	173	3.905	0.2614

Source: Primary data, 2024

The descriptive statistics on the status of CPD in secondary schools in Gulu City show varied levels of engagement in different CPD activities (Table 6):

In-Service training scored Mean = 3.820, Standard Deviation = 0.1900. This indicates that teachers agree (since the mean is close to 4.00 on a 5-point Likert scale) that in-service training is being provided and accessed. The low standard deviation shows very little variation in responses, suggesting a consistent experience of in-service training across teachers.

Seminars and Workshops scored the values for mean = 4.080, Standard Deviation = 0.1280. The mean is above 4.00, indicating that respondents strongly agree that seminars and workshops are a common and effective form of CPD. The very low standard deviation confirms that responses were highly uniform, reflecting a general consensus on the accessibility and usefulness of these seminars and workshops.

Teachers' Mentorship scores were mean = 3.420, Standard Deviation = 0.0200. The mean shows that teachers moderately agree that mentorship programs exist, although the value is relatively lower than other CPD forms. The extremely low standard deviation indicates almost no variation, meaning nearly all respondents had similar views suggesting either limited mentorship opportunities or uniformly average experiences.

Team Teaching had the mean = 4.299, Standard Deviation = 0.7077. This is the highest mean among all the variables, implying that teachers strongly agreed that team teaching is widely practiced and valued. However, the higher standard deviation (compared to others) shows considerable variation in responses. Some teachers may have had more positive experiences than others, indicating inconsistent implementation across schools.

Table 7: Descriptive Statistics on the level of implementation of LSC in Gulu City

	N	Mean	Std. Deviation
ICT Integration	173	3.551	0.0446
Instructional Materials	173	3.653	0.0875
Preparation of Teaching using participatory Teaching Method	173	4.117	0.3516
Assessment and Evaluation	173	4.253	0.2272
AVERAGE:	173	3.894	0.1777

Source: Primary data, 2024

The level of the implementation of the LSC in Gulu City was determined as follows (Table 7):

The mean score for ICT integration is 3.551, with a very low standard deviation of 0.0446. This suggests that most teachers moderately agree that ICT tools are being integrated into the teaching and learning process. While the mean is slightly below 4.0, it still reflects a relatively positive uptake of ICT, although there is room for improvement. The low standard deviation indicates uniform responses, implying that the level of ICT integration is consistent across schools. However, the moderate mean also suggests that challenges such as inadequate ICT infrastructure, insufficient training, or limited access to devices might be hindering full integration.

This dimension recorded a mean of 3.653, also reflecting general agreement that adequate instructional materials are being used to support the new curriculum. The standard deviation is 0.0875, which again points to minimal variability among respondents' views. This consistency suggests that most schools have access to curriculum-aligned teaching materials, although the

score is still below 4.0, indicating that there could be gaps in supply, utilization, or accessibility of materials such as textbooks, teacher guides, and learning aids.

This item yielded a higher mean of 4.117, which indicates that teachers strongly agree they are adopting participatory teaching approaches, such as group work, projects, and learner-centered activities, as prescribed by the LSC. However, the standard deviation is 0.3516, the highest among all the variables, pointing to greater variability in responses. This implies that while many teachers are implementing participatory methods, others may still rely on traditional approaches, likely due to large class sizes, lack of training, or time constraints. It shows a partial implementation that may be influenced by contextual factors such as teacher capacity or school-level support.

With a mean of 4.253, assessment and evaluation score the highest, showing that teachers very strongly agree they are effectively carrying out continuous assessment, end-of-year exams, and competency-based evaluations as per the curriculum guidelines. The standard deviation of 0.2272 is moderate, indicating some differences in responses across schools, but still within an acceptable range of consistency. This finding reflects a relatively successful implementation of assessment practices under the LSC, possibly due to focused training in this area or strong emphasis from the Ministry of Education and Sports on tracking learning outcomes.

Table 8: Relationship between CPD of Teachers and implementation of the CPD in Gulu City

Correlations

		CPD	Implementation of LSC
Continuous Professional Development of teachers (CPD)	Pearson Correlation	1	0.796**
	Sig. (2-tailed)		0.000
	N	173	173
Implementation of lower secondary curriculum (LSC)	Pearson Correlation	0.796**	1
	Sig. (2-tailed)	0.000	
	N	173	173

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

Presentation in the table above shows the relationship between CPD of teachers and implementation of LSC in Gulu City (Table 8).

The Pearson correlation coefficient between CPD and implementation of LSC is 0.796, with a significance value of p = .000. This means there is a strong, statistically significant positive relationship between teachers' participation in CPD activities and the effective implementation of the Lower Secondary Curriculum in Gulu City.

Table 9: Model Summary

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.796[a]	.634	.631	.2280	.634	296.31	1	171	0.000

a. Predictors: (Constant), CPD of teachers

The model reveals a strong positive linear relationship (R = .796) between CPD and LSC implementation. R Square = .634 indicates that 63.4% of the variance in the implementation of the Lower Secondary Curriculum is explained by CPD. The Adjusted R Square (.631) accounts for sample size, confirming the model's reliability. The F Change = 296.31 is statistically significant (p < .001), suggesting that CPD is a significant predictor of LSC implementation.

This means enhancing CPD significantly boosts the implementation of the Lower Secondary Curriculum in Gulu City.

Table 10: ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	29.093	1	29.093	0.000
	Residual	16.793	171	0.0982	
	Total	45.886	172		

a. Dependent Variable: Implementation of LSC
b. Predictors: (Constant), CPD of teachers.

The ANOVA table 10 shows that the regression model is statistically significant, $F(1, 171) = 296.31$, $p < .001$. This means that the model significantly predicts the implementation of the LSC through CPD of teachers. Therefore, since $p < 0.001$, the contribution of CPD to the prediction of LSC implementation is highly significant.

This implies that investing in teachers' CPD substantially improves curriculum implementation outcomes in secondary schools in Gulu City.

Chapter Five: Discussion of Results, Conclusions, and Recommendations

5.0 Introduction

Chapter Five presents a comprehensive discussion of the findings from the study on CPD of teachers and its influence in the implementation of LSC in Gulu City. This chapter delves into the status of CPD of teachers in lower secondary schools in Gulu City, the level of implementation of LSC in Gulu City and the relationship between CPD of teachers and implementation of the LSC in Gulu City and provides conclusions and recommendations based on the results.

5.1 Discussion

5.1.1 Status of CPD of teachers in lower secondary schools in Gulu City

The findings of this study show that CPD is an active part of teacher growth in lower secondary schools in Gulu City, although its implementation is uneven across different schools and CPD components. Teachers engage in several CPD activities, including in-service training, seminars and workshops, mentorship, and team teaching. These efforts reflect a growing recognition of the importance of CPD in improving teaching practice, but significant challenges remain in terms of access, support, and institutional commitment.

In-service training is a major avenue through which teachers in Gulu City improve their instructional skills and content knowledge. Teachers widely acknowledged that they participate in short courses organized either by their schools or external education bodies. This mirrors the findings of Nasreen and Odhiambo (2018), who found that short-term training activities such as workshops and short courses were the most frequent forms of professional learning among school principals in Pakistan. However, while principals in that study expressed mixed feelings about the effectiveness of longer-term training and collaborative practices, teachers in Gulu seem

more inclined toward activities that are flexible and practically relevant, particularly in-service training that does not disrupt their teaching schedules.

However, institutional support for in-service training differs significantly across schools. Some schools actively facilitate and fund teacher participation in these trainings, while others rely on individual teachers to find their own opportunities, often without financial assistance. This variation highlights a systemic gap in how CPD is supported across schools, a concern also raised in the work of Mekonnen (2014), who reported that inadequate financial support limits teacher participation in CPD programs in Ethiopian secondary schools.

Seminars and workshops are another central feature of CPD in Gulu City. Teachers widely perceive them as practical, timely, and useful for their classroom practice. Many of these workshops are facilitated by national and regional education bodies such as the Uganda National Examinations Board (UNEB), National Curriculum Development Centre (NCDC), and subject-based groups like SESMAT. This is consistent with Macheng's (2016) study in Botswana, which emphasized the need for coaching, mentoring, peer observation, and lesson study as essential CPD strategies for teacher development. The enthusiasm among teachers for these workshops underscores their relevance, especially in light of the changing curriculum and evolving assessment methods.

However, not all schools provide equal access or support for participation in these events. While some headteachers encourage and even budget for attendance, others do not prioritize CPD, leaving teachers to self-fund or miss out. Similar obstacles were identified by Makhbuba (2022) in Uzbekistan, where teachers cited financial barriers and scheduling conflicts as key impediments to attending professional development programs.

Mentorship presents a more mixed picture. Some schools have organized systems where experienced teachers support newer colleagues, offering guidance on instructional techniques, classroom management, and curriculum implementation. In schools where this structure exists, teachers feel more supported and professionally connected. However, the implementation of mentorship programs is inconsistent. In some departments, especially where there is only one subject teacher, mentorship is difficult to implement due to lack of personnel or high staff turnover. These challenges reflect the findings of Okumu et al. (2021), who found that although mentoring has the potential to foster professional growth, mentors in some Ugandan schools were not adequately engaged in guiding mentees. In Gulu City, similar concerns were raised about mentors being too busy or ill-prepared to offer meaningful support.

Moreover, the benefits of mentorship are often dependent on the school leadership's attitude and commitment. In institutions where leadership is proactive, mentorship is integrated into departmental activities. Where this is not the case, teachers are left to navigate their professional growth on their own. This is in contrast to the ideal model proposed by Macheng (2016), where mentoring is viewed as a structured, ongoing strategy within school-based CPD.

Team teaching stands out as one of the most positively received CPD strategies in Gulu City. Teachers widely noted that collaborative teaching helps them better understand complex content, share effective teaching strategies, and improve classroom delivery. This method aligns with the Competency-Based Curriculum (CBC), which promotes collaboration and experiential learning among both teachers and students. The study by Cirocki and Farrell (2019) supports this approach, indicating that school-based and collaborative CPD activities tend to be more impactful than those conducted in isolation. In the Gulu context, team teaching also enhances

peer learning, reduces the burden on individual teachers, and creates a more supportive professional environment.

Nonetheless, not all schools have institutionalized team teaching. While some have integrated it into departmental routines and timetables, others use it only sporadically or not at all. The difference often lies in administrative support and the culture of collaboration within the school. Schools with strong leadership and a collegial staff environment are more likely to embrace and sustain such practices.

At the system level, school inspectors and administrators highlighted the lack of dedicated funding from the central government as a major constraint in implementing consistent CPD programs. While inspectors recognize the importance of CPD, their ability to enforce or expand these initiatives is limited by resource shortages. This observation is consistent with findings by Mekonnen (2014) and Makhbuba (2022), both of whom noted that without adequate funding and administrative coordination, CPD efforts remain fragmented and often inaccessible to the majority of teachers.

5.1.2 The level of implementation of lower secondary school curriculum in Gulu City

The implementation of the Lower Secondary Curriculum (LSC) in Gulu City demonstrates varied progress across schools, with both achievements and gaps evident in several areas. These include the integration of ICT, availability and use of instructional materials, adoption of participatory teaching methods, teacher preparation, and the application of assessment practices.

The study revealed a growing integration of ICT in educational practices such as lesson planning, delivery, assessment, research, and information management. This observation is supported by Coast (2019) and Ayemhenre & Okolo (2019), who assert that ICT plays a transformative role in curriculum implementation by enhancing interactivity and access to knowledge. Despite the

increasing use of ICT in some schools, disparities remain in its consistent application, pointing to the need for continued investment in teacher training and ICT infrastructure to fully harness its benefits in all schools.

Regarding instructional materials, the findings suggest that while many schools have access to essential teaching aids, their effective use in the classroom remains inconsistent. Muhwezi et al. (2022) emphasize that the presence of instructional materials alone does not guarantee successful curriculum delivery unless teachers are adequately guided on how to integrate them meaningfully into lessons. This highlights a need for pedagogical support to maximize the potential of teaching resources to enrich learning.

Participatory teaching methods are being implemented to a certain extent, though not uniformly across classrooms. Bowles, Radford, and Bakopoulou (2018) advocate for participatory approaches as central to learner-centered education, improving both student engagement and learning outcomes. The limited application of such methods in Gulu City schools may stem from challenges such as large class sizes, limited training, or persistent reliance on teacher-centered practices, all of which need to be addressed to improve learner participation.

Teacher preparation in areas such as scheme of work development and lesson planning shows moderate consistency. Ainsworth (2019) underscores the value of structured preparation, noting that well-prepared teachers are more effective in delivering curriculum content. However, the evidence from Gulu suggests that not all teachers are consistently engaging in these preparatory tasks, pointing to the necessity for strengthened support and accountability mechanisms to ensure effective instructional planning.

Assessment practices are present but vary in terms of structure and implementation. Maben (2019) notes that formative and performance-based assessments aligned with curriculum goals

are crucial for measuring learner progress and guiding instruction. In Gulu City, assessments are evolving to focus on what learners can do with the knowledge they acquire rather than solely what they know, a shift consistent with the aims of the new curriculum. However, the inconsistency in assessment application across schools indicates a need for clearer guidelines and professional development to support uniform and meaningful evaluation practices.

5.1.3 The relationship between CPD of Teachers and implementation of the LSC in Gulu City

The study revealed a clear and positive association between Continuous Professional Development (CPD) of teachers and the successful implementation of the Lower Secondary Curriculum (LSC) in Gulu City. Teachers who actively participate in CPD activities tend to be better equipped to apply the principles and practices of the revised curriculum. This aligns with research that highlights CPD as a cornerstone for effective curriculum delivery and instructional improvement.

Findings indicate that when teachers engage in ongoing learning opportunities such as workshops, in-service training, and collaborative planning, they are more likely to embrace learner-centered methodologies, incorporate formative assessments, and effectively utilize curriculum-aligned materials. Polly et al. (2015) supports this observation, showing that sustained professional development enhances teachers' instructional practices and directly influences curriculum coverage and student learning outcomes. In their study, improvements in teaching practices were linked to better student achievement, highlighting the importance of developing teachers' content knowledge and pedagogical strategies.

Similarly, Mooney Simmie (2007) underscores the positive outcomes of collaborative teacher development approaches, such as Teacher Design Teams (TDTs). When teachers are directly involved in co-creating and reflecting on instructional materials, their engagement in the

curriculum deepens, and their classroom practices become more innovative and aligned with curriculum goals. This finding supports the notion that CPD is not only about training sessions but about creating professional communities where teachers take ownership of curriculum change.

While the context of Melesse and Gulie (2019) was different geographically, their findings reinforce the value of CPD by showing that teachers perceive these programs as relevant to curriculum implementation. Though their study found no significant statistical difference between expectations and implementation levels, teachers generally viewed CPD as a key driver of instructional quality. These perceptions align with the experiences of teachers in Gulu City, who recognize that CPD enhances their confidence and competence in implementing curriculum reforms.

Moreover, the findings suggest that CPD contributes to building teachers' ability to conduct assessments aligned with the competencies emphasized in the new curriculum. Teachers who are regularly trained and supported are more likely to use diverse assessment tools that measure not just what students know but also what they can do—an essential shift from the traditional knowledge-based assessments to performance-based evaluations. This transformation is particularly crucial in the context of the new LSC, which prioritizes skills application, creativity, and problem-solving.

5.2 Conclusions

The study concluded that the CPD initiatives such as seminars and workshops, in-service training and team teaching are being practiced and largely appreciated in Gulu City. However, there is a need to strengthen mentorship programs and ensure equity in team teaching opportunities across schools for improved teacher professional growth.

The study concluded that there is high level of implementation of the LSC in Gulu City, with strong emphasis on learner-centered teaching and effective assessment methods. However, for full and equitable implementation, targeted support is needed in enhancing ICT integration and ensuring the availability and proper utilization of instructional materials.

Lastly, the study concluded that there is a strong, statistically significant positive relationship between teachers' participation in CPD activities and the effective implementation of the Lower Secondary Curriculum in Gulu City. This implies that as CPD increases, the level of curriculum implementation also improves.

5.3 Recommendations

1) The government, development partners, communities should mobilize funding for effective implementation (purchase of scholastic materials, recruitment and training of teachers, ICT infrastructures, classroom construction among others).

2) Respective school administrations should organize frequent capacity building and refresher courses on LSC implementation termly.

3) The government through the MoES should develop a tracking system for monitoring effective implementation of LSC both at district and national level.

5.4 Areas of further studies

1. Teachers' Motivation and implementation of lower secondary school curriculum in Gulu City
2. Parents' involvement and implementation of lower secondary school curriculum in Gulu City
3. Team teaching and implementation of lower secondary school curriculum in Gulu City
4. ICT integration and Implementation of lower secondary school curriculum in Gulu City
5. School Preparedness and implementation of lower secondary school curriculum in Gulu City

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APPENDICES:

Appendix I: Questionnaire to the teachers

(Adopted from the literatures reviewed)

Dear Respondent,

My name is Okumu Benjamin, a student of Gulu University pursuing a course leading to the award of a Master degree in Education of Curriculum Studies. As part of the research requirements for the award, I am undertaking research on; "Continuous Professional Development of Teachers and Implementation of Lower Secondary Curriculum in Gulu City."

I am convinced that you can be a resourceful person to help to fill in this questionnaire for the purpose of this research. The information obtained from you is solely for academic purpose and will be treated with utmost confidentiality. I therefore request you to spare a few minutes of your busy schedules to fill in this questionnaire to enable me accomplish this task. Your honest and sincere contribution is highly appreciated.

Thanks in advance.

……

Benjamin Okumu

Reg. No: U/22/1595/MFC/PS

Phone: 0772579931

Section A: Background information

1. Sex: Male ☐ Female ☐

2. Age bracket:

i) Below 20 yrs ☐ ii) 20-24☐ iii) 25-29☐ iv) 30-34☐ vi) 35-39☐

vii) 40-44 ☐ viii) 45-49☐ ix) 50-54☐ x) 55 and above ☐

3. Marital status:

i) Single☐ ii) Married☐ iii) Divorced ☐ iv) Separated ☐ v) Widowed ☐

4. Highest education qualification

i) PhD☐ ii) Master ☐ iii) Post graduate ☐ iv) Graduate ☐ v) Diploma ☐

5. Subject field (Specify): …….....

6. Teaching experience (in years)

i) 1-5☐ ii) 6-10 ☐ iii) 11-15 ☐ iv) 16-20☐ v) 21 and above years☐

Section B: The status of continuous Professional Development of Teachers

Using the key given, tick the right alternative that fits your opinion on the status of continuous Professional Development of Teachers in your school:

Key: 5 - Strongly Agree (SA) 4- Agree, (A) 3 - Not Sure,(NS) 2- Disagree(D) and 1 – Strongly Disagree(SD).

B	**Teachers' Continuous Professional Development**					
IT	***In-service training***	**SA**	**A**	**NS**	**D**	**SD**
1	I have ever attended in-service training for my professional development					
2	The school administration allows me to go for long in-service training for my professional development					
3	I have ever been facilitated by my school to go and have my professional training					
4	I have so far attended many in-service trainings					
5	All my in-service trainings are in line with my profession					
6	The training I attended are in line with my day-to-day work					
SW	**Seminars and Workshops**					
1	I have attended many seminars and workshops in my profession					
2	All the workshops and seminar I attended are in line with my teaching profession					
3	My school always support me for the seminars and workshops					
4	I gained knowledge and skills in the seminars and workshops that I attended					
5	I am always kept up to date in my profession through the seminars and workshops					
TM	***Teachers' Mentorship***	**SA**	**A**	**NS**	**D**	**SD**
1	My school has teachers' mentorship program					
2	I have benefited from our teachers' mentorship program					
3	I have a teacher mentor who continuously guide me in my profession					
4	I am more updated in my profession through the help of my mentors					
5	My mentor is very experienced, professional and skilled enough to support me					
TT	***Team teaching***	**SA**	**A**	**NS**	**D**	**SD**
1	My school has in place team teaching program					
2	I have ever been supported by departmental members					
3	I gained a lot of experience and knowledge through team teaching					
4	The team teaching helps me to understand difficult concepts					
5	Team teaching has helped to improve on my teaching performance					

1. How do your school organize for teachers' continuous professional development? …… …….
2. In your view, what do you say about the status of teachers' continuous professional

development? ……... ……..……
……

Section C: Curriculum Implementation

C	**Curriculum Implementation**					
PT	**Preparation for teaching**	**SA**	**A**	**NS**	**D**	**SD**
1	I always prepare scheme of work relevant to the CBS					
2	I always prepare lesson plan for teaching					
3	I use observation checklist for assessment of psychomotor and affective skills					
4	I prepare activities to be done for the learners during classroom interaction					
5	I improvise the needed teaching materials for the lesson					
PTM	**Participatory Teaching Methods**					
1	I always use cooperative learning methods when teaching in class					
2	I use project-based learning method for developing innovation					
3	I find that the self-discovery teaching method is appropriate for me when teaching					
4	I use inquiry-based learning when teaching					
5	I use learners-centered methods in my teaching					
IM	***Instructional materials***	**SA**	**A**	**NS**	**D**	**SD**
1	My school provides enough teaching materials for my learners					
2	I am able to effectively connect all the curriculum materials during teaching and learning					
3	My learners can easily access the instructional materials for learning					
4	I can easily access the instructional materials at anytime					
5	The instructional materials are appropriate to the learners' level					
ICT	***ICT Integration***	**SA**	**A**	**NS**	**D**	**SD**
1	I always integrate ICT in my daily teaching					
2	I have received training on ICT integration					
3	I have knowledge of the use of a variety of ICT materials in my teaching process					
4	I can apply ICT knowledge in teaching all the topics in my subject					
5	I can easily guide my students to use various ICT devices for research and class activities					
EA	***Assessment and Evaluation***	**SA**	**A**	**NS**	**D**	**SD**
1	I always evaluate and assess my learners in Activity of Integration (AOI), projects, end of year and continuous assessment item (CAI) basing on the standards					
2	I have been trained on evaluation and assessment criteria for Competency based curriculum					
3	I can report learners' achievements to stakeholders					
4	Evaluation and assessment criteria are simple and easy to perform					
5	I can effectively score students' AOI and end of year assessment					

1. Which area of the new LSC would you like the Continuous Professional Development to be conducted on?

Appendix II: Interview Guide for head teachers

Dear Respondent,

My name is Okumu Benjamin, a student of Gulu University pursuing a course leading to the award of Master degree in Education of Curriculum Studies. As part of the research requirements for the award, I am undertaking research on; "Continuous Professional Development of Teachers and Implementation of Lower Secondary Curriculum in Gulu City."

I am convinced that you can be a resourceful person to answer this interview guide for the purpose of this research. The information obtained from you is solely for academic purpose and will be treated with utmost confidentiality. I therefore request you to spare a few minutes of your busy schedules to attend to me and answer these interview questions to enable me accomplish this task. Your honest and sincere contribution is highly appreciated.

1. In your own understanding, give the status of teachers' Continuous Professional Development in terms of availability, implementation and effectiveness in your school
2. What is the status of teachers' continuous professional development in terms of the following:
    a. In-service training
    b. Seminars and workshops
    c. Teachers' mentorship
    d. Team teaching
3. How often do you have teachers' continuous professional development for your teachers? (Termly or yearly)
4. How many teachers on average have received training on the new LSC from your school?
5. In your own understanding, state the implementation level of lower secondary school curriculum in your school in terms of
    a. Lesson planning
    b. Scheme of work
    c. ICT integration

d. Instructional material

e. Assessments and evaluations through project work, AOI, End of year cycle and Continuous Assessment Item (CAI).

6. What effects does teachers' continuous professional development have on implementation of the new LSC?
7. What are the challenges facing your school in the implementation of the new LSC?
8. What measures has your school taken to ensure effective implementation of the new LSC?
9. Which area of the new LSC would you need your teacher to have CPD on?
10. How can teachers' continuous professional development be improved for effective implementation of the new LSC?

Thanks for your time and positive responses.

Appendix III: Interview Guide for Inspectors of Schools

Dear Respondent,

My name is Okumu Benjamin, a student of Gulu University pursuing a course leading to the award of Master degree in Education of Curriculum Studies. As part of the research requirements for the award, I am undertaking research on; "Continuous Professional Development of Teachers and Implementation of Lower Secondary Curriculum in Gulu City."

I am convinced that you can be a resourceful person to answer this interview guide for the purpose of this research. The information obtained from you is solely for academic purpose and will be treated with utmost confidentiality. I therefore request you to spare a few minutes of your busy schedules to attend to me and answer these interview questions to enable me accomplish this task. Your honest and sincere contribution is highly appreciated.

1. What professional development opportunities are available for teachers for implementing the new lower secondary curriculum in Gulu City?
2. How effective is the new LSC being implemented in secondary schools in Gulu City?
3. What are the practices in place to enable teachers to share their feedback on the implementation of the new LSC
4. What are the strategies in place for monitoring the implementation of this new LSC in Gulu City
5. What are the challenges reported on the implementation of this new LSC in Gulu City? How are these challenges being overcome by schools?
6. What strategies are in place to popularize the effective implementation of this new LSC in Gulu City?

Thanks for your time and positive responses.

Appendix IV: Sample size determination procedure using: Glend, D. Israel 1992

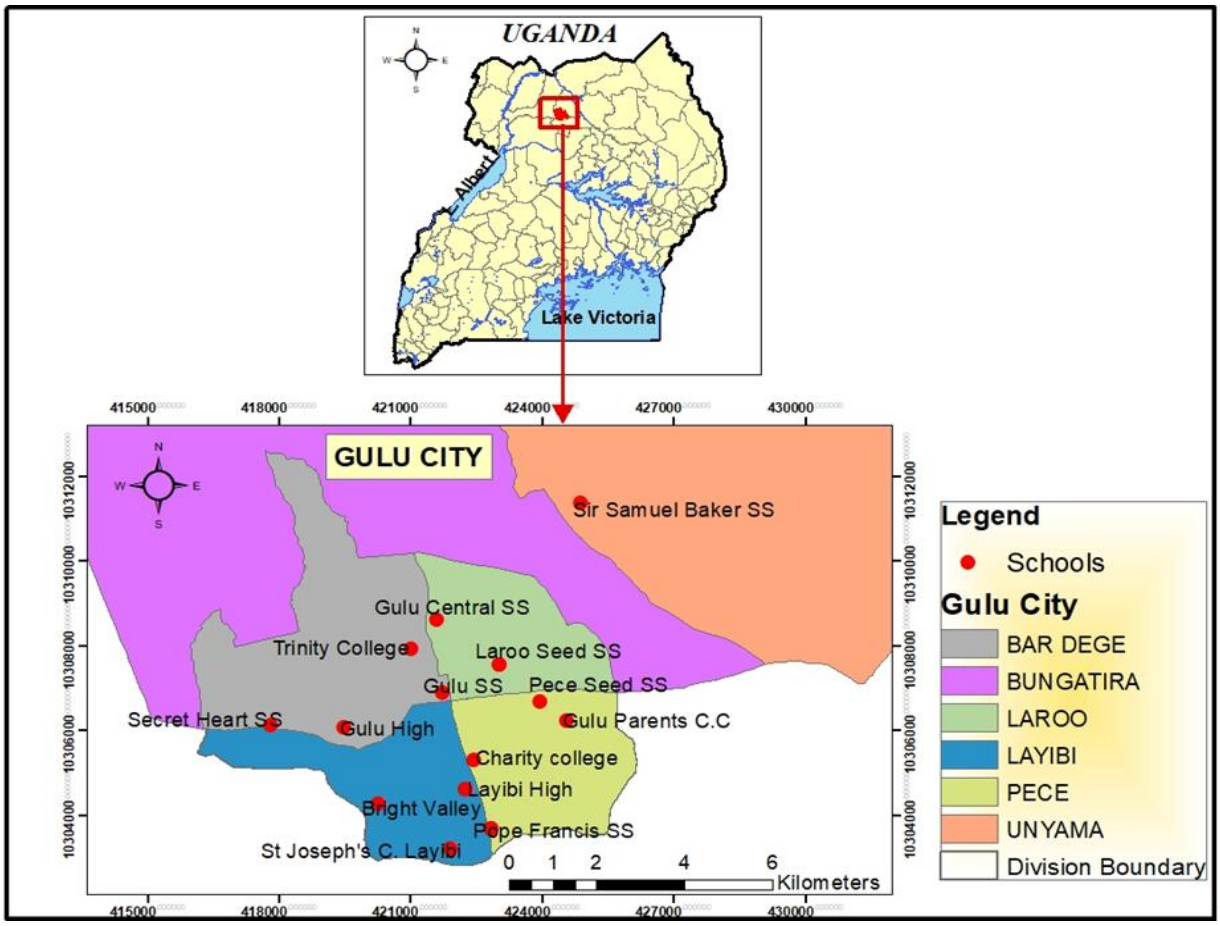
Size of Population	Sample Size (n) for Precision (e) of:			
	±3%	±5%	±7%	±10%
500	A	222	145	83
600	A	240	152	86
700	A	**255**	158	88
800	A	267	163	89
900	A	277	166	90
1,000	A	286	169	91
2,000	714	333	185	95
3,000	811	353	191	97
4,000	870	364	194	98
5,000	909	370	196	98
6,000	938	375	197	98
7,000	959	378	198	99
8,000	976	381	199	99
9,000	989	383	200	99
10,000	1,000	385	200	99
15,000	1,034	390	201	99
20,000	1,053	392	204	100
25,000	1,064	394	204	100
50,000	1,087	397	204	100
100,000	1,099	398	204	100
>100,000	1,111	400	204	100

Note. N* = Population; S=sample size.

Appendix V: The number of teachers sampled in the 28 secondary schools in Gulu city

SCHOOLS (CODE)	Total number of teachers	Sample size
A1	22	2
A2	33	3
A3	96	10
A4	43	4
A5	62	6
A6	24	2
A7	33	3
A8	76	8
A9	17	2
A10	15	2
A11	20	2
A12	30	3
A13	15	2
A14	13	1
A15	13	1
A16	13	1
A17	25	3
A18	14	2
A19	16	2
A20	12	1
A21	13	1
A22	12	1
A23	25	3
A24	14	1
A25	15	2
A26	11	1
A27	16	2
A28	12	1
	710	**72**

Appendix VI: Map of Gulu City showing area of study



Source: Showing area of study (Source: Geographical Information Science generated map using UBOS shape files of 2020).