ASSESSMENT OF EFFECT OF PUPIL-TEACHER RATIO ON EFFECTIVENESS OF COMPETENCE BASED CURRICULUM FOR PUBLIC PRIMARY SCHOOLS: A CASE OF TUNDURU DISTRICT COUNCIL

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION IN CURRICULUM DESIGN AND DEVELOPMENT

DEPARTMENT OF CURRICULUM AND INSTRUCTION

THE OPEN UNIVERSITY OF TANZANIA

2024

CERTIFICATION

The undersigned confirms that they have reviewed and now recommend for approval by the Open University of Tanzania the dissertation titled "An Assessment of Pupil-Teacher Ratio on the Effectiveness of the Competence-Based Curriculum for Public Primary Schools," submitted in partial fulfillment of the requirements for the Master of Education degree in Curriculum Design and Development at the Open University of Tanzania.

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Date

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DECLARATION

I, **Clara Soko**, affirm that the work presented in this dissertation is my original work and has not been submitted to any other university or institution. All sources of external work have been properly cited. I confirm that this dissertation is entirely my own. It is submitted in partial fulfillment of the requirements for the Master of Education in Curriculum Design and Development (MED-CDD).

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Signature

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Date

DEDICATION

This work is dedicated to my beloved father, Mr. John HansiSokofor his advice and valuable contribution to my work, my late mother, Shanny A. Mwalalikafor the ethereality support, and my lovely son, Mark R. Mbambewho, has been there for me all the time.

ACKNOWLEDGMENT

First and foremost, I would like to express my sincere gratitude to Almighty God for guiding me through this academic journey and for His continuous grace and support throughout my studies. Every achievement is a testament to His guidance. I am deeply thankful to my supervisor, Dr. Marry Ogondiek, at the Open University of Tanzania. Her expert guidance, constant encouragement, and constructive feedback have been invaluable throughout my research and the writing of this dissertation. Her unwavering support has played a pivotal role in shaping this work. I also appreciate the ongoing support of the entire Curriculum Studies Department at the Open University of Tanzania. Special thanks go to Mr. Andrew Komba, the district coordinator for the Open University in Tunduru, for his instrumental role in facilitating my studies. His assistance provided me with the resources and motivation needed to succeed.

I would like to honour the memory of my late grandmother, Immaculata Ngonyani, whose wisdom and moral guidance have always inspired me. Her strong belief in the power of education motivated me to pursue my academic goals with determination. Thanks to my younger siblings, James, Catherine, and Castor Soko, for their constant encouragement and support throughout my studies. Their presence and companionship have been a source of strength. Finally, I sincerely thank the education officers, heads of schools, teachers, and ward education officers in Tunduru District for cooperating during the data collection process. Their willingness to share their insights and time made this research possible. Thank you all, and may God bless you abundantly.

ABSTRACT

This study aimed at assessing the impact of PTR on implementing CBC at Tunduru District. Specifically; To determine pupil teacher ratio effect on teachers workloads. To investigates pupil teacher ratio effect on evaluation method effectiveness and to establish the relationship between pupil teacher ratio and subject performance in public school. The study used a descriptive research design and the combined questionnaires. Data were analyzed using SPSS. Finding showed that PRT effect on teachers workload was high due to high number of pupil in the class, number of lesson and subject taught per teacher, again the finding revealed that high PRT have high effects on evaluation methods effectiveness. Moreover, the findings showed that there is very high relationship between PRT and subject performance. Lastly the study recommended that, government through TSD should employ more primary school teachers to deal with teachers shortage for successful implementation of CBC with minimum challenge.

Keywords: *Pupil Teacher Ratio, Statistical Package for School Scientists, Teacher Service Department and Competence Based Curriculum.*

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LIST OF ABBREVIATIONS

CBC	Competence-Based Curriculum
DEO	District Educational officer
NECTA	National Examination Council of Tanzania
OUT	Open University of Tanzania
PTR	Pupil Teacher Ratio
SPSS	Statistical Package for Social Sciences
STR	Stream Teacher Ratio
UNESCO	United Nations Educational, Scientific and Cultural Organization
WEO	Ward Educational officer

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE PROBLEM

1.1 Introduction

Chapter One lays the groundwork for the rest of the dissertation. It starts by providing the background to the problem, explaining its origins, and then presenting the problem statement. The chapter also outlines the study's general and specific objectives and highlights the significance of the research. Furthermore, it discusses the limitations faced during the study and concludes by defining the scope of the research. This introduction establishes the necessary context and prepares the reader for the following chapters.

1.2 Background to the Problem

Education is crucial in driving economic and social progress by providing individuals with the skills and competencies required to succeed in the global labour market. To keep pace with these demands, it is essential to update and evaluate curricula to ensure they remain relevant continually. The globalization of work calls for developing essential 21st-century skills, including critical thinking, creativity, collaboration, and digital literacy (UNESCO, 2024; World Bank, 2024).

Many countries have transitioned from traditional content-driven curricula to competency-based education (CBE) methodologies in response to these shifting needs. CBE emphasizes outcome-oriented learning and practical skills application, helping students acquire the knowledge and abilities to navigate complex, real-world challenges. Research highlights that this shift towards competency-based approaches

is key to focusing on measurable learning outcomes (Gonzalez & Garcia, 2024; Smith et al., 2023). As a result, various professional sectors and educational institutions worldwide have adopted CBE, recognizing its effectiveness in preparing students for the demands of the modern job market (Brown et al., 2023; Sanchez & Lee, 2021).

Recent studies underscore the importance of CBE in preparing students for the future. The World Economic Forum (2024) stresses that rapid technological advancements and changing job landscapes require educational systems to focus on competencies that enable students to adapt and thrive in diverse environments. The International Labour Organization (2023) also highlights the need for educational outcomes to align with industry expectations to ensure graduates possess the skills to succeed in an evolving job market. Moreover, research shows that competency-based education strategies increase student engagement and motivation, empowering learners to take ownership of their educational journeys (Johnson & Lee, 2024; Williams, 2022).

Given these global trends, many nations are revising their educational frameworks to incorporate competency-based curricula. This shift enhances the relevance and quality of education and aligns with international skills development standards. As countries aim to remain competitive in an interconnected world, adopting competency-based education is essential for cultivating an adaptable, innovative workforce prepared for future challenges (Miller & Thompson, 2022; White, 2023).

According to UNESCO (2024), the Competence-Based Curriculum (CBC) is an essential framework that helps countries equip their citizens with the skills, knowledge, and values needed to succeed in an increasingly dynamic global

environment shaped by technological advancements. Furthermore, UNESCO (2023) notes that CBC promotes practical and measurable learner engagement by focusing on skills development through learner-centred teaching methods. As a result, many countries have undertaken curricular reforms to align educational practices with key competencies and learning outcomes. Consequently, competency-based teaching and learning strategies have gained widespread support from various stakeholders in the global education sector.

However, despite these positive developments, empirical research indicates that several African countries implementing CBC face significant challenges that hinder its effective execution. For example, a study by Ndakalu et al. (2022) in Kenya revealed that while there were some positive outcomes, many training institutions struggled to implement the curriculum effectively due to inadequate infrastructure, insufficient funding, and a lack of clear institutional policy guidelines. Similarly, research by Mugabo et al. (2023) in Rwanda identified several key issues affecting CBC implementation, such as inadequate teacher training, inequities in access to professional development, a shortage of teaching resources, and limited school infrastructure. Furthermore, a study by Ndemanga et al. (2024) emphasized that teachers often face difficulties in adapting to competency-based frameworks due to unclear curriculum objectives and insufficient support from education authorities.

Recent studies have highlighted persistent challenges in implementing CBC in Rwandan schools. For example, research by Nsimba et al. (2023) found that despite comprehensive training for primary school teachers on the new curriculum, many educators resisted change and continued using outdated teaching materials and

traditional methods. Moreover, Nsimba et al. (2023) pointed out that the lack of adequate teaching and learning resources remains a significant barrier to implementing CBC. This underscores the need for sufficient instructional materials and ongoing professional development to help educators embrace CBC and integrate it effectively into the education system.

Further supporting this view, research by Ndayambaje et al. (2024) highlights the importance of continuous training and resource allocation to foster an environment conducive to the practical application of competency-based approaches. The commitment to improving teacher training and resource availability will be crucial in overcoming these challenges and ensuring the successful implementation of CBC.

Substantial educational policy reforms have been made in Tanzania, including free education for primary and secondary schools. One of the key reforms is the transition from a content-based curriculum to a competency-based curriculum (CBC), designed to improve the quality of education. CBC focuses on equipping students with practical life skills and assessing their mastery of competencies necessary for functioning effectively in society (Mugabo et al., 2023; Rwegoshora et al., 2024). As Ndayambaje et al. (2024) note, CBC emphasizes developing learners' abilities to acquire knowledge, engage in learning processes, and collaborate effectively with others. The focus on competencies underscores the importance of evaluating learning outcomes rather than simply delivering a predetermined set of content (Ndemanga et al., 2022; Mwinshehe& Njeru, 2023). This shift towards a Competence-Based Curriculum (CBC) aims to create a more dynamic learning environment, preparing

students with the necessary skills to succeed in an increasingly competitive global landscape.

Ndakalu et al. (2022) stress that the success of CBC implementation depends mainly on teachers' understanding and expertise. They argue that the effectiveness of the competency-based approach is contingent upon teachers' ability to deliver relevant and impactful education. Similarly, Nsimba et al. (2023) highlight that qualified teachers with the necessary knowledge and skills are crucial for successfully integrating CBC. Ongoing capacity building through pre-service and in-service training is essential to ensure teachers are adequately prepared to embrace and implement new teaching methodologies (Lugoba&Nyang'oro, 2022). Mkoma et al. (2023) further emphasize the importance of providing adequate teaching and learning resources, as these significantly impact the effectiveness of CBC implementation. In addition, Alele et al. (2024) found that administrative support, including strong leadership and effective resource allocation, plays a vital role in helping teachers transition to competency-based approaches.

Introducing free education policies in Tanzania has posed significant challenges to implementing CBC effectively. Research shows that removing school fees has substantially increased primary school enrollment, making education accessible to more children (Mkwawa et al., 2023). This surge in enrollment, which saw over 7 million children joining primary schools by 2005 (UNICEF, 2024), has put considerable strain on existing educational resources, such as classrooms, teaching materials, and qualified teachers, making it challenging to implement CBC

effectively. The growing number of students has exacerbated issues like overcrowded classrooms, which hinder the adoption of student-centred teaching methods central to CBC (Rwegoshora et al., 2024).

The increase in primary school enrollment is evident, with net enrollment rates rising from 66% in 2018 to over 97% in 2019 (Mkwawa et al., 2024). However, this surge has also intensified challenges related to pupil-teacher ratios, which are a critical factor in determining the quality of education. The World Bank (2023) reported pupil-teacher ratios ranging from 50 to 76 in 2017, and figures continued to rise in subsequent years, reaching 1:60 by 2019. In some regions, ratios peaked at 1:71 to 1:79 in 2020 (Kigunda&Shayo, 2023), far exceeding the government's target of a 1:40 ratio set between 2001 and 2006. As of recent data, the pupil-teacher ratio in Tanzania stands at 1:51 (Global Economy, 2024), highlighting the urgent need to address staffing shortages within the education system.

The high pupil-teacher ratio restricts teachers' ability to provide individualized attention, undermining the principles of learner-centred education that CBC seeks to promote. This presents a significant barrier to implementing the CBC, which aims to improve educational quality by focusing on competencies. Given these challenges, this study was initiated to assess the impact of the pupil-teacher ratio on the effectiveness of CBC implementation.

1.3 Statement of the Problem

Tanzania's high Pupil-Teacher Ratio (PTR) presents a significant barrier to successfully implementing the Competence-Based Curriculum (CBC). This

imbalance leads to subpar teaching and learning quality, which impedes students' ability to develop the necessary competencies to succeed in the labour market (Kimario, 2022). With an average of 40 students per teacher (Ministry of Education, 2023), the situation is exacerbated by limited educational resources. Overcrowded classrooms, reduced individual attention for students, and decreased teacher morale are direct consequences (Ndabakurane, 2024). As a result, students struggle to access quality education, preventing them from acquiring vital skills needed to compete in a competitive job market (Mutale &Malambo, 2021). Depressed and demotivated teachers face declining job satisfaction and high turnover rates, further compromising instruction quality (Ashioya, 2022). Parents have expressed growing concerns about their children's future due to the inadequacies of the current educational system.

If these challenges are not addressed, Tanzania risks producing graduates who lack the skills and competencies required by the workforce. This could exacerbate unemployment, hinder economic growth, and perpetuate poverty (Rittenour, 2023). Furthermore, the country may struggle to achieve its development goals, affecting the socio-economic well-being of its citizens. Despite government initiatives aimed at improving the education sector, such as the Teacher Education Development Program (TEDP), Secondary Education Quality Improvement Project (SEQIP), Education Sector Development Plan (ESDP), and the Education and Training Policy (ETP) introduced in 2020, issues related to PTR have not been adequately prioritized. The impact of PTR on the implementation of CBC remains unexplored mainly (Juma, 2024). While previous research has examined the relationship

between PTR and student outcomes (Komba&Mwandaji, 2015; Nyoni, 2018), teacher motivation (Cheptoo& Ramadas, 2019), and educational policy (HakiElimu, 2012), the specific effect of PTR on CBC implementation in Tanzania has not been thoroughly investigated.

Moreover, existing literature has not sufficiently addressed the complex ways in which PTR influences CBC implementation, particularly in areas such as teacher professional development, decision-making among policymakers, and the overall quality of education. Studies have shown that high PTRs negatively impact teacher effectiveness and student learning outcomes (Ashioya, 2022; Komba&Wambura, 2023). Additionally, there is a need for further research into the relationship between PTR and the success of curriculum implementation, especially in terms of tailored teacher training and resource allocation to address the growing student population (Cheptoo& Ramadas, 2023; Mkoma et al., 2023). Therefore, this study aimed to examine the effect of PTR on the effectiveness of the Competence-Based Curriculum in primary schools within the Tunduru District Council.

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of this study was to assess the impact of the Pupil-Teacher Ratio on the effectiveness of the Competence-Based Curriculum in public primary schools.

1.4.2 Specific Objectives

(i) To examine the impact of the pupil-teacher ratio on teachers' workloads when implementing the competency-based curriculum in public primary schools.

(ii) To investigate the influence of the Pupil-Teacher Ratio on the effectiveness of evaluation methods in the Competence-Based Curriculum in public primary schools.

(iii) To determine the effects of the Pupil-Teacher Ratio on subject performance within the Competence-Based Curriculum in public primary schools.

1.5 Research Questions

The following research questions guided this study:

i. What are the effects of the pupil-teacher ratio on teachers' workloads when implementing the competency-based curriculum in public primary schools?
ii. How does the Pupil-Teacher Ratio influence the effectiveness of evaluation methods in the Competence-Based Curriculum in public primary schools?
iii. What are the effects of the Pupil-Teacher Ratio on subject performance in the Competence-Based Curriculum in public primary schools?

1.6 Significance of the Study

The findings of this study are expected to have significant implications across multiple areas, including social needs, policy development, theoretical contributions, and academic knowledge. Specifically:

Practical Significance: The primary goal of this study is to provide actionable insights for decision-makers in Tanzania's primary schools. The results will be especially valuable for school administrators, policymakers, and other education

stakeholders by highlighting how the pupil-to-teacher ratio (PTR) impacts the effectiveness of the Competence-Based Curriculum (CBC). These insights will help optimize limited educational resources and improve academic outcomes. While focused on Tanzania, the findings may also offer helpful lessons for other developing countries facing similar educational challenges. Additionally, the study will provide essential information to school management teams and stakeholders such as education ministries and NGOs, particularly regarding the effects of PTR on teacher workload, assessment efficiency, and overall academic performance. This information can help administrators develop strategies to improve teaching quality, reduce teacher burnout, and enhance student outcomes.

Policy Development: The study's findings will be critical in shaping educational policies. This research will help policymakers make informed decisions about teacher allocation and class size management by providing empirical evidence on the relationship between PTR and CBC effectiveness. It will also encourage targeted investments in teacher recruitment, professional development, and infrastructure, improving education quality in Tanzania and similar countries. The findings will support revisions to existing educational frameworks to ensure they align with the goals of competency-based education.

Theoretical Significance: From a theoretical standpoint, this research will contribute to the ongoing discourse on the impact of PTR on the effectiveness of competency-based education systems. It will assess current models and theories, identify gaps in the existing literature, and provide new insights into the field. The

study will help refine theoretical frameworks related to classroom management, teacher workload, and curriculum implementation, serving as a valuable resource for future academic studies on related topics.

Contribution to Knowledge and Curriculum Development: This study will also add to the broader knowledge base, particularly in curriculum design and educational innovation. The findings will guide curriculum developers in designing and implementing competency-based learning models for varying PTRs. This could lead to teaching methods, classroom management techniques, and resource allocation innovations. Additionally, the research will provide valuable insights for improving teacher training programs, ensuring that educators are better prepared to manage large class sizes while maintaining high educational standards.

Significance for Future Research: This study will be a foundational resource for future research on similar topics. It will provide helpful secondary data and identify areas where further investigation is needed, particularly in exploring the impact of PTR and CBC in different educational settings. The methodologies and findings presented in this research will guide future scholars in developing and refining their studies on this vital issue.

1.7 Scope of the Study

This study was conducted in selected public primary schools in Tanzania's Tunduru District Council. It specifically focused on understanding the impact of the pupil-to-teacher ratio (PTR) on implementing the Competence-Based Curriculum (CBC). The

research examined several key variables, including teacher workload, the effectiveness of teaching methods, evaluation techniques, and the overall performance of students in national examinations. While the study was confined to a specific geographic area, its findings are expected to have broader relevance, particularly for other regions in Tanzania and potentially other developing countries facing similar educational challenges.

1.8 Limitations of the Study

Several limitations were encountered during the study:

Financial Constraints: Limited funding was one of the primary challenges. The scope of the study was restricted to the Ruvuma region due to budgetary constraints. The researcher relied on personal funding and family support to conduct the study.

Time Constraints: Time limitations also posed a challenge. Conducting a comprehensive study that gathers sufficient data from various respondents requires significant time investment. To mitigate time constraints, the researcher carefully planned the sampling process and established a detailed schedule to ensure all necessary activities were completed within the available timeframe.

Lack of Existing Literature: Since PTR and CBC are relatively new in Tanzania, relevant literature on the subject was scarce. Most existing studies were based on data from other African countries, which may not fully reflect the Tanzanian context. To address this, the researcher relied heavily on primary data collection and supplemented it with reports from various institutions where possible.

Despite these limitations, the researcher ensured that the study was conducted rigorously and that the findings would still provide valuable insights into the relationship between PTR and CBC implementation.

1.9 Organization of the Study

This dissertation is organized into five chapters:

Chapter One introduces the study, outlining the background, problem statement, research objectives, research questions, scope, limitations, and significance.

Chapter Two presents a detailed literature review, exploring key theoretical concepts and relevant empirical studies and identifying gaps in the existing research. It also outlines the conceptual framework that guided the study.

Chapter Three describes the research methodology, including the study design, area of study, target population, sample size, sampling techniques, data collection methods, and data analysis procedures.

Chapter Four provides the analysis and interpretation of the data collected, offering insights into the impact of the pupil-teacher ratio (PTR) on implementing the Competence-Based Curriculum (CBC).

Chapter Five summarizes the key findings, concludes, and offers recommendations based on the results. It also suggests areas for future research and discusses the policy implications of the findings.

Each chapter builds upon the previous one, creating a coherent progression from identifying the research problem to analyzing and interpreting the results.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter thoroughly reviews the literature relevant to the study on the impact of the pupil-teacher ratio on implementing the Competence-Based Curriculum (CBC) in public primary schools. It begins by defining the key concepts associated with the study, followed by an empirical review that discusses previous research in the field. The chapter also outlines the conceptual framework that underpins the study. Finally, it identifies and examines the gaps in the existing literature that this research seeks to address.

2.2 Definition of Terms

To ensure clarity and accuracy in measuring the variables within the conceptual framework, this section provides operational definitions for the key terms and concepts used in the study:

Assessment: Evaluating a learner's knowledge, skills, and performance to inform teaching strategies and enhance learning outcomes.

Pupil-teacher ratio (PTR): The total number of students in a school divided by the total number of qualified teachers. This ratio indicates the availability of educational resources and reflects the level of individual attention teachers can provide to students.

Competence-Based Curriculum (CBC): An educational approach focused on developing specific skills and competencies, prioritizing the practical application of

knowledge in real-world situations rather than merely emphasizing theoretical knowledge. In the context of this study, CBC refers to a curriculum that emphasizes what learners are expected to do rather than what they are expected to know.

Primary Schools: Educational institutions that provide foundational education to young children, typically between the ages of 5 and 11. Primary schools focus on essential skills such as literacy, numeracy, and social development, serving as the foundational level of education before students progress to secondary school.

2.3 Theoretical Literature Review

2.3.1 Humanistic PsychologyTheory

The study was grounded in Humanistic Psychology, a theory articulated by influential figures such as Abraham Maslow and Carl Rogers in the mid-20th century. This theory emphasizes the inherent goodness of individuals and their capacity for personal growth and self-actualization. By encouraging students to take ownership of their learning, Humanistic Psychology fosters greater engagement and motivation, creating an educational environment that supports individual development and fulfillment.

Strengths of Humanistic Psychology in Education

Humanistic Psychology in education offers several key advantages. It recognizes the individuality of each learner, emphasizing the importance of personalized and meaningful educational experiences that cater to specific needs. This focus on personalization encourages students to engage more deeply with their learning, boosts their motivation, and fosters a sense of ownership over their academic

journey. Additionally, the theory promotes holistic development, addressing emotional, intellectual, and social aspects, which are critical for shaping well-rounded individuals. By nurturing these areas, Humanistic Psychology creates an enriching educational environment that supports personal growth and academic achievement.

Weaknesses of the Theory

Despite its strengths, Humanistic Psychology in education has certain limitations. A major challenge is the resource constraints that hinder the achievement of the low pupil-teacher ratios (PTRs) necessary for effective individualized instruction. In many educational contexts, practical realities often overshadow the ideal theoretical applications. Furthermore, the theory's focus on subjective experiences makes it difficult to establish standardized assessment tools, posing challenges in consistently measuring student progress and outcomes. These limitations highlight the need for a balanced approach that incorporates both the ideals of Humanistic Psychology and the practical constraints educators face.

Relevance of Humanistic Psychology to the Study

This theory is particularly relevant to the current study as it provides a useful framework for understanding the educational context in Tunduru District Council, where the principles of Humanistic Psychology intersect with assessing PTRs and the effectiveness of the Competence-Based Curriculum (CBC). The CBC aims to transfer knowledge and foster students' self-development, encouraging skills like critical thinking, creativity, and problem-solving. By emphasizing a learner-centered

approach, the CBC aligns with personal growth and self-actualization goals, enabling students to engage more in their educational experiences.

Furthermore, the humanistic approach stresses the importance of creating supportive and personalized learning environments that address the unique needs of each student. These environments are essential for successfully implementing CBC, allowing students to express themselves, explore their interests, and relate their learning to real-world contexts. To address the challenges posed by high PTRs, educators can focus on strategies that provide individualized attention, such as differentiated instruction and collaborative learning.

By integrating the principles of Humanistic Psychology into the CBC framework, educators in Tunduru District Council can work toward enhancing educational outcomes. This alignment helps create a more inclusive and responsive educational system, fostering an environment where all students are encouraged to reach their full potential. Thus, this study not only emphasizes the relevance of Humanistic Psychology but also advocates for practical approaches to improve teaching practices and learning experiences, considering the unique challenges of the local educational setting.

2.4 EmpiricalLiterature Review

The review of empirical studies is structured around three central themes derived from the research questions, providing a critical analysis of each study's methodology. This includes an evaluation of the study's objectives, design, target population, sample size, sampling methods, and data collection tools. Additionally,

the review examines how effectively the findings correspond to the study's goals. This analysis helps pinpoint the research gap the current study seeks to fill.

2.4.1 Effects of the Pupil-Teacher Ratio on Teachers' workload in the implementation of the Competence-Based Curriculum

Williams, C., & Taylor, L. (2023) conducted a study in the United Kingdom to explore how teacher workload and class size influence curriculum implementation in primary schools. They used a mixed-methods approach, combining quantitative surveys with qualitative focus group discussions to collect comprehensive data. The study involved 150 teachers for the survey and 20 teachers for the focus groups. The results showed that larger class sizes contributed to increased teacher workloads, making it harder for educators to implement a competency-based curriculum (CBC) effectively. Teachers noted a lack of resources, which exacerbated their challenges and limited their ability to deliver tailored instruction. While the study highlighted the connection between class size and workload, it could be improved by a deeper exploration of the specific resources teachers felt were lacking. Additionally, the research could have examined regional differences in the UK to understand better how local contexts influence teacher experiences. The current study aims to provide a more thorough understanding of the barriers to effective CBC implementation in primary education.

Jones, A., & Smith, B. (2022) explored the impact of pupil-teacher ratios on teacher workload and curriculum delivery in the United States. Using a mixed-methods approach that combined interviews with surveys, the study involved 200 randomly

selected teachers across multiple U.S. states. The findings revealed that higher pupil-teacher ratios led to increased teacher workloads, hindering the adoption of student-centered and competency-based teaching practices. Teachers reported feeling overwhelmed and struggled to provide individualized support. Although the study provided valuable insights, its reliance on self-reported data may have introduced bias, and the cross-sectional design limited the ability to establish long-term effects. The current study uses a convergent design to offer deeper insights into how pupil-teacher ratios affect educational outcomes and the broader learning environment.

Garcia, M. (2024) examined the relationship between class size and teacher effectiveness in implementing a new curriculum reform in Canada. Using a correlation study design, the research analyzed standardized test results and teacher surveys involving 250 teachers in Ontario. The findings showed that smaller pupil-teacher ratios were associated with improved teacher effectiveness and student learning outcomes. Teachers in smaller classes felt better equipped to adapt their instruction to meet individual needs. However, the study's reliance on quantitative data overlooked qualitative insights into teachers' challenges. Incorporating interviews or case studies could have provided a fuller understanding of the dynamics at play. The current study integrates qualitative and quantitative methods to offer a more comprehensive view of how class sizes impact educational effectiveness.

Osei, R. (2022) conducted a study in Ghana focusing on the impact of pupil-teacher ratios on teaching quality in primary schools. Using a mixed-methods approach with interviews and surveys, the research involved 120 teachers and 30 head teachers. The findings indicated that high pupil-teacher ratios negatively affected teacher

workloads, reducing teaching quality. Teachers reported difficulty providing individualized attention to students, resulting in lower engagement and achievement levels. Though the study provided valuable data, the small sample size may limit the generalizability of the findings across Ghana's diverse educational contexts. A larger sample size could enhance the robustness of the results, and including student perspectives could offer a more holistic understanding of how pupil-teacher ratios affect teachers and learners.

Chikunda, C. (2023) explored the effects of class size and teacher workload in Zimbabwe, focusing on implementing a competency-based curriculum. Using a qualitative case study approach with interviews and document analysis, the study involved 15 teachers and 5 school administrators in Harare. The findings showed that large class sizes increased teacher workloads, hindering the effective implementation of the CBC. Teachers reported being unable to meet the needs of all students due to overcrowded classrooms. While the study provided valuable insights into the challengesteachers face, its small sample size may not fully reflect the experiences of teachers in rural areas, where challenges may differ. Expanding the study to include a broader range of regions would offer a more comprehensive understanding of how class sizes and workloads impact educational outcomes.

Adewale, J. (2024) conducted a study in Nigeria to assess the impact of pupil-teacher ratios on curriculum delivery in secondary schools. The research employed a mixed-methods approach, combining surveys and focus group discussions, and involved 200 teachers and 30 focus group participants in Lagos State. The findings revealed

that large class sizes led to increased teacher workloads, which made it difficult for teachers to implement the new curriculum effectively. While the study provided a balanced perspective by combining quantitative and qualitative data, it focused primarily on teacher experiences. It did not fully consider administrative rules and policies contributing to high pupil-teacher ratios. Including these viewpoints would offer a more comprehensive understanding of educators' challenges in curriculum delivery.

Mwita, J. (2023) examined the influence of pupil-teacher ratios on teacher workload and CBC implementation in secondary schools in Kenya. The study used a quantitative survey with a sample of 150 secondary school teachers in Nairobi. The findings indicated that higher pupil-teacher ratios were linked to increased teacher workloads, which hindered teachers' effectiveness in implementing the competency-based curriculum. Teachers reported challenges related to assessment and providing personalized instruction. While the study provided valuable quantitative data, it could be enhanced by incorporating qualitative interviews to understand teachers' experiences better. A mixed-methods approach would provide a richer perspective on the barriers to effective curriculum implementation.

Kibonde, P. &Mibagwe, A. (2023) investigated the impact of pupil-teacher ratios on implementing the competency-based curriculum in primary schools in Tanzania. The study used a mixed-methods approach with surveys and interviews and involved 200 primary school teachers from various regions. The findings showed that high pupil-teacher ratios hindered the effective implementation of the CBC, as teachers faced

high workloads that limited their instructional time and ability to engage with students. Although the study provided valuable insights, its cross-sectional design restricted the ability to examine the long-term effects of pupil-teacher ratios. Future research could adopt a longitudinal approach to provide deeper insights into pupil-teacher ratios' trends and long-term implications on curriculum implementation.

Abdi, M. (2024) conducted a study in Tanzania to examine the impact of class size and teacher workload on implementing a competency-based education in primary schools. The research employed qualitative case studies and quantitative surveys involving 100 teachers and 20 headteachers. The findings indicated that larger pupil-teacher ratios made it challenging to implement the CBC effectively, as teachers reported being overwhelmed and unable to provide sufficient individual attention. Apart from the study's successful combination of both qualitative and quantitative data, it may be limited by its regional focus, and including the perspectives of parents and students could have enriched the analysis.

Nkya, M. (2021) conducted a study in Arusha, Tanzania, examining the Competence-Based Curriculum (CBC) implementation with a focus on perceptions, challenges, and prospects. Using a mixed-methods approach, the study involved 233 teachers, 10 school heads, and 5 district educational officers. The findings showed that while teachers were generally positive about the CBC, many felt unprepared for its implementation, with over 70% not participating in in-service training. Challenges such as large class sizes and insufficient resources were identified as barriers to effective implementation. Despite the study providing valuable insights, it could have benefited from a deeper exploration of qualitative data to understand the

specific challenges teachers face and the systemic factors influencing CBC implementation.

2.4.2 Pupil-Teacher Ratio influences the effectiveness of evaluation methods in the Competence-Based Curriculum in Public Primary Schools

The pupil-teacher ratio (PTR) is crucial in determining the effectiveness of evaluation methods used within the Competence-Based Curriculum (CBC) in public primary schools. A lower PTR allows for more personalized assessments and detailed feedback, which enhances student understanding. In contrast, a higher PTR limits individualized evaluations, often forcing educators to rely on standardized methods that may fail to capture the actual progress of each student.

Müller, T. (2024) examined the relationship between PTRs and the effectiveness of evaluation methods in primary schools implementing the Competence-Based Curriculum in Germany. The study used a correlational design, analyzing survey data alongside school performance metrics from a sample of 300 teachers. The results showed that higher PTRs were associated with less effective evaluation practices, as large class sizes hindered the ability to conduct formative assessments, leading teachers to revert to traditional evaluation methods. Although the correlational approach provided valuable statistical insights, the study did not establish causal relationships. Additionally, the absence of qualitative data limited the understanding of teachers' personal experiences and challenges in implementing evaluation methods.

Laine, E. (2024) conducted a study in Finland to assess the impact of PTRs on evaluation methods in primary schools adopting the CBC. Using a multi-case study

design that integrated qualitative case studies and quantitative performance data, the research focused on 15 teachers and 5 administrators from schools in Helsinki. The study found that lower PTRs facilitated more effective evaluation methods, allowing teachers more time to tailor assessments and provide individualized feedback, improving student engagement and academic outcomes. However, the small sample size and focus on urban schools limited the generalizability of the findings. Expanding the study to include rural or under-resourced areas could offer a broader understanding of how PTRs influence evaluation methods across different contexts.

Al-Harthi, M. (2023) explored how PTRs affect evaluation methods within the CBC framework in Saudi Arabia. The study combined quantitative surveys with qualitative interviews, focusing on 250 teachers and 30 educational supervisors in Riyadh. The findings indicated that higher PTRs made it difficult for teachers to provide personalized assessments and meaningful feedback, which is crucial for effective skill development. Despite providing a solid quantitative analysis, the study did not address variations in practices across urban and rural settings, which may have limited the scope of the findings. Including perspectives from parents and students would have enriched the study, offering a more holistic view of the challenges faced by teachers in implementing effective evaluation methods.

Singh, R. (2022) investigated the influence of PTRs on evaluation methods in public primary schools in Maharashtra, India, using a mixed-methods approach that combined surveys with interviews. The sample included 180 teachers from both urban and rural areas. The study found that larger class sizes were linked to difficulties in providing personalized assessments, resulting in a reliance on

standardized testing that did not reflect individual student progress. Despite providing valuable insights, the reliance on self-reported data may have introduced bias, and the study's focus on Maharashtra may limit the applicability of the findings to other regions in India. Future research could benefit from a broader geographical scope that incorporates multiple states and considers the influence of cultural factors on evaluation practices.

Nguvumali, R. (2024) examined the effects of PTRs on evaluation methods in South African primary schools adopting the CBC. The study used a multi-case design combining qualitative case studies and quantitative performance data, involving 15 teachers and 5 administrators across several provinces. The findings indicated that high PTRs hindered teachers' ability to conduct thorough assessments and provide effective feedback, often leading to less personalized evaluation methods. Nonetheless, the study's limited sample size and focus on urban areas may restrict the generalizability of the results. Exploring rural or resource-poor contexts could provide a more complete understanding of how PTRs affect evaluation practices in diverse settings.

Mwita, J. (2022) explored the impact of PTRs on evaluation methods in Kenya's public primary schools, using a mixed-methods approach with surveys and interviews. The study involved 150 teachers from selected districts and found that higher PTRs were linked to challenges in providing individualized assessments and meaningful feedback. As a result, teachers relied more on standardized testing, which undermined the personalized approach intended by the CBC. Although the study

provided valuable data, its reliance on self-reported information may have introduced biases, and the cross-sectional design limits the ability to capture long-term effects. Therefore, a longitudinal study could offer deeper insights into how PTRs influence evaluation methods.

Kibonde, P. &Mibagwe, A. (2023) studied the effects of PTRs on evaluation methods within Tanzania's CBC framework. Using a concurrent triangulation design, the researchers combined quantitative surveys with qualitative focus group data from 200 teachers and 30 educational administrators. The study revealed that high PTRs created significant barriers to effective evaluation, with teachers struggling to manage assessments and provide meaningful feedback. This often resulted in using summative assessments instead of more comprehensive formative methods. Although the study effectively combined quantitative and qualitative data, its focus on a limited geographical region may restrict the broader applicability of the findings. Expanding the research to include both urban and rural areas and exploring the socioeconomic factors influencing evaluation methods would provide a more nuanced understanding of the broader educational challenges in Tanzania.

2.4.3 The Effects of Pupil-Teacher Ratios on Subject Performance in the Competence-Based Curriculum in Public Primary Schools

The pupil-teacher ratio (PTR) profoundly affects subject performance in public primary schools following the Competence-Based Curriculum (CBC). Lower PTRs enable teachers to offer more individualized instruction and provide effective feedback, improving student outcomes, particularly in mathematics and language

arts. In contrast, higher PTRs, which result in larger class sizes, impede the ability of teachers to provide personalized attention, thus negatively affecting academic performance.

Jones, A., and Smith, B. (2023) conducted a study in the United Kingdom to examine how PTRs influence subject performance in primary schools implementing the CBC. Using a cross-sectional design, the researchers analyzed standardized test scores and teacher surveys from 300 teachers across England. The study found a positive relationship between lower PTRs and improved performance in subjects like mathematics and language arts, as smaller class sizes allowed teachers to offer more individualized attention, which boosted student engagement and comprehension. However, relying on standardized test scores may not fully capture the richness of student learning experiences. Future research could incorporate qualitative data to explore classroom dynamics and the nuances of student-teacher interactions.

Müller, T. (2024) explored the effect of PTRs on subject performance in Germany's primary schools using a mixed-methods approach that included both quantitative data and qualitative interviews. The study, conducted with 250 teachers and 20 head teachers from various regions, found that higher PTRs negatively impacted subject performance, especially in science and arts. Teachers reported that large class sizes limited their ability to provide hands-on and personalized learning opportunities. While this study highlights the significant role of classroom dynamics in academic outcomes, its regional focus may limit the generalizability of its findings. Expanding the scope to include more diverse regions could offer a broader understanding of how PTRs affect subject performance across Germany.

Laine, E. (2022) conducted a study in Finland investigating the relationship between PTRs and subject performance under the CBC. The research used a multi-case study design that included qualitative case studies and quantitative data analysis, drawing on insights from 15 teachers and 5 administrators in urban and rural areas. The findings indicated that lower PTRs were associated with better performance in literacy and mathematics, as teachers had more time to provide personalized assessments and feedback. However, the small sample size and focus on specific areas might limit the applicability of the results. A more extensive and diverse sample could provide a more comprehensive view of how PTRs affect subject performance across Finland's educational contexts.

Singh, R. (2023) conducted a study in India examining the impact of PTRs on subject performance in primary schools implementing the CBC. Using a cross-sectional design, the research involved 200 teachers from both urban and rural areas of Maharashtra, with an analysis of academic performance data. The study found that higher PTRs were linked to lower performance in mathematics and reading, as teachers faced difficulties providing individualized instruction and feedback. This study provides valuable quantitative insights but could be enriched by including qualitative perspectives from students to better understand their experiences related to PTR. Additionally, expanding the geographic scope to other regions of India could provide a more complete picture of how PTRs influence educational outcomes in various contexts.

Adewale, J. (2022) investigated the impact of PTRs on subject performance in Nigeria’s primary schools following the CBC. The research, using a cross-sectional

design, involved 150 teachers from both urban and rural settings. The findings revealed that schools with higher PTRs had poorer performance in subjects like language arts and mathematics, primarily due to the limited individual attention teachers could give to their students. Although the study highlights the challenges of large class sizes, adding qualitative data from teachers could deepen the understanding of these dynamics. Furthermore, incorporating student perspectives would offer a more holistic view of how PTRs affect learning outcomes in Nigerian schools.

Mwita, J. (2023) studied the effects of PTRs on subject performance in Kenyan primary schools adopting the CBC. Using a mixed-methods approach, the study involved 250 teachers from various districts, combining quantitative surveys with qualitative interviews. The findings revealed that higher PTRs negatively impacted performance in STEM subjects, as teachers struggled to provide personalized instruction and adequate feedback. This study underscores the critical link between PTRs and educational outcomes but may be influenced by biases in self-reported data. Expanding the study to include rural and urban schools could offer a more nuanced understanding of how different contexts influence teaching and learning outcomes related to PTR.

Nsubuga, J. (2024) conducted a study in Uganda to assess how PTRs affect subject performance in primary schools under the CBC. The research, which used a descriptive case study design, combined quantitative data with case studies, involving 180 teachers across various districts. The findings indicated that schools

with higher PTRs faced significant challenges in achieving satisfactory performance in core subjects due to insufficient feedback and assessment practices. However, the study's limited geographic focus may restrict the broader applicability of the results. Future research could expand the sample to include a more comprehensive range of districts, providing a complete understanding of how PTRs affect teaching and learning in Uganda.

Nguvumali, R. (2024) examined the relationship between PTRs and subject performance in Tanzania's primary schools following the CBC. Using a descriptive correlational study design, the research involved 100 teachers and combined quantitative surveys with qualitative interviews. The findings showed a clear association between higher PTRs and lower performance in mathematics and language arts subjects, as teachers struggled to offer individualized instruction and feedback. This study highlights the negative impact of large class sizes on academic outcomes but may be limited by its small sample size. Future studies could benefit from expanding the participant pool and including both rural and urban schools to better understand how PTRs influence educational performance across different contexts in Tanzania.

2.5 Research Gap

While many studies have examined the effect of pupil-teacher ratios on educational quality (Mwita, 2023; Adewale, 2022; Singh, 2023; Laine, 2022; Müller, 2024; Jones & Smith, 2023; Nguvumali, 2024; Al-Harthi, 2023; Abdi, 2024; Chikunda, 2023; Osei, 2022), there is still a significant gap in research regarding how pupil-teacher ratios specifically influence the implementation of the Competence-Based

Curriculum (CBC), especially in light of recent shifts from content-based to competence-based education. Although Adewale (2024) explored the relationship between pupil-teacher ratios and subject performance in Nigeria, and other studies have linked the CBC to education quality, few have investigated the impact of rising enrollments due to the free education policy on the effectiveness of CBC implementation. Much of the existing literature overlooks the contextual factors that are particular to regions like Tunduru District. This study seeks to address these gaps by analyzing how pupil-teacher ratios affect CBC implementation in Tunduru District, offering a detailed exploration that considers this specific area's unique challenges and circumstances.

2.6 Conceptual Framework

A conceptual framework outlines the relationship between variables in a study, typically involving independent, dependent, and sometimes intervening variables. It helps structure the research by providing a precise model of how these variables interact. (Farooq, 2019). In this study, the independent variable is the Pupil-Teacher Ratio (PTR), and the dependent variable is the effectiveness of the Competence-Based Curriculum (CBC). The framework developed for this study highlights how PTR affects the implementation of CBC, as shown in the figure below.Figure 2.1

Assessment of Effect of Pupil Teacher Ratio on Effectiveness of Competence Based Curriculum for Public Primary Schools in Tunduru District Council.

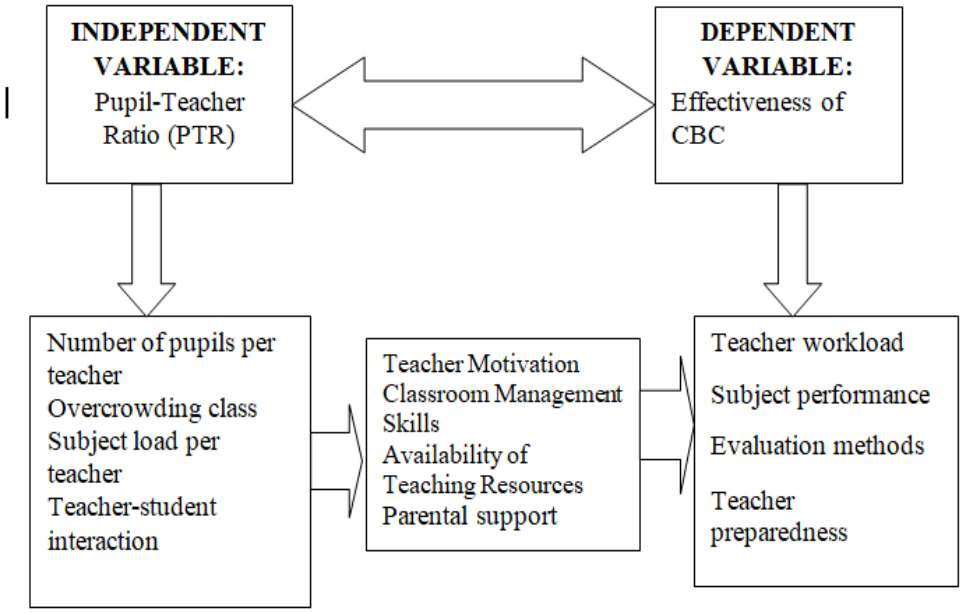


Figure 2.1: Conceptual Framework

Source: Researcher own construction (2024)

This study follows a conceptual framework in which the independent variable is the Pupil-Teacher Ratio (PTR), and the dependent variable is the effectiveness of the Competence-Based Curriculum (CBC). The interaction between these variables is crucial to understanding how PTR influences CBC implementation in public primary schools.

PTR impacts CBC effectiveness in several ways. First, high PTR increases teacher workload, as teachers must manage larger classes with more students, often without additional resources. This overload hampers their ability to implement the CBC effectively, limiting their time and capacity to address the diverse needs of students. Second, large class sizes negatively affect subject performance. With high PTR, teachers struggle to provide individual attention, making it difficult to meet students'

needs, resulting in lower academic performance and hindering CBC objectives. Third, evaluation methods become less effective in overcrowded classrooms. Formative assessments, essential to CBC, require regular interaction with students. However, in large classes, teachers may lack the time or resources to carry out these evaluations properly, leading to less accurate and meaningful assessments. Lastly, teacher preparedness is compromised by high PTR. Overwhelmed by large classes and heavy workloads, teachers may feel underprepared, which can diminish the quality of their lessons and reduce the overall effectiveness of CBC implementation.

On the other hand, the intervening variables significantly influence how PTR affects CBC effectiveness. These variables can either mitigate or amplify the impact of high PTR. Four key intervening variables are examined in this study. Teacher motivation is one such variable. Highly motivated teachers are better equipped to handle the challenges of high PTR, maintaining their effectiveness despite large class sizes. However, if PTR causes burnout or frustration, teacher motivation may decrease, negatively affecting CBC delivery. Thus, teacher motivation mediates the relationship between PTR and CBC, with motivated teachers finding ways to engage students and deliver quality instruction even in challenging circumstances.

Classroom management skills also intervene in this relationship. Teachers with solid classroom management can handle large, overcrowded classrooms more effectively. Classroom management ensures that teaching remains productive and focused, even with high PTR. Therefore, classroom management skills mediate the effect of PTR, allowing teachers to implement CBC more successfully despite the pressures of large class sizes.

The availability of teaching resources is another important intervening variable. Access to resources like textbooks, learning aids, and technology can help teachers manage large classes more efficiently. These resources enable diverse teaching methods, such as group work and digital learning tools, which can enhance CBC delivery in crowded classrooms. Thus, resource availability moderates PTR's impact, allowing teachers to overcome some of the challenges posed by high PTR.Lastly, parental support is a crucial moderating factor. Parental involvement can supplement classroom instruction, providing additional reinforcement for students outside school. In the context of high PTR, where individualized attention is limited, parental support becomes even more critical. Engaged parents can help counterbalance the adverse effects of large class sizes by reinforcing learning at home, ultimately enhancing CBC effectiveness.

The diagram from the developed conceptual framework has one independent variable and three dependent variables. The PTR seems to impact teachers' workload, assessment methods, and the performance of individual subjects. Hence, PTR is an independent variable, and teachers' workload, assessment methods, and performance of individual subjects are dependent variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines key aspects of the study, including the study area, research paradigms and approaches, research design, sampling frame and techniques, sample size, data collection, and analysis methods, as well as considerations regarding validity, reliability, ethics, and anticipated results.

3.2 Research Approach

The research adopts a structured framework that guides decision-making throughout the study, integrating broad assumptions with specific methods for sampling, data collection, and analysis (Creswell & Creswell, 2018). Using a mixed methods approach, the study combined qualitative and quantitative methods to examine the research issue comprehensively. One of the strengths of this approach was its ability to overcome the limitations of each method by leveraging their respective strengths (Cohen et al., 2018). This combination enhanced the depth and breadth of the findings, enabling a more complete understanding of the research problem through the collection and analysis of a diverse range of data (Creswell & Plano Clark, 2022). Ultimately, the mixed methods approach enriched the study's conclusions by offering a more nuanced perspective.

3.3 Research Design

The study employed a convergent research design within the mixed methods framework, involving the simultaneous collection of quantitative and qualitative

data. This design allowed for integrating the data sets, providing a more thorough understanding of the research issue (Creswell & Creswell, 2023). The process involved collecting and analyzing the qualitative and quantitative data separately before combining them to identify areas of agreement or discrepancy. The integrated data was then used to inform the study's interpretation and conclusions.

A convergent design proved highly beneficial, as it validated the research findings by synthesizing qualitative and quantitative data. This approach addressed the limitations of using a single method and facilitated a robust data collection process, allowing for the generalization of the findings to a broader population. By capturing the real-world experiences of heads of English departments and school leaders, this design provided valuable insights into the dynamics of CBC implementation. Additionally, it offered a time-efficient approach by enabling the simultaneous collection of both types of data within a single timeframe.

3.4 Study Area

Data were collected from Tunduru District in the Ruvuma Region. This area was chosen due to its significance in implementing the Competence-Based Curriculum (CBC), as Ruvuma was one of the five regions identified by the Ministry of Education (2017) as facing challenges in CBC implementation. Tunduru was specifically selected because it had a large number of public primary schools, which were the focus of the study. Furthermore, Tunduru's recent performance in the national standard seven results, notably higher than in previous years, made it an area of particular interest. In contrast to private institutions, the district's higher number of public primary schools also offered an opportunity to explore the dynamics of CBC

in an essentiallypublic school setting. Practical considerations, such as the ease of access to schools in Tunduru and the researcher's connection to the area, further supported the selection of this district. The researcher believed valuable insights could be gathered from this region, making it an appropriate location for addressing the study's research questions.

3.5 Target Population

The target population for this study consisted of all public primary schools in Tunduru District, encompassing 146 schools, and the 999 teachers employed across these institutions. This specific focus was justified by the aim to investigate the implementation of the Competence-Based Curriculum in a particular context, offering a detailed examination of its impact on teaching practices. By selecting public primary schools in Tunduru, the study addressed the unique challenges faced by educators in this region, which had been identified as a critical area of interest for CBC implementation. Including all teachers in the district as part of the target population ensured a comprehensive understanding of the factors at play, as teachers were central to the successful delivery of the curriculum. This approach enhanced the study's relevance and facilitated rich data collection that reflected the experiences and perspectives of those directly involved in the educational process. By focusing on this specific population, the study aimed to provide findings that could inform future educational policies and practices in Tunduru and similar contexts.

3.6 Sample Size and Sampling Technique

3.6.1 Sampling Frame

(Saunders, 2009) argues that in statistics, the sampling frame is the source material or device from which a sample is drawn. It lists all population members who can be sampled and may include individuals, households, or institutions. So, the sampling frame for any probability sample is a complete list of all the cases in the population from which the sample was drawn. In this study, the sampling frame consisted of two aspects: six wards and ten public primary schools. A sampling frame was constructed based on the study area to perform non-probability sampling for selecting wards, educational officers, head teachers, and district education officers, as shown in Table 3.1.

Table 3.1: Sampling Frame

Ward	Number of Schools	Respondents
Matemanga	2 schools (out of 4)	10 teachers +1 WEO
Namwinyu	3 schools (out of 6)	20 teachers + 1 WEO
Nandembo	2 schools (out of 5)	20 teachers + 1 WEO
Nampungu	1 school (out of 3)	10 teachers +1 WEO
Jakika	2 schools (out of 4)	10 teachers +1 WEO
Kalulu	1 (out of 2)	5 teachers + 1 WEO
		81 respondents + 18 head teachers + 1 DEO = 100 Respondents

Hint: WEO = Ward Education Officer**, DEO =** District Education Officer

3.6.2 SamplingProcedures and Techniques

Sampling techniques are crucial for selecting a representative subset from a larger population. Purposive sampling, or judgmental or subjective sampling, is a non-probability method where researchers choose participants based on their expertise or

relevance to the study (Creswell & Creswell, 2023). This method was particularly appropriate for this research because not all participants needed specific knowledge; thus, only those with relevant insights were selected. Additionally, due to time constraints and geographical factors, purposive sampling was a practical choice. Moreover, simple random and purposive sampling were employed to select teachers, ensuring each had an equal opportunity to be included in the sample for unbiased representation (Fowler, 2014). By combining these sampling methods, the study aimed to strengthen the validity and reliability of its findings, offering a more comprehensive understanding of the research problem.

3.6.3 Sample Size

The sample size for this study consisted of 100 respondents. This size was determined using Yamane's formula for calculating sample sizes. With a total population of 999 teachers, the Yamane formula was applied to determine the sample size for the study ($n = \frac{N}{1+N.e^2}$).

n= N/(1 + N (e^2))

Where by

Total number of the study population

n=total number of sample size

e=level of confidence i.e. confidence level assumed to be 90%; therefore, the margin e=10%

From the Formula

n = 999/1+ 999 (0.1^2)

=999/1+ 999 (0.01)

=999/1+ 9.99

=999/10.99

= 99.6 ~ 100

Therefore, the sample size of the study was include100 respondents.

However, due to the time factor, reaching the scattered district schools is a challenge, especially in Tunduru; hence, the researcher thought of using only 100 respondents to carry out the study. The distribution of the sample size across schools selected was also purposively selected.

Table 3.2: Sample Size

S/N	Respondent	No of Respondent	% of respondent
1	Teachers	75	75
2	Head Teachers	16	16
3	Ward Education Officer	6	6
4	District Education Officer	1	1
		100	100

3.7 DataSources

3.7.1 Data Collection Methods

This study utilized primary and secondary data sources to gather comprehensive information relevant to the research problem. Primary data refers to first-hand information collected directly by the researcher, while secondary data encompasses existing literature and previously published works (Creswell & Creswell, 2023). Without external interpretation, original data is regarded as primary data (Fowler, 2014). This study gathered primary data through questionnaires and interviews**,** offering direct insights from the respondents. Secondary data were sourced from

published books, articles, reports, and prior research. This combined approach provided a well-rounded basis for understanding the research issue and meeting the study's objectives.

3.7.2 Types of Data and Collection Methods

To thoroughly understand the research problem, the study employed primary and secondary data sources. Primary data were collected through questionnaires and interviews, directly engaging with respondents to capture unprocessed, firsthand information. The questionnaires were designed to gather standardized data from a large sample, enabling the quantification of responses and identification of patterns. Meanwhile, interviews allowed for deeper exploration of specific themes, providing nuanced insights into respondents' experiences and perspectives. In contrast, secondary data were collected from existing studies, surveys, and reports published by various organizations, such as NECTA and schools. These secondary sources helped contextualize and enrich the primary data.

3.7.3 Questionnaire Method

A questionnaire is a research tool with questions to gather participants' information (Creswell & Creswell, 2023). This study used a combination of closed and open-ended questions in the questionnaires. Both question types reflect a mixed-methods approach, valued for its ability to capture quantitative and qualitative data cost-effectively (Fowler, 2014). Closed-ended questions allowed for easy comparison and quantification of responses, while open-ended questions allowed participants to express their views in greater detail, offering deeper insights into their experiences

(Creswell & Plano Clark, 2022). The questionnaires were distributed to collect primary data from a broad sample.

3.7.4 Interview Guides

An interviewis a structured method of data collection in which a set of questions is orally administered to participants (Creswell, 2018). This study conducted interviews with teachers to complement and cross-check the data obtained from the questionnaires**.** This approach was particularly useful for gathering qualitative data from select respondents with extensive knowledge of the research topic. The study enriched the quantitative data with more detailed, personal insights by including interviews, ensuring a more comprehensive and nuanced understanding of the issues under investigation.

3.8 Data Analysis and Processing

The Statistical Package for the Social Sciences (SPSS)was used to analyze the data, thoroughly examining the collected information. Initially, the data were cleaned to improve the validity and reliability of the dataset, involving editing for consistency and removing incomplete or irrelevant responses. The cleaned data were then coded and input into SPSS for analysis.

The analysis combined qualitative and quantitative methods. For the qualitative data, the researcher employed content and thematic analysis to identify patterns and critical themes in the responses; for the quantitative data, frequencies and percentages were calculated to examine the distribution of responses across various variables. Descriptive statistics, including mean and standard deviation, were used to

summarize the data for the first three objectives. Inferential statistics were applied to explore relationships between variables and their impact on compliance, providing further insights into how these factors interacted.

This comprehensive approach to data analysis allowed for a deeper understanding of the research questions.

3.9 Validity and Reliability of Instruments

This section outlines the steps taken to ensure the validity and reliability of the research instruments used in the study.

3.9.1 Validity of Quantitative Data Collection Instruments

Validity refers to the extent to which an instrument accurately measures what it is intended to measure (Okendo et al., 2020). Ensuring the validity of the instruments was a priority, as it added credibility to the study's conclusions. To ensure validity, the researcher conducted a thorough evaluation of the instruments. A panel of four experts from OUT reviewed the instruments, including three specialists in educational curriculum and two English language experts. The panel assessed the instruments' clarity, logical flow, thematic adequacy, and alignment with the research questions. Based on their feedback, adjustments were made to improve the instruments before data collection began.

3.9.2 Validity of Qualitative Instruments

In qualitative research, validity focuses on ensuring the accuracy and reliability of the findings (Cohen, 2018). To enhance the validity of the qualitative instruments,

the study employed triangulation, gathering data from multiple sources at different times for comparison. The study also used peer debriefing, where an external reviewer critiqued the findings and posed questions to ensure the results resonated beyond the researcher's perspective. This approach helped validate the qualitative findings, providing a richer and more accurate data representation.

3.9.3 Pilot Testing of Research Instruments

Pilot testing is key in refining research instruments, ensuring they effectively measure the intended constructs before the full-scale data collection (Okendo et al., 2020). The pilot study was conducted in public secondary schools within the Tunduru District Council, with two schools chosen to represent the broader region. The pilot involved 10% of the district's schools, a sample size sufficient for testing the instruments' reliability (Bullen, 2021; Ary et al., 2018). Insights gained from the pilot study led to refinements in question clarity, sequencing, and relevance, ensuring the instruments were better aligned with the study's objectives.

3.9.4 Reliability of Research Instruments

Reliability refers to the consistency of results when the same instrument is used multiple times (Cohen et al., 2018). To ensure the reliability of the instruments, the study subjected the Likert scale items in the questionnaire to statistical analysis using SPSS. The Cronbach's alpha coefficient for the questionnaire was calculated, yielding a value of 0.78**,** indicating a high-reliability level, well above the threshold of 0.5 recommended for research instruments (Kerlinger & Lee, 2021). This result confirmed that the instruments were consistent and suitable for data collection.

3.9.5 Reliability of Qualitative Instruments

In qualitative research, reliability ensures that the findings consistently reflect the research setting (Patten, 2018). In this study, triangulation was used to enhance reliability. This involved comparing results from different instruments, such as interview guides and questionnaires, to identify common patterns. Data triangulation was also employed by interviewing representatives from various groups, including public primary school teachers, to capture various perspectives. The consistency of responses across these different groups further reinforced the reliability of the findings.

3.9.6 Ethical Considerations

Ethical considerations are essential when conducting research with human participants. This study adhered to ethical guidelines throughout the research process, ensuring respect and protection for all participants (Leavy, 2017). Key ethical considerations included:

- **Permission**: The researcher obtained clearance letters from MWECAU and the Regional Education Office (REO) authorizing data collection.
- **Informed Consent**: Respondents were fully informed about the study's purpose, voluntary participation, and right to withdraw. They were provided with consent forms to sign before participating.
- **Confidentiality**: The researcher ensured participants' anonymity by not recording their names. Identifiers such as school names were replaced with numbers, and data were coded to prevent identification.

- **Acknowledgment of Sources**: All sources of information were properly cited to avoid plagiarism. The study followed the APA 7th edition guidelines for referencing.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents, interprets, and discusses research data obtained from the field. It begins with the demographic characteristics of respondents and continues with the findings as per the research questions.

In instruments, Response Rate

100 questionnaires were distributed to the selected respondents in public primary schools within the Tunduru district, and the response rate is shown in Table 4.1.

Table 4.1: Response Rate

School	Targeted Sample size	Responses	Response rate (%)
Matemanga	14	14	13.9
Namwinyu	24	24	24.7
Nandembo	24	24	24.7
Nampungu	14	14	13.9
Jakika	14	14	13.9
Kalulu	09	09	8.9
Total	**100**	**100**	**100**

The data in Table 4.1 reveals that the researcher achieved a 100% response rate for the completed questionnaires. This high completion rate can be attributed to the successful approach adopted by the researcher, which involved collaborating with class teachers at each selected school. Teachers played a key role in organizing the students, grouping them into a single room, and seating them in rows to ensure that those filling out the questionnaires were separated from those taking a test. Once the

students were arranged, the researcher provided clear instructions on how to complete the questionnaires. With the teachers' assistance, the researcher distributed the questionnaires, guided the students as they filled them out, and collected the completed forms after one hour**.** A100% return rate is impressive, especially given that Cohen et al. (2018) suggest that a response rate of 50% is typically considered sufficient. This enabled the researcher to proceed with the data analysis with confidence.

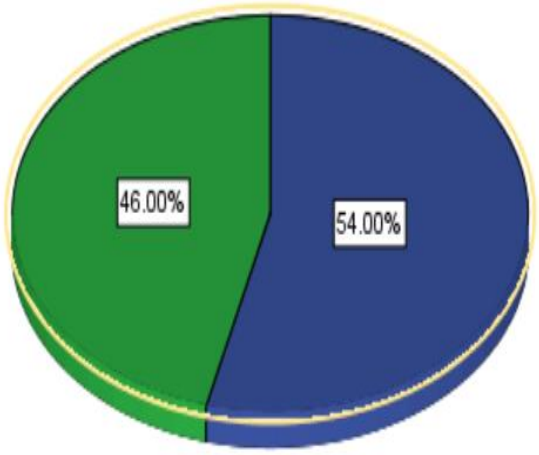
4.2 Respondent Profile

This section focuses on the demographic characteristics of the respondents, including gender, age, education level, marital status, and teaching experience. The results are presented in Sections 4.2.1 to 4.2.5.

4.2.1 Demographic Characteristics of Respondents

Gender is a crucial factor in educational research. Thus, respondents were asked to indicate their gender to assess its influence on implementing the Competence-Based Curriculum to pupil-teacher ratios. Gender was recorded with binary options: male or female. As shown in Figure 4.1, the results reveal that 54% of respondents were male, while 46% were female.

Figure 4.1: Respondent's Gender



Source: Field Data, 2021

The data in Figure 4.2 indicates that 54% of the respondents were male and 47% were female. This shows a relatively balanced gender representation in the study, suggesting that the results were not skewed by gender bias. Including male and female department heads was crucial for the study, as it allowed for a comprehensive examination of potential differences in their perspectives and teaching approaches. The study strengthened its findings by gathering insights from both genders and provided a more nuanced understanding of the factors influencing students' English language proficiency.

4.2.2 Age Distribution of Respondents

The study further sought to find out the respondents' age distribution. Age, a continuous variable, was captured in the final analysis as a categorical variable. Therefore, the researcher created three mutually exclusive age ranges categories: 18-

22 years, 23-27 years, and 28 and above. Analysis of these results is presented in Table 4.2 below.

Table 4.2: Age of Respondents

	Teachers & Heads Sch.		WEO & DEO	
	Frequency	**Percent**	**Frequency**	**Percent**
Between18-22 years	0	0	0	0
23-27 years	25	28.5	0	0
28 and above years	63	71.5	12	100
Total	**88**	**100.0**	**12**	**100.0**

The data in Figure 4.1 illustrates the age distribution of teachers, school heads, District Education Officers (DEOs), and Ward Education Officers (WEOs). Among the teachers and school heads surveyed, the majority (71.5%) were aged 28 years or older, while 28.5% were between the ages of 23 and 27. Notably, there were no participants in the 18 to 22 age range. On the other hand, all the DEOs and WEOs were aged 28 and above, making up 100% of that group. This reveals a clear age difference between the two groups, with most teachers and heads of schools being more experienced and mature in their roles. This age demographic suggests that older educators, who are likely more seasoned and knowledgeable, may offer valuable insights and effective strategies for implementing the Competence-Based Curriculum.

4.2.3 Teaching Experience of Head Teachers and Teachers

The researcher categorised Teaching experience into discrete ranges, including below 5 years, 5-9 years, 10-14 years, 15-19 years, and 20 years or more. The

responses based on these experience brackets were analyzed, and the results are presented in Table 4.3.

Table 4.3: Teaching Experience of Head Teachers and Teachers

	Head teachers		Teachers	
	Frequency	**Percent**	**Frequency**	**Percent**
Below 5 years	0	0	0	0
5-9 years	0	0	5	7
10-14 years	15	83	40	57
15-19 years	02	11	5	7
above 20 years	01	06	25	29
Total	**18**	**100.0**	**70**	**100.0**

Source: Field Data, 2021

Table 4.3 indicates that the majority (83%) of head teachers had 10 to 14 years of teaching experience, 11% had 15 to 19 years, and 6% had over 20 years of teaching experience. This suggests that professional maturity is a key requirement for being appointed as an academic leader in a learning institution. Similarly, among the teachers, 7% had 5 to 9 years of teaching experience, 57% had 10 to 14 years, 7% had 15 to 19 years, and 29% had more than 20 years of experience. These findings demonstrate that most head teachers and teachers in the study had considerable professional experience. As a result, the data collected from these experienced individuals allowed for a thorough analysis of the research topic.

4.2.4 Education Level of Respondents

The researcher also sought to determine the educational qualifications of the respondents. Education levels were categorized into six groups: primary education,

secondary education, ordinary diploma, bachelor's degree, postgraduate, and master's degree. The results of this analysis are presented in Table 4.4.

Table 4.4: Level of Education

Level of Education	Frequency	Percentage
Primary education	00	00
Secondary education	00	00
Certificate	25	25
Diploma	50	50
Bachelor Degree	20	20
Masters Degree	05	05
Total	**100**	**100**

Source: Field data 2021

Table 4.4 presents the educational qualifications of the respondents: 25% held a certificate, 50% completed a diploma, 20% earned a bachelor's degree, and 5% obtained a master's degree. A substantial portion of the participants demonstrated strong literacy skills. This distribution suggests that the respondents were well-qualified, making the data collected from head teachers and teachers reliable and valid. Given their educational backgrounds, these individuals likely deeply understood the issues discussed.

The qualifications of the respondents reflect a forward-thinking approach to education, supporting the development of a knowledge-based society. This aligns with the findings of Wilson (2021), who emphasizes that education significantly influences an individual's personality and problem-solving abilities. Overall, the

respondents' qualifications underscore the importance of education in shaping informed individuals capable of addressing complex challenges.

4.2.5 Marital Status of Respondents

The researcher also explored the marital status of the respondents. The findings revealed that 90% were married, 10% were single, and none were divorced, as shown in Table 4.5 below.

Table 4.5: Marital Status of the Respondents

Responses	Frequency	Percent %
Married	90	90
Single	10	10
Divorced	00	00
Total	**100**	**100**

Source: Field Data, 2021

The data in Table 4.4 overviews the respondents' marital status, showing that 90% are married, 10% are single, and none reported divorce. This distribution reflects a predominantly married sample, which may be influenced by the social and cultural norms of the study area, where marriage is commonly viewed as the expected status. The large proportion of married respondents suggests they bring valuable insights shaped by their life experiences and familial responsibilities. This context is particularly relevant in examining educational practices and family dynamics, as married respondents may offer unique perspectives on how their family structure impacts teaching and learning environments.

4.3 Findings as Per Research Objectives

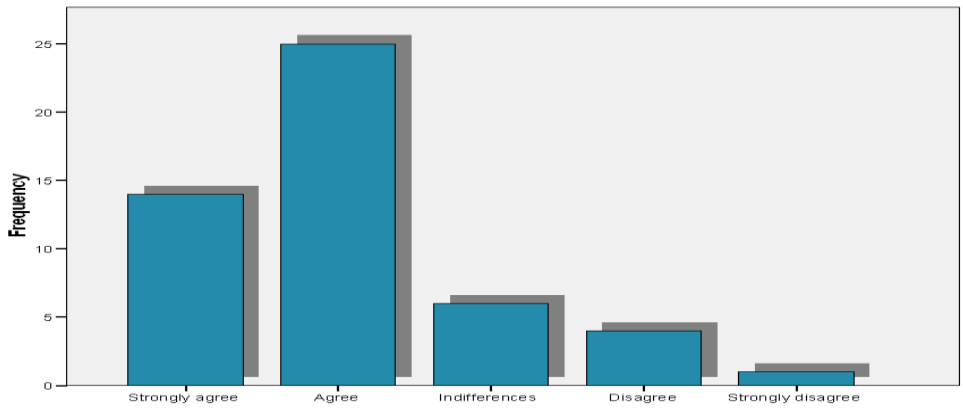
4.3.1 Objective One

This objective aimed to assess the impact of pupil-teacher ratios on teachers' workloads in public primary schools. It was addressed by examining the following variables:

4.3.1.1 PTR Affects Number of Lessons Taught Per Teacher

The study revealed that teachers with larger class sizes were tasked with handling more assignments, assessments, and grading, which resulted in a heavier workload and greater time commitments, ultimately impacting student performance. The analysis showed that most respondents concurred with this finding, as depicted in Figure 4.4 below:

Figure 4.2 Responses Feedback Summary on Number of Lessons



Source: Summary of Collected Field Data (2024**)**

The data presented in Table 4.4 highlights that 65% of students agreed that larger class sizes contribute to an increased teacher workload. Of this group, 35% strongly

agreed, while 30% agreed. However, 20% of respondents remained neutral, neither agreeing nor disagreeing, and 5% disagreed with the statement. This distribution reveals a clear consensus among most participants about the challenges posed by larger class sizes. The fact that 65% of respondents linked increased workload to larger class sizes underscores the potential implications for educational quality and teacher effectiveness. Larger classes place greater pressure on teachers, limiting the time and attention they can give each student. The presence of neutral responses (20%) may reflect uncertainty or a lack of direct experience with the impacts of class size on workload. Additionally, the 5% who disagreed may hold differing views or experiences, suggesting that not all educators perceive a direct link between class size and workload. These insights are crucial for policymakers and educational leaders, emphasizing the need for adequate support, resources, and potentially smaller class sizes to improve teacher effectiveness and student outcomes.

This finding is consistent with the research by Nguyen and Lee (2020), who argue that the pupil-teacher ratio (PTR) significantly impacts the number of lessons a teacher can deliver. Larger class sizes often result in teachers facing time constraints, making it difficult to manage their lessons effectively. Additionally, increased class sizes demand more attention to classroom management and individual student needs, reducing the time for instruction. Therefore, maintaining an optimal PTR ensures teachers can deliver lessons effectively and achieve better student outcomes.

To further corroborate the findings from the student questionnaires, the researcher conducted interviews with teachers. The consistency between the questionnaire results and interview responses further strengthens the credibility of the research. One teacher commented during the interview:

In classrooms with more students, I spend much time managing behaviour and maintaining order, which takes away from the time I can spend teaching and engaging with the material. Meeting each student's needs is also harder since I'm constantly asked for help. This impacts the quality of instruction because I am focusing more on classroom management than teaching.

This teacher's perspective reveals the significant impact of large class sizes on the ability to deliver effective instruction. The increased time spent managing behaviour and maintaining order detracts from the time available for teaching lessons and engaging with the curriculum. The teacher also highlighted the challenge of addressing individual student needs, as the demands of a large class make it difficult to provide personalized attention. This finding aligns with research by Kutsyuruba et al. (2019), which suggests that large class sizes negatively impact a teacher's ability to deliver high-quality instruction. Teachers in crowded classrooms often shift from interactive learning experiences to lecture-based approaches, which may not cater to diverse learning styles. As a result, teaching effectiveness may be diminished, leading to lower student engagement and achievement.

Moreover, large class sizes can contribute to teacher burnout and job dissatisfaction, increasing turnover rates. High turnover rates further complicate student learning continuity and teacher recruitment. The quality of teacher-student relationships, essential for effective learning, may also suffer in larger classes with limited personal interactions.

An education officer also confirmed the adverse effects of a high pupil-teacher ratio, noting that it not only affects the number of subjects and lessons a teacher can

manage but also contributes to increased teacher turnover. The education officer explained:

> *A high pupil-teacher ratio (PTR) impacts the number of subjects and lessons each teacher handles. It also leads to more teachers seeking transfers to districts with more manageable class sizes as the stress and workload become overwhelming. The imbalance between the number of students and teachers creates a challenging teaching environment, prompting many teachers to look for opportunities in areas where they can better manage their workload.*

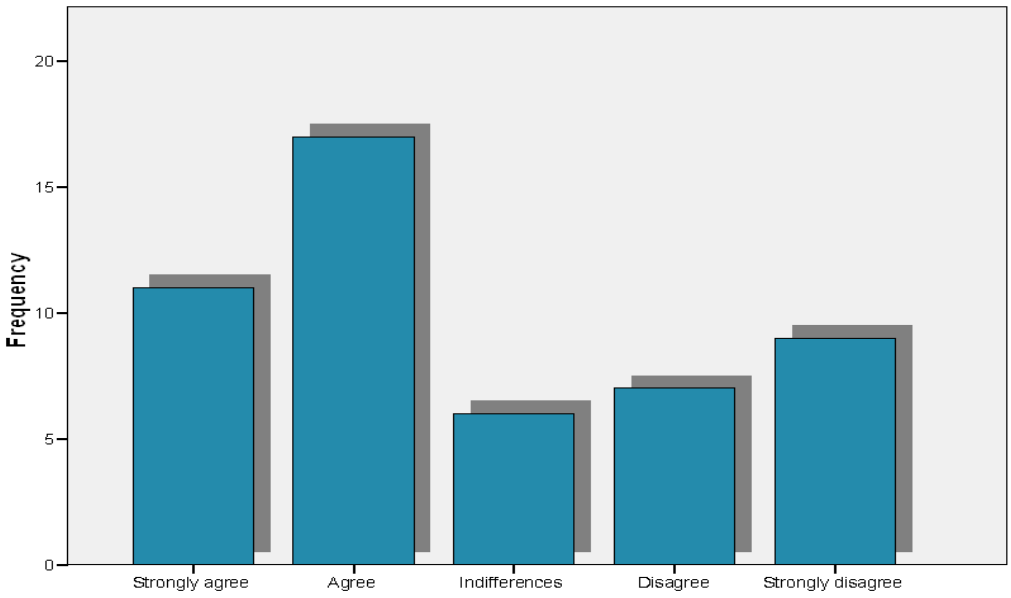
The education officer's response reveals that the high PTR significantly affects teachers' ability to deliver the curriculum across multiple subjects. Teachers often prioritize classroom management over teaching, limiting their ability to cover all curriculum aspects effectively. The high PTR also contributes to a rise in teacher transfers, as many teachers seek out environments where they can work with smaller classes. This trend highlights the importance of managing PTR to reduce teacher stress and improve job satisfaction, ultimately leading to better teaching quality and student learning outcomes.

These findings align with the study by Williams and Taylor (2023) in the United Kingdom, which highlights that a high pupil-teacher ratio (PTR) limits teachers' ability to cover a wide range of subjects. Teachers facing large class sizes struggle to balance classroom management with lesson delivery, resulting in a reduced depth of instruction and negative impacts on student learning. The study underscores the need for optimal PTRs to enable effective teaching and ensure students receive the attention and support they need to succeed.

4.3.1.2 RPTLimit Teachers' Participation in Extra Curriculum

The study revealed that teachers in classrooms with high pupil-teacher ratios (PTRs) encountered considerable difficulties in managing larger class sizes while also attending to the individual needs of their students. Consequently, they often had little time to engage in extracurricular activities, such as participating in after-school programs, joining sports teams, or participating in academic competitions. The findings from the data analysis are illustrated in Figure 4.5 below.

Figure 4.3 Responses Feedback Summary on Participation in Extra Activities



Source: Summary of Collected Field Data (2024)

The data in Figure 4.3 demonstrate a strong consensus among respondents regarding the impact of high pupil-teacher ratios (PTRs) on teachers' ability to engage in extracurricular activities. Specifically, 22 respondents (22.0%) strongly agreed that high PTRs limit teachers' time for such activities, while 37 respondents (37.0%)

agreed to a lesser extent. These figures represent 59.0% of the participants, reflecting widespread recognition of the issue and its effects on teachers' professional development and well-being. In contrast, 13.0% of respondents remained neutral, showing uncertainty about the relationship between PTRs and extracurricular involvement. Additionally, 28 respondents (28%) disagreed, suggesting that for some, high PTRs are not seen as a significant barrier to participation in extracurricular activities, possibly due to differing personal circumstances or levels of engagement.

This finding is consistent with research by López-Agudo et al. (2020) in Spain, highlighting that teachers' extracurricular involvement is often constrained by high PTRs, time pressures, and workload demands. Teachers typically devote more time to classroom management and individualized instruction when faced with larger class sizes, leaving them with less capacity for additional responsibilities. The pressure to meet standardized testing requirements and cover extensive curriculum content limits their opportunity to participate in school clubs, sports, and other extracurricular activities.

The study's findings also align with Bandura’s (1986) social learning theory, which suggests that high PTRs inhibit a teacher’s ability to engage effectively with all students. According to this theory, a teacher’s role extends beyond delivering lessons, including providing learning resources, fostering student participation, accommodating individual differences, and promoting hands-on, experiential

learning. High PTRs impede these essential functions, ultimately diminishing the quality of students' educational experience and social development.

To gain further insight, the researcher interviewed a head teacher, who commented:

> *As a head teacher, I see firsthand how high pupil-teacher ratios limit our teachers' ability to engage in extracurricular activities. When overwhelmed with large class sizes, they focus on managing the classroom rather than enriching our students' experiences outside of academic lessons. We must address this issue to foster a well-rounded education for our students.*

A similar perspective was expressed by a teacher, who stated:

> *A high pupil-teacher ratio really affects my ability to participate in extracurricular activities. With so many students to manage, I often feel stretched thin and can't dedicate the time I want to clubs and sports. It's frustrating because I know these activities are important for developing students' skills and interests beyond the classroom.*

Both the head teacher’s and the teacher’s responses reflect the significant concern regarding the effects of high PTRs on their involvement in extracurricular activities. The head teacher emphasized the broader issue of large class sizes, noting that when teachers are overwhelmed, their ability to provide enriching experiences outside the classroom is compromised. Similarly, the teacher’s personal experience highlights how high PTRs lead to feelings of being overstretched, making it difficult to dedicate time and energy to fostering students' growth beyond academic lessons.

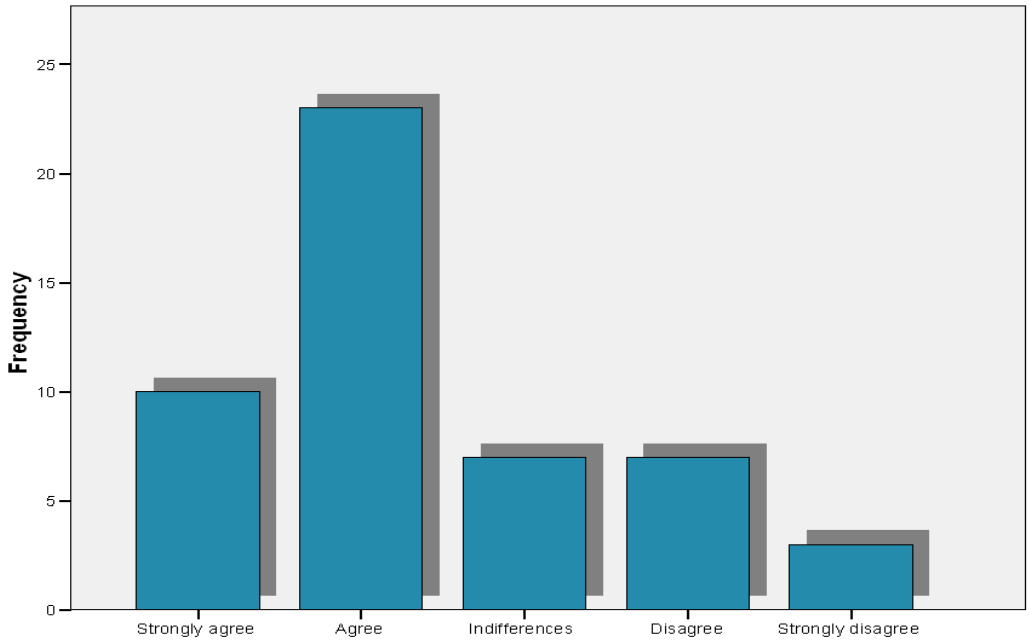
These findings underscore the importance of extracurricular activities in providing a well-rounded educational experience. When teachers' workloads become overwhelming due to high PTRs, these activities often take a backseat, depriving students of valuable enrichment opportunities. This conclusion is supported by Baker et al. (2022), who found that teachers in the United States also struggle to balance the

demands of large class sizes with the desire to engage in extracurricular activities. This imbalance hampers their ability to contribute to student's holistic development and highlights the tension between educational ideals and practical constraints.

4.3.1.3 Limit Teachers' Involvement In Administration

Restrictions on teachers' involvement in administrative tasks can limit their professional growth and hinder the overall effectiveness of schools. High pupil-teacher ratios result in heavier workloads, making it difficult for educators to make decisions. This lack of involvement can prevent sharing valuable perspectives and diminish teachers' sense of ownership and investment in the school. Reducing teachers' workloads and actively encouraging their participation in administrative duties is essential to improve the education system. The study found that pupil-teacher ratios significantly affect teachers' ability to engage in administration, impacting factors such as time availability, workload, teaching priorities, access to opportunities, resource distribution, professional development, and the broader school culture. The data supporting these findings are presented in Figure 4.6 below.

Figure 4.4 Responses Feedback Summary on Collateral Free Loan



Source: Summary of Collected Field Data (2024)

The data in Figure 4.4 reflects varying degrees of agreement regarding the effects of high pupil-teacher ratios (PTR) on educational outcomes. Specifically, 20 respondents (20.0%) strongly agreed, while 46 (46.0%) agreed. Additionally, 14 respondents (14.0%) were neutral, neither agreeing nor disagreeing, and 20 (20.0%) disagreed. Further analysis shows that 14.0% strongly agreed, and 6.0% agreed with the related statements. These findings are consistent with the study by Rahman et al. (2022) in Bangladesh, which examines the impact of high PTRs on teachers' workloads in public primary schools. The results suggest that large class sizes increase teachers' workloads, making it difficult to cover the full curriculum in the allotted time. Moreover, elevated PTRs hinder individualized learning, leading to poor subject performance and a diminished learning experience. This highlights the

need for strategic interventions to reduce class sizes and improve teaching effectiveness and educational outcomes.

In an interview with a head teacher, it was revealed:

> *The high pupil-teacher ratio makes it difficult for our teachers to perform administrative tasks. With so many students to manage, they are stretched thin and often prioritize classroom duties over contributing to school governance.*

Similarly, a teacher shared the following during their interview:

> *Reducing our administrative workload would allow us to focus on what matters—teaching and supporting our students' growth. Too much time spent on paperwork takes away from the time we need to prepare quality lessons and engage meaningfully with our students.*

These responses from the head teacher and teacher underscore the need to minimize non-teaching responsibilities, enabling educators to focus on their core duties: teaching and fostering student development. Teachers often feel overwhelmed by administrative tasks such as paperwork, which detracts from their ability to prepare lessons and provide individualized attention to students. As a result, teaching quality suffers.

The findings further suggest that high PTRs intensify these challenges. With many students to manage, teachers find their time and energy stretched, making engaging in school governance or administrative tasks even harder. In these circumstances, teachers prioritize classroom responsibilities, directly affecting student outcomes, over administrative duties. This results in decreased teaching and administrative work quality, as teachers cannot dedicate enough time or attention to either area.

These findings align with research by Skaalvikand Skaalvik (2020) in Norway, which highlights that teachers facing high PTRs and heavy administrative workloads

experience increased role conflict. This conflict makes it difficult for teachers to balance teaching with administrative responsibilities. The study suggests that when teachers are overloaded, they experience higher stress levels and are forced to prioritize classroom instruction over administrative tasks. Reducing the administrative burden would enable teachers to focus more on student-centred activities, enhancing lesson quality and benefiting student outcomes.

4.3.1.4 Admission of New Students

As the pupil-teacher ratio (PTR) increases, schools face limitations in admitting new students. The growing number of students strains available space and resources, making it difficult to accommodate additional enrollments. This imbalance restricts the school's capacity to expand and serve a larger student population. The results of the analyzed data on this is shown in Table 4.2 below:

Table 4.6 Respondents Feedback Summary on Mobile phones and SMS

	Frequency	**Percent**	**Cumulative Percent**
Strongly agree	36	36.0	36.0
Agree	40	40.0	76.0
Indifferences	8	8.0	84.0
Disagree	10	10.0	94.0
Strongly disagree	6	6.0	100.0
Total	100	100.0	

Source: Summary of Collected Field Data (2024)

The analysis reveals that increasing class sizes significantly contributes to the strain on teachers, as they must provide more guidance and support while adapting to larger groups. Specifically, 60.0% of respondents strongly agree, and 40.0% agree,

indicating a consensus among teachers that larger class sizes lead to an increased workload. On the other hand, 8.0% of respondents are indifferent, implying that a small portion of teachers do not perceive class size as a significant factor affecting their workload. Meanwhile, 16.0% disagree, suggesting that some teachers may have developed effective strategies or support systems, such as teaching assistants, that help them manage larger classes.

These findings point to the increased demands of teaching more prominent groups, making it more difficult for teachers to offer personalized attention and maintain effective classroom management. Teachers often need to spend additional time on discipline, assisting struggling students, and ensuring overall engagement, which can lead to burnout and diminished teaching quality.

Research by Bettencourt and Trudel (2022) in Canada supports this perspective, highlighting that an increased pupil-teacher ratio (PTR) heightens teacher workload and stress, as larger classes make it harder to balance classroom management with effective instruction. The increased time and energy required for managing big classes reduce the ability to focus on individualized teaching and student development. However, the 16% who disagreed may reflect teachers who have adapted to larger classes by developing coping mechanisms or having access to additional resources, such as teaching assistants, to help with the added responsibilities. Furthermore, some educators may not view class size as a significant challenge, particularly if they feel well-equipped to manage the additional workload or teach subjects less impacted by large groups.

Descriptive Summary

The following table shows the descriptive analysis of Pupils' Teachers ratios with a five-point Likert scale flat statement on the effects of PTR on Teachers' Workload, as shown in Table 4.6 below.

Table 4.7: The Effects of PTR on Teachers Workload

The Effects of PTR on Teachers Workload	Mean	Rank
PTR affects the number of lessons taught per teacher	4.60	1
PTR affects the number of subjects taught per teacher	3.87	2
PTR affects teacher participation in extracurricular activity	4.31	3
PTR affects teachers' involvement in the administration	4.20	4
PTR affects the admission of new pupils	4.10	5
I handle many other administrative duties in addition to teaching load	4.33	6
There are so many pupils in my class that I cannot be able to offer individualized attention to each pupil	4.31	7
The Pupils ratio in my class is 40:1	1.89	8
My involvement in extracurricular activities adds strains to my already heavy workload	3.13	9
Total mean	**3.86**	**High**

Source: Field data, 2024

Key:

Rating scale

	Mean Range	**Response made**	**Interpretation**
1.	1.0-1.8	Strongly Disagree	Very Low
2.	1.9-2.5	Disagree	Low
3.	2.6-3.3	Neutral	Moderate
4.	3.4-4.1	Agree	High
5.	4.2-5.0	Strongly Agree	Very high

Data presented in Table 4.6 indicates that the mean score for the impact of the pupil-teacher ratio (PTR) on teacher workload in public primary schools is 3.86, which falls within the "agree" range on the Likert scale. This suggests that, overall, teachers perceive the effect of PTR on their workload as considerable. A higher PTR typically leads to increased workload, as larger class sizes demand more time, energy, and resources from teachers. This finding aligns with the common understanding that managing larger groups of students imposes more significant challenges, such as limited time for addressing individual student needs, more difficult classroom management, and heightened administrative duties. These added responsibilities can result in higher stress levels, burnout, and diminished job satisfaction. The high mean score of 3.86 reinforces that most teachers view PTR as a significant factor contributing to their workload, underscoring the need to manage class sizes for effective teaching and learning.

Different studies support this view that high PTR contributes to teacher workload and negatively impacts teaching quality. For instance, Bettencourt and Trudel (2022) found a strong correlation between increased PTR and higher teacher workload in Canada. Their research highlighted that larger classes compel teachers to devote more time to classroom management, leaving less time for instruction and reducing teaching quality, which leads to greater stress. Aftab et al. (2023) in Pakistan also reported that higher PTRs hinder teachers' ability to provide individualized attention, increasing workload and contributing to teacher dissatisfaction.

However, not all research agrees that high PTR universally worsens teacher workload. Manning & DeLuca (2021) in Australia argue that the impact of class size

on teacher workload is not always straightforward. They found that experienced teachers may effectively manage larger classes without experiencing a significant increase in stress or workload. Their study suggested that factors such as teacher experience, teaching methods, and the availability of support staff can influence how PTR affects workload. Similarly, Huang & Liu (2022) in China found that PTR alone does not necessarily lead to higher teacher workload. Their research indicated that additional resources, such as teaching assistants and small-group instruction, can alleviate the burden of large classes, minimizing the negative effects of high PTR.

4.3.2 Objective Two

This objective explored the impact of the pupil-teacher ratio on the effectiveness of evaluation methods in public primary schools. The analysis, findings, and discussions focused on several related variables:

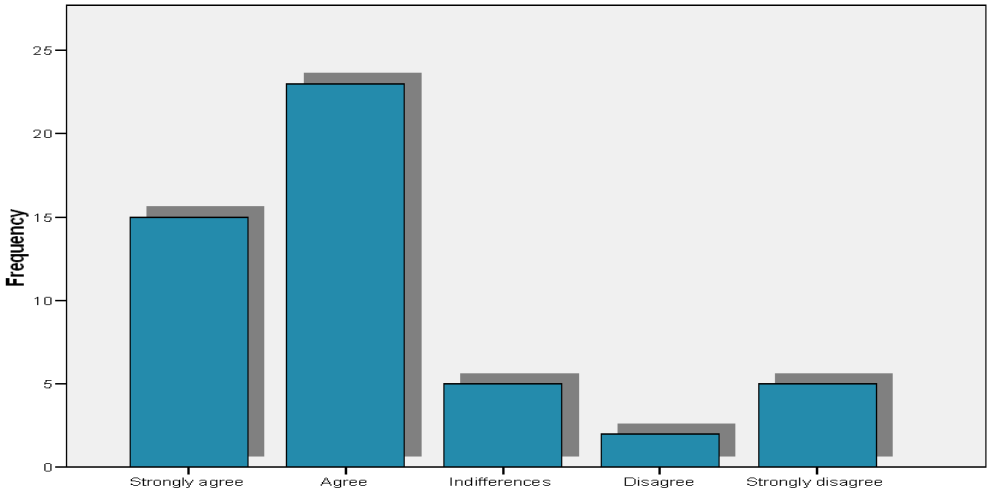
4.3.2.1 The Impact of PTR on School Formative Evaluation Policy

The Pupil-Teacher Ratio (PTR) significantly affects the effectiveness of school formative evaluation policies. A lower PTR allows for more individualized attention and timely feedback, improving formative assessment quality. On the other hand, a high PTR can overwhelm teachers, diminishing the quality of individual evaluations and slowing student progress. Therefore, schools with lower PTRs are better positioned to implement effective formative evaluation practices.

The study reveals that PTR influences various key components of school formative evaluation policies, including teacher workload, resource distribution, data analysis, collaboration, and student support services. Data analysis indicates that a substantial

proportion of respondents agree with this view, supporting the idea that a lower PTR contributes to more effective formative evaluation. The results of the analysis are illustrated in Figure 4.7 below.

Figure 4.5 Respondents Feedback Summary on PTR and Formative Evaluation



Source: Summary of Collected Field Data (2024)

The data analysis in Figure 4.7 illustrates the distribution of responses regarding the influence of the Pupil-Teacher Ratio (PTR) on formative evaluation policies. The breakdown reveals that 30% of respondents strongly agreed, 35% agreed, 20% were neutral, 5% disagreed, and 10% strongly disagreed. This indicates that most (65%) respondents believe PTR significantly affects teachers' ability to carry out formative assessments. This consensus supports the idea that larger class sizes, or higher PTRs, may hinder teachers' capacity to conduct regular Continuous Assessment Tests (CATs) and assignments, which are essential for monitoring student progress and ensuring educational outcomes. The national competence-based curriculum stresses the importance of regular assessments to evaluate students’ grasp of concepts.

However, teachers in larger classes may find it challenging to provide individualized attention, offer timely feedback, and consistently design and grade assessments. This ineffective formative assessment can contribute to poor mid-term, term, and national exam performance.

These findings are consistent with Nguyen et al. (2023), who conducted a study in Vietnam and found that large class sizes limited teachers' ability to give timely feedback or manage regular assessments, leading to poor student performance. Similarly, Kwek et al. (2022) observed in Singapore that high PTRs resulted in less time for assessment activities, diminishing the quality of formative evaluations. These studies emphasize how high PTR can negatively affect teachers' workload, feedback timeliness, and student learning outcomes. A study by Johnson et al. (2022) in the UK found that larger class sizes compromised teachers' ability to provide individual feedback or conduct frequent assessments, affecting the quality of formative evaluations and student performance. These findings suggest that smaller PTRs enable teachers to engage more closely with students and better manage the assessment process.

However, other studies challenge the direct correlation between PTR and the effectiveness of formative evaluations. Thompson and Lee (2023), for instance, argued in a U.S. study that while PTR matters, it is not the sole determinant of formative evaluation quality. Their research indicated that teacher effectiveness, curriculum quality, and school resources are more influential factors. Even in schools with high PTRs, well-trained teachers with access to technology and other resources could implement effective assessment strategies. Similarly, Zhang et al. (2023) in

China suggested that large class sizes do not necessarily hinder effective formative assessments, especially when teachers utilize peer assessments, group work, and digital tools to manage the evaluation process. This implies that while PTR is a factor, other strategies can offset its potential negative effects on evaluation quality.

The majority view in this study, which emphasizes the significant impact of PTR on formative evaluation, highlights the challenges large class sizes face in implementing consistent and personalized assessments. This finding is particularly relevant in national curricula prioritizing continuous assessment to improve learning outcomes. However, the contradictory findings from other studies also provide valuable perspectives. They suggest that teacher expertise, the use of technology, and collaborative teaching methods can mitigate the adverse effects of high PTRs. Consequently, while reducing PTR could improve the quality of formative assessments, it is not the only solution. Policymakers and school administrators should also focus on teacher training, classroom management strategies, and technological tools to enhance the assessment process, regardless of class size.

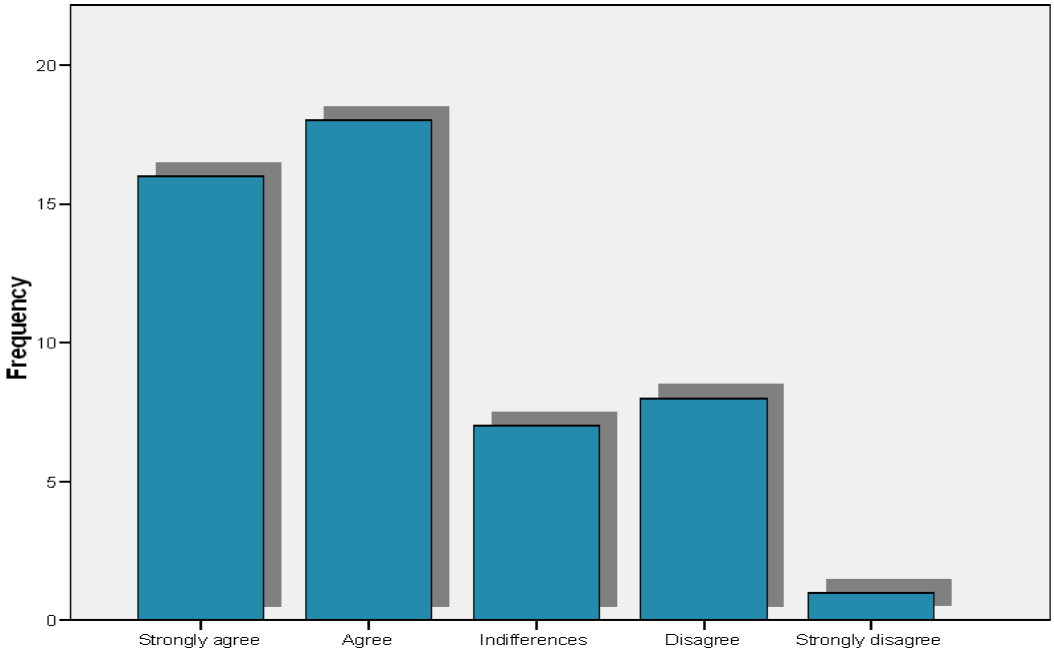
4.3.2.2 PTR and Regular Assessment of Pupils

A high PTR poses challenges for regular assessments, as larger class sizes limit the time available for individualized feedback and tracking student progress. This can lead to less frequent or less accurate assessments. In contrast, a lower PTR enables more frequent and personalized evaluations, improving feedback and student outcomes.

The analysis indicates that PTR influences several factors critical to the regular assessment of pupils through Continuous Assessment Tests (CATs), including

assessment quality, individualized attention, feedback and intervention, data management, resource allocation, and equity. These factors collectively impact the overall effectiveness of the assessment process, as summarized in Figure 4.

Figure 4.6 Responses Feedback Summary on PTR Affects Regular Assessment



Source: Summary of Collected Field Data (2024)

The data analysis in Figure 4.7 shows the distribution of responses regarding the impact of the Pupil-Teacher Ratio (PTR) on formative evaluation policies. Of the respondents, 30% strongly agreed, 35% agreed, 20% were neutral, 5% disagreed, and 10% strongly disagreed. This indicates that a substantial majority (65%) of respondents believe that PTR significantly influences teachers' ability to conduct formative evaluations effectively. This view suggests that higher PTRs, associated with larger class sizes, may restrict teachers’ capacity to carry out frequent Continuous Assessment Tests (CATs) and assignments, which are crucial for

monitoring student progress and achieving learning goals. As the national competence-based curriculum outlines, regular assessments are essential to assess students' understanding. However, teachers in large classes often face difficulties providing individualized attention, delivering timely feedback, and consistently designing and grading assessments. This lack of effective formative evaluation can contribute to poor mid-term, term, and national examination outcomes.

These findings align with recent studies that highlight the adverse effects of high PTR on formative evaluations. For example, Adama et al. (2023) in Ghana found that large class sizes made it challenging for teachers to provide timely feedback and regularly manage assessments, leading to poorer student outcomes. Similarly, Ochieng et al. (2022) in Kenya concluded that high PTRs compromised the quality of formative assessments because teachers could not monitor students' progress and intervene effectively. These studies, including the current one, emphasize that higher PTRs increase teachers' workloads, delay feedback, and negatively impact assessment quality, all hindering student performance.

Research from Nigeria by Eze et al. (2023) also supports these findings, showing that teachers in schools with high PTRs struggled to conduct regular assessments and provide individualized attention for effective formative evaluations. Teachers reported feeling overwhelmed by large class sizes, which resulted in missed opportunities for timely feedback and early identification of struggling students. These results reinforce that smaller PTRs allow teachers to engage more deeply with students and effectively manage the assessment process.

However, some studies question the direct link between PTR and the quality of formative evaluations. For instance, Adebayo et al. (2022) in South Africa suggested

that while high PTRs can present challenges, other factors, such as curriculum quality, teacher training, and the use of technology, play a more significant role in determining assessment effectiveness. Their study found that even in schools with high PTRs, well-trained teachers with access to technology could still implement effective formative evaluations, providing timely feedback and tracking student progress.

Similarly, a Zulu et al. (2023) study in Zambia showed that despite larger class sizes, teachers could still manage formative evaluations effectively by using strategies such as peer assessments, group work, and digital tools to streamline the process. This suggests that while PTR is an essential factor, it is not the only determinant of evaluation quality. Innovative teaching methods, efficient resource management, and technology integration can help mitigate the adverse effects of high PTRs.

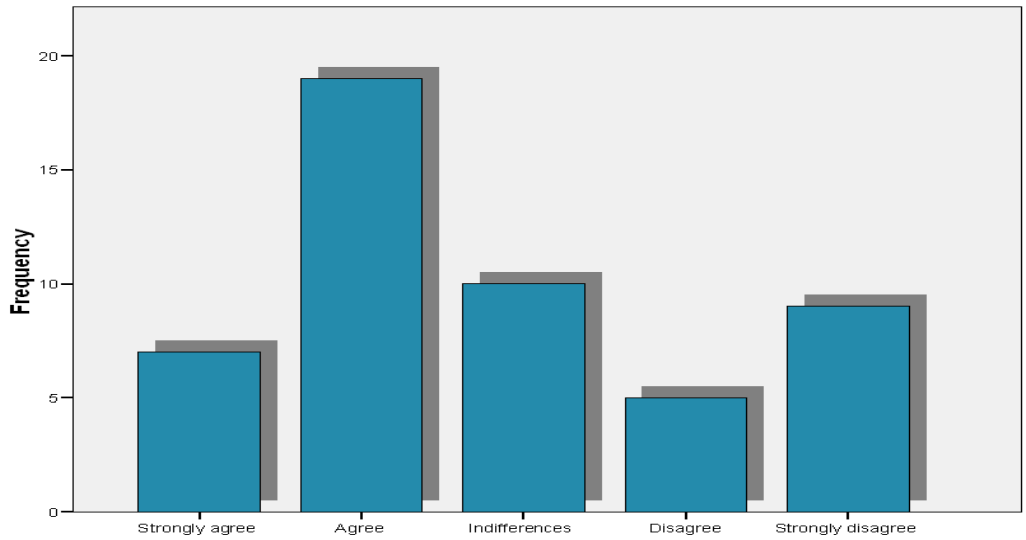
The majority opinion in this study, which emphasizes the significant impact of PTR on formative evaluation effectiveness, supports the view that larger class sizes limit teachers' ability to provide personalized and consistent assessments. This is especially important in curricula prioritizing continuous assessment to enhance student learning outcomes. Nevertheless, the studies that challenge this direct relationship provide valuable insights. They suggest that factors like teacher expertise, the use of technology, and collaborative teaching strategies can help mitigate the adverse effects of high PTR. This implies that reducing PTR may improve formative evaluation quality is not the only solution. Policymakers and school administrators should also focus on investing in teacher training, developing innovative classroom management strategies, and integrating technology to strengthen formative assessment practices, regardless of class size. The study's

findings indicate that although high PTR poses challenges for effective formative evaluations and negatively impacts student performance, it is just one of several factors influencing assessment quality. A comprehensive approach that combines efforts to reduce class sizes with improvements in teacher training, curriculum design, and the use of technology could significantly improve formative evaluation effectiveness in schools.

4.3.2.3 PTR and Supervised Classroom Assessment

The study finds that PTR significantly impacts supervised classroom assessments by limiting individualized attention, impeding effective monitoring, and increasing teacher workload. In large classes, teachers face difficulties in managing the testing environment, providing timely feedback, and efficiently allocating resources, all of which can diminish the quality of assessments. A high proportion of respondents agreed that PTR affects critical factors such as teacher workload, feedback, resource allocation, and overall assessment quality, highlighting the importance of PTR in shaping the effectiveness of classroom assessments. The results of this data analysis are presented in Figure 4.9 below.

Figure 4.7 Responses Feedback Summary on PTR Affects Supervised Classroom



Source: Summary of Collected Field Data (2020)

The data analysis presented in Figure 4.9 highlights a range of responses regarding the influence of the Pupil-Teacher Ratio (PTR) on supervised classroom assessments. A significant 38% of respondents (38 participants) strongly agreed that PTR has a notable impact on the quality of assessments, while 18% (18 participants) agreed. However, 20% were neutral, indicating uncertainty or differing experiences across schools. Additionally, 10% expressed moderate satisfaction with PTR's effect on assessments, and 18% strongly disagreed with the assertion that PTR affects the quality of classroom assessments.

This distribution reveals a clear majority (56%) who believe that high PTR negatively influences the quality of supervised assessments. However, the remaining respondents who disagree or remain uncertain may reflect variations in school

contexts, teacher training, or available resources, which could influence how PTR is perceived and its actual effect on assessment outcomes.

These findings align with previous research from East Africa on the relationship between PTR and the quality of classroom assessments. In Tanzania, Mhando and Sanga (2023) found that large class sizes hindered teachers' ability to manage assessments effectively. Teachers in schools with high PTRs struggled to provide individual attention, monitor students during tests, and create conducive testing environments, resulting in poorer outcomes. Similarly, Kamugisha and Nyundo (2022) in Uganda observed that high PTRs increased teacher workloads, leaving less time for timely feedback, which is crucial for improving student assessment performance. In Kenya, Njoroge et al. (2022) confirmed that high PTRs presented challenges in managing assessments, including difficulties in monitoring student behaviour and providing necessary interventions. Teachers reported being overwhelmed by large classes, leading to delays in feedback and grading, which negatively affected the learning process.

However, some studies question the direct link between PTR and assessment quality. For example, Uwimbabazi et al. (2023) in Rwanda acknowledged that high PTRs create challenges. However, they suggested that factors such as teacher effectiveness, classroom management skills, and technology integration can help mitigate the adverse effects of large class sizes. They found that schools using technology and providing adequate teacher training could maintain high assessment quality even with larger classes. Similarly, research by Zhang et al. (2023) in China showed that digital tools and peer assessments could help manage assessment loads in large

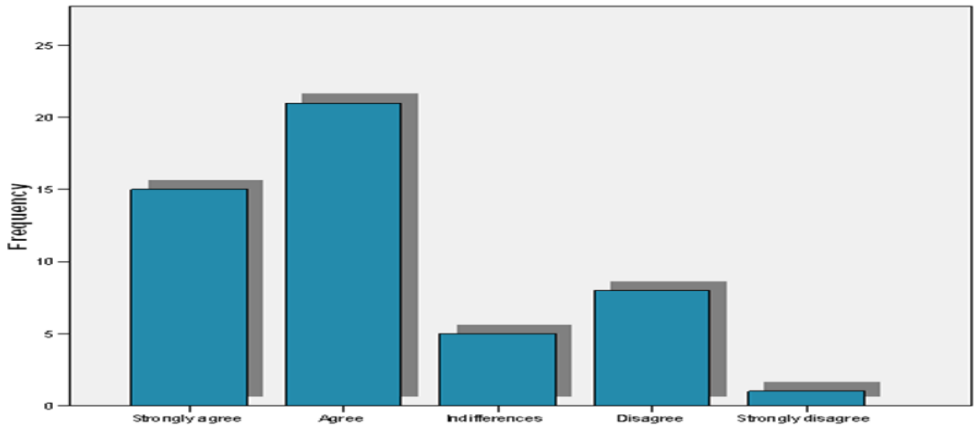
classes. While this may not be feasible in all East African contexts due to resource constraints, it underscores the point that PTR alone may not be the sole factor affecting the quality of supervised assessments.

Most respondents in this study agree that PTR significantly impacts the quality of classroom assessments, consistent with findings from countries like Tanzania, Uganda, and Kenya, where high PTRs have been shown to negatively affect teacher workload, student monitoring, and feedback. However, the contrasting views expressed by a small group of respondents point to the issue's complexity, suggesting that factors such as teacher skill, resource availability, and innovative assessment strategies can help mitigate the challenges posed by high PTRs. These insights indicate that reducing PTR can improve assessment quality, which is not a complete solution. Policymakers and school administrators should also prioritize teacher professional development, classroom management strategies, and technology integration to improve assessment processes, particularly in schools with high PTRs. A multi-faceted approach can help minimize the adverse effects of high PTRs on supervised assessments, leading to better student learning outcomes.

4.3.2.4 PTR and Internal Test Setting

The analysis reveals that teachers in schools with high PTRs often struggle to design assessments that accurately reflect students' understanding and knowledge. With increased PTRs, creating exams that comprehensively cover the curriculum, accommodate diverse learning styles, and assess students across different skill levels becomes more challenging. Many respondents supported this view, as shown in Figure 4.10 below.

Figure 4.8 Responses Feedback Summary on PTR Affects Setting of Internal Test



Source: Summary of Collected Field Data (2024)

The data analysis shown in Figure 4.10 reveals that most respondents (72%) believe that high Pupil-Teacher Ratios (PTRs) make it difficult for teachers to design assessments that effectively measure students' knowledge and understanding. Specifically, 30% of respondents strongly agreed, while 42% agreed. However, 10% were neutral, suggesting some uncertainty or variation in experiences. A smaller portion (16%) disagreed, and only 2% strongly disagreed. These results indicate that, despite some variation, most respondents feel that larger class sizes complicate creating assessments that accurately reflect students' abilities and progress.

These findings align with research from Tanzania and other East African countries. In a study by Ibrahim and Mussa (2023) in Tanzania, teachers in schools with high PTRs reported difficulties designing assessments that captured the diverse range of student abilities. With large class sizes, teachers often resorted to generic exams that failed to address varying levels of student understanding, leading to assessments that

did not effectively gauge comprehension. Similarly, research in Kenya by Wambui et al. (2022) highlighted that the overwhelming number of students in large classes made it challenging for teachers to design thorough assessments tailored to individual learning needs. Teachers found it difficult to cover the full curriculum, and assessments often became rushed or overly general.

However, some studies argue that PTR is not the sole determinant of assessment quality. For example, Nguvumali and Lusi (2023) in Tanzania emphasized the importance of teacher professional development in ensuring the design of effective assessments, even in schools with high PTRs. They suggested that teachers could create more accurate and impactful assessments with adequate training in assessment techniques, even in large classes. Additionally, integrating technology, such as digital assessment platforms, alleviated some challenges high PTRs pose.

Similarly, a study by Ayub et al. (2022) in Uganda showed that, despite the challenges of high PTRs, teachers who employed innovative strategies like group assessments or peer reviews could design assessments that more effectively reflected student learning. This research highlighted that while PTR is a significant factor, its negative effects can be mitigated by adopting creative assessment methods that make the most available resources.

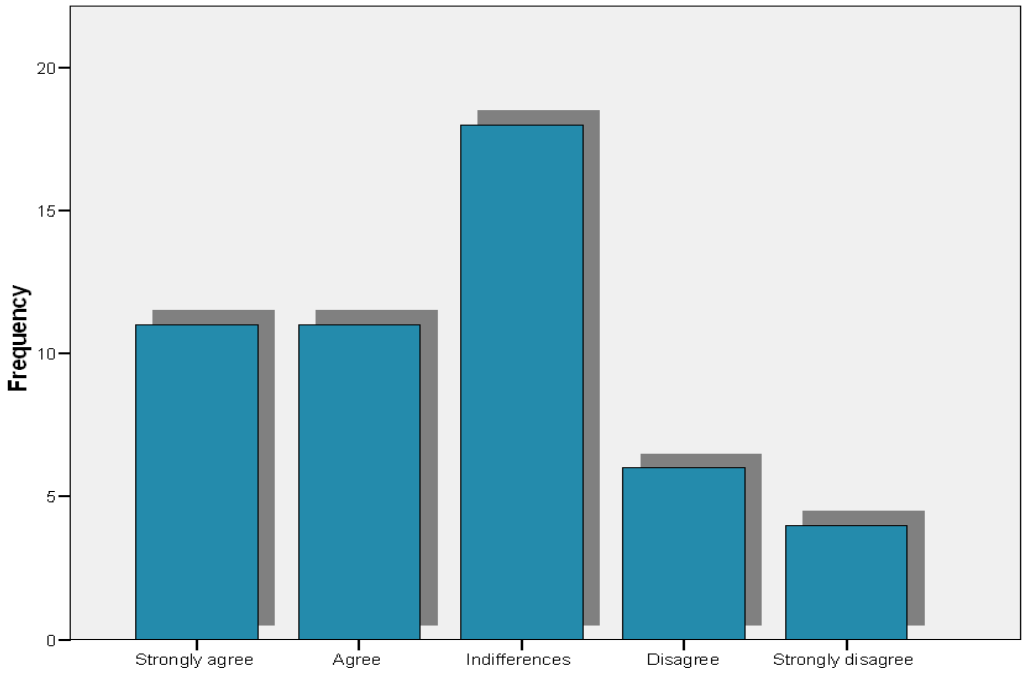
The majority of respondents in this study agree that high PTRs negatively affect the design of effective classroom assessments. This view is consistent with studies from Tanzania and other East African nations. These studies suggest that large class sizes limit teachers' ability to create assessments that accurately assess student understanding and cater to diverse learning needs. However, other research underscores the role of teacher training, innovative assessment strategies, and

technology integration as ways to counterbalance the negative impacts of high PTRs. While reducing PTR remains important, it is clear that improving teacher skills and exploring alternative assessment methods are crucial to enhancing assessment quality in large classes.

4.3.2.5 PTR and Resource Allocation for Educational Materials

Respondents also highlighted that PTR can influence how school resources are allocated, particularly in purchasing essential educational materials. In schools with high PTRs, resources are often prioritized for acquiring textbooks and classroom supplies to support teaching in larger classes. The analysis strongly supports this view, as shown in Figure 4.11 below.

Figure 4.9 Responses Feedback Summary on PTR Affects Buying Material



Source: Field data analysis (2024)

The data presented in Figure 4.11 shows that a significant majority of respondents (66%) agree that high Pupil-Teacher Ratios (PTRs) influence resource allocation decisions in schools, particularly regarding purchasing educational materials. Specifically, 22% strongly agreed, and 44% agreed. However, a considerable portion (36%) remained neutral, indicating some uncertainty or variability in their views. Additionally, 20% disagreed with the statement that PTR affects resource allocation in this way. This suggests that while most respondents recognize a connection between PTR and resource distribution, there is still some divergence in opinions.

The finding that PTR influences resource allocation aligns with studies from several countries, including India, Pakistan, Namibia, and Burundi, where large class sizes have been shown to impact how schools allocate resources, especially educational materials. In India, Sharma and Kumar (2022) found that schools with high PTRs often prioritized essential items like textbooks and teaching aids to meet the demands of larger classes. Teachers reported that these schools had to make difficult decisions about spending limited funds, typically focusing on the basics needed for large class instruction, sometimes at the expense of other educational initiatives.

Similarly, in Pakistan, Hussain et al. (2023) found that schools with high PTRs were more likely to allocate funds to essential classroom supplies such as chalk, notebooks, and teaching materials rather than investing in professional development programs or extracurricular activities. The study highlighted that schools with high PTRs often work with constrained budgets, and the immediate need to manage large classes takes precedence, leaving less room for broader educational improvements. Conversely, a study in Namibia by the Namibian Education Commission (2022) showed that while PTRs impact resource allocation, some schools found alternative

solutions by seeking external funding or implementing innovative strategies to address the challenges of high PTRs. These schools could maintain quality teaching resources by partnering with local organizations or utilizing community-based funding, thus reducing the impact of large class sizes on resource distribution.

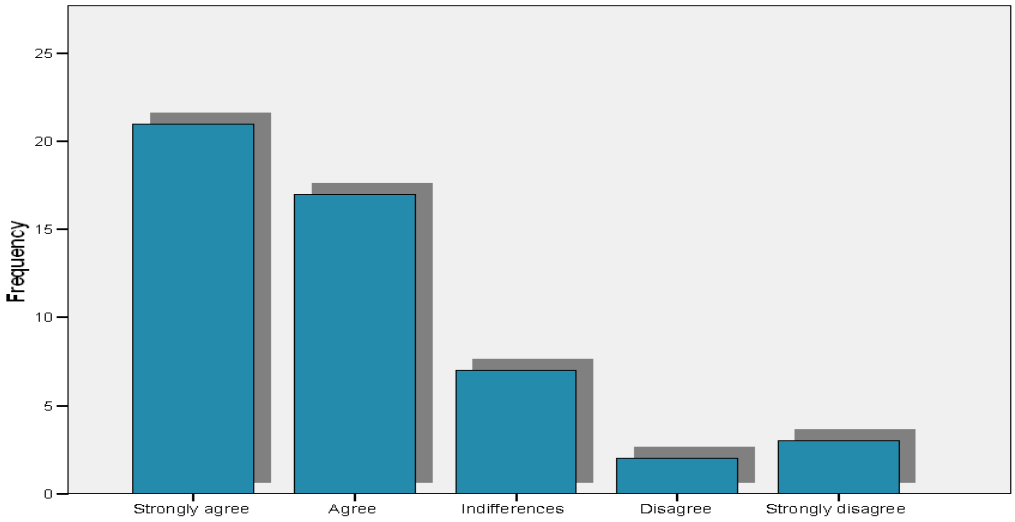
On the other hand, research from Burundi by Niyonsaba et al. (2023) offered a different perspective, indicating that PTR did not directly influence resource allocation as in other countries. The study emphasized that government policies, school leadership, and external aid played a more significant role in determining how resources were distributed. In some cases, government funding and support were sufficient to ensure the provision of necessary materials, even in schools with high PTRs. This suggests that external factors can sometimes mitigate the challenges of large class sizes.

The findings from this study, which show that PTR significantly affects resource allocation decisions, are consistent with research from India, Pakistan, and Namibia, where high PTRs influence how schools prioritize educational materials. These studies underscore that schools with large classes often focus on essential teaching resources to manage increased student numbers. However, the research from Burundi suggests that external factors, such as government policies and leadership strategies, can moderate the effects of PTR on resource allocation. This implies that while reducing PTR may improve resource distribution, enhancing school management and seeking external support is critical to ensuring equitable access to educational materials.

4.3.2.6 Participation in Interschool Formative Evaluation Contests

The analysis also reveals that teachers in schools with high PTRs often experience increased workloads due to larger class sizes and students' varying needs. As a result, these teachers may struggle to find the time or energy to engage in additional activities, such as organizing or participating in interschool competitions. The increased demands of their core teaching responsibilities often leave little room for extracurricular involvement. The data analysis on this issue is presented in Figure 4.12 below.

Figure 4.10 Responses Feedback Summary on Interschool Formative Evaluation



Source: Summary of Collected Field Data (2024)

The analysis further reveals that teachers with high PTRs often face increased workloads due to larger class sizes and the diverse needs of students. As a result, teachers may struggle to allocate time and energy for additional activities, such as

organizing or participating in interschool competitions, especially when overwhelmed by their core teaching responsibilities. The results of the data analysis on this are presented in Figure 4.12 below:

4.3.2.7 PTR Affects Setting of Internal Test:

The data in Figure 4.13 shows broad agreement among respondents about the influence of the Pupil-Teacher Ratio (PTR) on decision-making, especially regarding the administration of weekly tests. A substantial 36% strongly agreed, and 38% agreed that PTR affects various factors, including time management, assessment workload, resource allocation, instructional priorities, and student needs, all of which impact the frequency of weekly tests. Only 12% disagreed, while 14% remained neutral, suggesting that most respondents believe a high PTR significantly challenges teachers' ability to manage regular assessments alongside their other responsibilities.

These findings are consistent with similar studies conducted in other countries, demonstrating the direct impact of PTR on assessment practices. For example, a study in Saudi Arabia by Al-Mutairi et al. (2022) found that teachers in schools with high PTRs struggled to conduct regular assessments, including weekly tests, due to the pressure of managing large classes and addressing diverse student needs. Teachers reported that the time required to assess each student's progress increased substantially, leaving less time for other teaching duties, such as organizing extracurricular activities or curriculum development.

Similarly, a study in Malaysia by Tan and Lee (2023) highlighted that teachers in large classes were forced to reduce the frequency of assessments due to time constraints, often opting for less frequent testing that lacked timely student feedback.

The increased assessment load and limited resources made it difficult for teachers to give individual attention, further diminishing the effectiveness of weekly assessments. A study in Gabon by Nguema and Mba (2022) confirmed that large class sizes led to greater pressure on teachers' time, which hindered their ability to conduct regular assessments. Teachers in Gabon also had to prioritize classroom management over frequent testing, resulting in delayed or scaled-down assessments that negatively affected student performance.

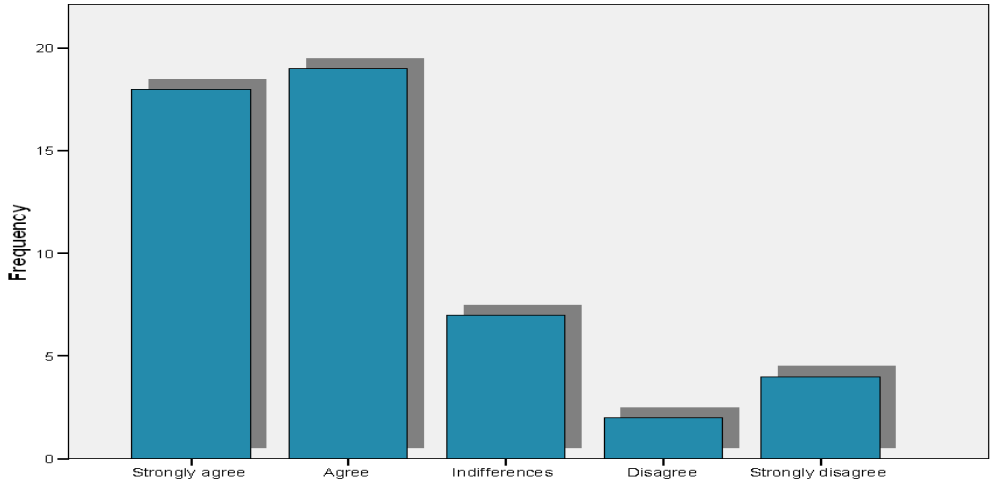
In contrast, a study conducted in Italy by Ricci et al. (2023) found that while high PTRs posed challenges, the Italian education system’s focus on integrating technology helped mitigate some of these difficulties. Teachers in large classes could use digital tools to streamline assessment administration, making weekly tests more manageable despite the high PTR. This highlights that technological support can reduce the impact of high PTRs and enable more regular assessments, even in larger classes.

Similarly, a study in Egypt by Farouk et al. (2022) emphasized that while PTR affected assessment decision-making, teachers' professional autonomy and strong school-level leadership could help offset these challenges. The study found that schools with effective leadership and well-supported teacher networks were better able to maintain regular testing schedules despite large class sizes. This suggests that sound school management and teacher collaboration can alleviate some of the negative effects of PTR on assessment frequency.

The results of this study, which show a clear link between high PTR and limited capacity for regular assessments, align with research from Saudi Arabia, Malaysia, Gabon, and Egypt, where teachers with high PTRs faced increased workloads and

time constraints that hindered their ability to conduct weekly tests and provide timely feedback. However, studies from Italy and Egypt suggest that the impact of high PTRs can be mitigated through technological integration and strong school leadership, which can help support more regular assessments despite large class sizes. These findings underscore that while reducing PTR is important, exploring strategies such as technology adoption, teacher collaboration, and improved school management to enhance assessment practices in high PTR environments is equally crucial.

Figure 4.11 Responses Feedback Summary on PTR Affects Setting of Internal Test



Source: Summary of Collected Field Data (2024)

These findings are consistent with research by Zhang and Khang (2023), who reported that in classrooms with high Pupil-Teacher Ratios (PTRs), teachers experience significant time constraints related to instructional activities, including preparing and administering weekly tests. As class sizes increase, teachers must

devote more time to classroom management, addressing the diverse needs of students, and covering the curriculum, all of which reduce the time available for assessments. This aligns with a survey by the Kenyan government (2020), which highlighted that variations in PTR across Nairobi negatively affected student performance in national exams, particularly in individual subjects (EduKyu, 2023). Similarly, Hazel and Eric (2021) conducted a study in Rwanda, which found that high PTRs under a competency-based curriculum hindered teachers' ability to conduct regular assessments effectively, further supporting this conclusion.

Descriptive Analysis

The study also included a descriptive analysis of the feedback gathered from respondents. This analysis helps to summarize the data more effectively, offering clearer insights into the patterns and trends identified in the responses. The results of this analysis, presented in Table 4.7, provide a detailed summary of key findings and offer a comprehensive overview of respondents' perspectives on the topic.

Table 4.8: The effects of PTR on Evaluation Method Effectiveness

The effects of PTR Evaluation method effectiveness	Mean	Rank
PTR affects school formative evaluation policy	4.81	1
PTR affects regular assessment of pupils through CAT's	4.70	2
PTR affects the decision to conduct weekly test	4.69	3
PTR affects supervised classroom assessment	4.66	4
PTR affects Homework	3.20	5
PTR affects the setting of internal test	4.08	6
PTR affects buying material from vendors to evaluate pupils' performance	3.00	7
PTR affects participation in interschool formative evaluation contests	3.42	8
PTR affects performance in mock examination performance	3.65	9
Total mean	**4.02**	**High**

Source: Field data, 2024

Key:

Rating scale

Mean Range	Response made	Interpretation
1. 1.0-1.8	Strongly Disagree	Very Low
2. 1.9-2.5	Disagree	Low
3. 2.6-3.3	Neutral	Moderate
4. 3.4-4.1	Agree	High
5. 4.2-5.0	Strongly Agree	Very high

Table 4.7 displays the mean scores regarding the impact of the Pupil-Teacher Ratio (PTR) on the effectiveness of evaluation methods in public primary schools. The overall mean score was 4.02, which falls within the "agree" range on the Likert scale, indicating substantial agreement with the statement. This suggests that respondents view PTR as having a significant effect on evaluation methods, particularly in TunduruDithestrict, where the study was conducted. The high mean score implies that larger class sizes (high PTR) are perceived to notably influence both the quality and frequency of evaluations, potentially affecting the overall effectiveness of teaching and assessment in these schools. These findings align with research from

various countries, underscoring the challenges that high PTRs present to educational practices, especially in assessment.

In South Sudan, Aluel et al. (2021) found that high PTRs increased teacher workload, limiting their ability to implement effective assessment methods. Teachers reported spending more time on classroom management and less on preparing and administering evaluations, leading to less frequent and lower-quality assessments. This aligns with the current study's findings, where respondents indicated that PTR influences the quality and frequency of evaluations in primary schools. Similarly, in the Democratic Republic of Congo (DRC), Tshipama and Kalonji (2022) found that large class sizes hampered teachers' ability to provide individual feedback and implement formative assessments. Teachers in DRC struggled with high PTRs, making it difficult to organize regular assessments or tailor them to students' diverse needs, ultimately affecting student performance. These findings are consistent with the current study, where respondents noted that high PTRs hindered the effectiveness of evaluation methods.

In Ethiopia, Bekele and Fekadu (2023) examined the link between PTR and assessment practices in public primary schools. Their study found that schools with high PTRs were more likely to rely on summative assessments, such as final exams, than formative assessments like quizzes or classroom evaluations. This shift in focus limited teachers' ability to monitor student progress continuously. The current study's results reflect this trend, with respondents indicating that PTR affects the frequency and effectiveness of various evaluation methods. In Eritrea, Habte and Tesfaye (2022) explored how PTR influences assessment practices, finding that teachers in

high PTR schools struggled to conduct regular assessments due to time constraints and large class sizes. Their study concluded that these challenges were worsened by limited resources, making it difficult for teachers to implement diverse evaluation techniques. Similar to the findings in Tunduru District, their research concluded that high PTRs significantly affect the quality of assessments.

Overall, the findings of this study highlight the significant impact of PTR on the effectiveness of evaluation methods and align with research from countries such as South Sudan, DRC, Ethiopia, and Eritrea. In all these countries, high PTRs have been shown to negatively impact teachers' ability to conduct regular and effective assessments, affecting the quality of education. The results of this study emphasize the importance of addressing PTR as a key factor in improving assessment practices and student learning outcomes. However, as the literature suggests, addressing PTR alone may not be sufficient. Investing in teacher training, resource allocation, and innovative assessment methods is essential to ensure that evaluation practices remain effective, even in high PTR environments.

4.3.3 Objective Three

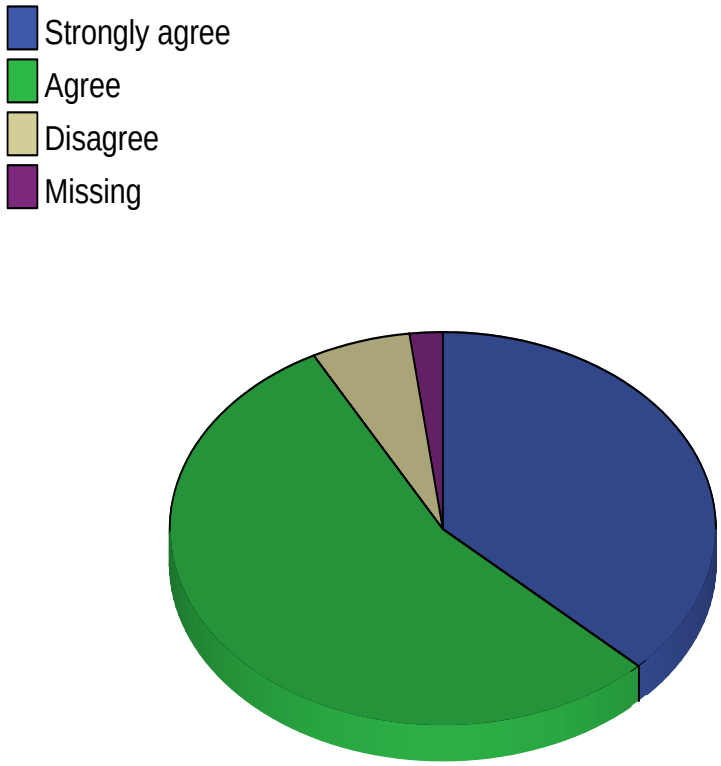
This objective explored the impact of the Pupil-Teacher Ratio (PTR) on subject performance in public primary schools. Based on the analysis of relevant variables, the findings addressed how PTR affects academic outcomes across different subjects.

4.3.3.1 PTR's Impact on the Teaching of Individual Subjects

The study found that various evaluation techniques are often required to assess student performance in different subjects. A high PTR encourages teachers to use

various appropriate methods to gauge students' understanding. However, respondents noted challenges such as unstable power supply and unreliable internet connections, which hinder the consistent use of certain evaluation techniques. A large proportion of respondents agreed with these challenges. A summary of these findings is presented in Figure 4.14 below.

Figure 4.12 Distribution of the Respondents on Teaching of Individual Subjects



Source: Summary of Collected Field Data (2024)

The data in Figure 4.14 shows that most respondents (37%) strongly agreed, and 55% agreed that the Pupil-Teacher Ratio (PTR) encourages teachers to use various assessment methods to evaluate students' understanding of different subjects. Only 8% disagreed with this statement. This indicates a widespread belief that high PTRs

motivate teachers to adopt diverse evaluation approaches, with larger class sizes prompting multiple assessment strategies. These findings align with research suggesting that high PTRs drive teachers to incorporate a broader range of assessment techniques for managing large classes and ensuring accurate evaluations across various subjects. For instance, Khamis (2023) found that teachers in countries with high PTRs were often compelled to use diverse assessment methods to meet curriculum requirements and address students' varied learning needs in large classrooms.

However, some studies challenge the direct link between PTR and the effectiveness of assessment methods. In Tanzania, for example, Moyo and Nyamwange (2021) found that despite high PTRs, many teachers still relied primarily on traditional assessment methods, such as written exams, rather than adopting various techniques. They suggested that while high PTRs increased teachers' workloads, many lacked the necessary training and resources to diversify their assessment strategies effectively. This implies that while high PTRs may encourage different methods, successful implementation depends on other factors, such as adequate teacher training and resource availability.

Similarly, a study by Namagembe et al. (2020) in Uganda found that although teachers in schools with high PTRs recognized the need for diverse evaluation methods, practical barriers such as time constraints, insufficient training, and limited resources often prevented them from effectively implementing these methods. The study concluded that while PTR creates a demand for varied assessments, logistical challenges and systemic issues hinder their proper application.

In Kenya, research by Mwangi and Ochieng (2022) also found that while teachers acknowledged the need for diverse assessment techniques in high PTR settings, time limitations and a focus on summative assessments often led them to rely on traditional methods like end-of-term exams. These teachers faced challenges in incorporating ongoing formative assessments to provide more accurate insights into student learning in large classrooms.

The results of this study suggest that PTR encourages the use of various assessment methods that align with global research, such as Khamis' (2023) study, which highlights how PTR often forces teachers to diversify their assessment approaches. However, studies from Tanzania, Uganda, and Kenya show that while teachers may see the need for varied assessments, their ability to implement them effectively is frequently constrained by issues like insufficient training, lack of resources, and systemic obstacles. These findings emphasize that while PTR can influence assessment practices, it is not the sole factor determining their success. The effective use of diverse assessment methods requires comprehensive teacher training, resource allocation, and institutional support.

In interviews, the head teacher of a school with high PTR explained the challenges of ensuring that each subject receives the necessary depth of instruction. They noted that with the high pupil-teacher ratio in our school, it becomes increasingly challenging to ensure that each subject is taught to the depth required. *Teachers are stretched thin; sometimes, we must prioritize covering content over providing individualized support for each student. As a result, some subjects may not receive the attention they deserve.*

Similarly, a teacher in the same school shared a similar perspective, stating,

In large classes, I find it challenging to give each student the attention they need, especially in subjects that require hands-on activities or individual problem-solving. It is difficult to assess their understanding correctly, and as a result, some students may not fully grasp the concepts, even though I try to cover the syllabus.

These responses underscore the managerial challenges that arise in schools with high PTRs. The head teacher's comments highlight how large class sizes force teachers to prioritize content delivery, often sacrificing personalized student support. The teacher's experience reveals how high PTRs complicate individualized attention, particularly in subjects requiring active participation or problem-solving. This suggests that high PTRs can significantly affect teaching quality, particularly in subjects that demand one-on-one interaction for effective learning.

The study from Rwanda further supports these findings. Hassan and Mukashema (2022) found that high PTRs led to generalized teaching methods, especially in rural areas where teachers struggled to provide individualized attention, particularly in subjects like mathematics and science that require more focused support. El Hariri and Oussama (2023) observed similar challenges in Morocco, noting that teachers in large classes often resorted to rote learning, which hindered active student engagement and deeper understanding, especially in languages and social studies.

However, not all studies confirm this view. In Rwanda, Ndayizeye and Twagirayezu (2021) suggested that high PTRs do not necessarily prevent effective teaching. They argued that effective teaching could still be achieved with the right strategies, teacher training, and sufficient resources. Teachers in large classrooms could effectively teach subjects like English and science by using methods such as group work, peer

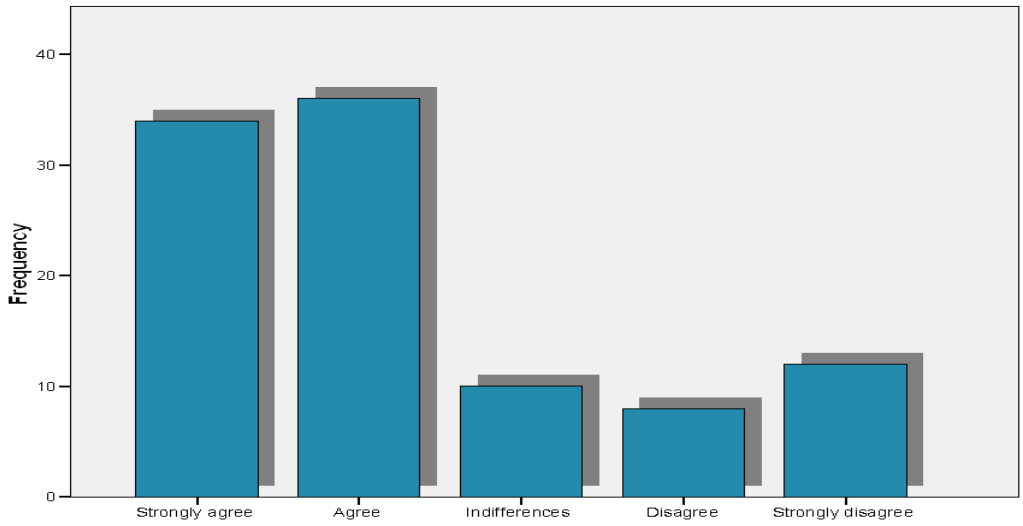
assessments, and digital tools. This suggests that while high PTRs present challenges, these can be mitigated with proper professional development and the integration of innovative instructional strategies.

The findings of this study align with the broader literature on the challenges of teaching individual subjects in high PTR environments. While the experiences of the head teacher and teacher emphasize the negative impact of large class sizes on teaching quality, studies from Rwanda and Morocco show how high PTRs often lead to more generalized teaching. However, research by Ndayizeye and Twagirayezu suggests that these challenges can be overcome through teacher training, resource allocation, and innovative teaching methods, highlighting that PTR alone is not the sole determinant of teaching effectiveness.

4.3.3.2 PTR and Teacher Allocation to Subjects

Respondents highlighted that PTR is critical in determining how schools assign teachers to different subjects. The study found that schools typically consider class size, available resources, subject load, equity, and teacher workload when allocating teaching staff. Most respondents agreed with this, as shown in the analysis results in Figure 4.16 below.

Figure 4.13: Distributions of Respondents on PTR and Number of Subjects Taught



Source: Summary of Collected Field Data (2020)

The data analysis in Figure 4.16 shows that most respondents (34%) strongly agreed, and 36% agreed that PTR affects how schools allocate teaching staff across subjects, with only a small percentage either disagreeing or remaining neutral. This suggests a strong consensus that PTR influences teacher distribution, prompting schools to adjust staffing based on class size, available resources, and teacher workload. These findings are consistent with studies from Madagascar and Comoros, where high PTRs were shown to affect how teachers are allocated to different subjects. For example, Rakotomanana (2021) found that schools in Madagascar, due to high PTRs, often prioritized staffing according to class size and teacher availability, sometimes leading to imbalances in teaching quality across subjects. Similarly, in Comoros, Said (2022) reported that high PTRs and limited resources caused schools to allocate teachers based on subject demand, affecting teaching quality in specialized areas.

However, these findings differ from studies in Algeria and Mali, where high PTRs did not always result in rigid teacher allocation. In Algeria, Benali (2023) found that despite high PTRs, schools could allocate teachers more effectively through better resource management and the use of technology. Similarly, Diakite and Traore (2022) in Mali reported that, although high PTRs posed challenges, schools had developed strategies to balance teacher distribution across subjects with the help of continuous professional development and institutional support. These contrasting results suggest that while PTR influences teacher allocation, local factors such as resource availability, policy frameworks, and teacher support systems can mitigate or amplify its impact.

The researcher interviewed the head teacher and a teacher to investigate these findings further. The headteacher explained:

> *Our school allocates teachers to subjects based on class sizes, available resources, and teacher workload. When the Pupil-Teacher Ratio (PTR) increases, we face difficult decisions on where to assign teachers, often prioritizing subjects with larger classes or those requiring specialized skills, even if it means spreading resources thinly across other areas.*

A teacher also shared their perspective:

> *With a high PTR, giving each student the attention they need becomes challenging, especially in subjects that require more hands-on methods. Sometimes, I am assigned to teach subjects outside my specialization to balance the workload. This affects my ability to deliver quality lessons in those subjects.*

The head teacher's comments highlight the administrative challenges in high PTR environments. They point out that schools are often forced to prioritize staffing for subjects with larger classes or higher demands, which can lead to an uneven

allocation of resources and teaching quality. Teachers may be assigned to subjects they are less prepared for, compromising the quality of instruction in those areas. On the other hand, the teacher's response emphasizes the personal difficulties experienced in large classrooms. Being assigned to teach subjects outside their expertise due to high PTRs often results in diminished instructional quality. The teacher finds it hard to focus on delivering effective lessons, particularly in subjects requiring more individualized support, as they are stretched thin by the demands of large classes.

These responses align with the broader literature on the impact of high PTRs on teacher allocation and teaching effectiveness. High PTRs often lead to a more generalized approach to teaching, with fewer resources and less individualized attention for students. This can compromise the quality of education, particularly in subjects that demand more specialized or hands-on instruction. Supporting studies further reinforce these challenges. Johansson et al. (2021) found that in Sweden, high PTRs led schools to reallocate teaching staff toward core subjects like mathematics and Swedish, which had larger class sizes, leaving subjects like science or arts with less attention. Teachers were often assigned to teach outside their area of specialization, which affected teaching quality. Similarly, Karpov and Petrov (2022) in Russia reported that high PTRs forced teachers to take on multiple subjects, further strengthening their capacity to provide quality instruction, especially in subjects requiring interactive or hands-on approaches.

However, some studies offer a more optimistic perspective. For instance, Semenova and Lebedev (2020) in Russia suggested that the negative effects of high PTRs on

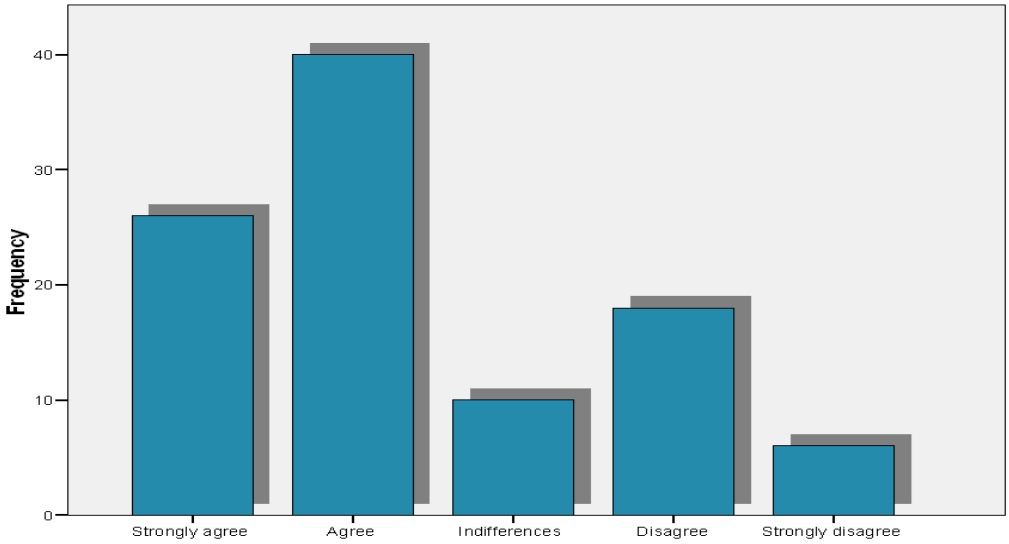
teacher allocation could be mitigated through careful planning, resource management, and support systems. They found that schools could overcome PTR-related challenges by using collaborative teaching methods and teaching assistants, allowing teachers to focus on their specialized subjects while maintaining student engagement. This approach showed that the challenges posed by high PTRs could be managed with adequate planning and support, ensuring that teacher allocation and teaching quality did not suffer.

These findings reflect the complexity of managing teacher allocation in high PTR environments. The head teacher and teacher's perspectives align with the broader literature, highlighting the strain high PTRs place on teacher resources and specialization. Studies from Sweden, Russia, and other countries emphasize that while high PTRs often lead to a generalized teaching approach, strategic planning, support systems, and teacher collaboration can help mitigate the negative impact on teacher allocation and teaching quality.

4.3.3.3 PTR and Teaching Methods for Individual Subjects

The analysis also suggests that PTR is just one of several factors influencing teaching methods. It plays a significant role in shaping the classroom environment, determining resource availability, and affecting teacher workload, all of which influence the diversity and effectiveness of teaching strategies used for different subjects. The findings indicate that most respondents agree that PTR impacts teaching methods, as illustrated in Figure 4.17 below.

Figure 4.14: Distribution of Respondents on PTR and Methods of Teaching



Source: Summary of Collected Field Data (2024)

The data presented in Figure 4.17 indicates that a significant portion of respondents (66%) agreed that the Pupil-Teacher Ratio (PTR) directly impacts teaching methods. Of these, 26% strongly agreed, and 40% agreed to some extent, while 10% were neutral. Only 24% disagreed with the statement, reflecting a relatively lower level of disagreement. This strong consensus underscores the belief that PTR shapes teaching strategies. High PTRs are often linked to overcrowded classrooms, limiting teachers' ability to use diverse, student-centered approaches. On the other hand, lower PTRs provide teachers with more opportunities to engage with students individually, tailor their teaching methods, and offer focused attention to students' specific needs. These findings align with a broader body of research suggesting that a favourable PTR contributes to more effective and varied teaching strategies in the classroom.

For example, in Spain, research has shown that a lower PTR improves teaching effectiveness by enabling more student-centred methods. González et al. (2018)

found that reduced PTRs are associated with better student engagement and more interactive teaching, as teachers can devote more time to individual students. A study of secondary schools in Spain (Martínez, 2019) also revealed that teachers with smaller classes could implement more diverse teaching techniques, such as project-based learning and group work, which are often challenging to manage in larger classes. These findings align with the results of this study, where most respondents acknowledged PTR's influence on teaching methods.

In Mozambique, however, the relationship between PTR and teaching methods is more nuanced. Ferreira (2020) noted that although smaller PTRs were expected to improve teaching quality, teachers in rural areas often faced significant challenges, such as a lack of resources and inadequate training, which limited the effectiveness of teaching strategies. Teachers tended to rely on traditional lecture-based methods in such settings, as there was little opportunity to adopt more interactive, student-centred approaches. This suggests that while PTR can impact teaching methods, other factors like teacher training and resource availability are also crucial.

Similarly, in South Africa, a study by Mbekwa and Ngcobo (2020) highlighted that large PTRs lead to more teacher-centred, transmissive teaching methods as teachers struggle to manage overcrowded classrooms and provide individualized attention. In contrast, when PTRs are lower, teachers can explore a broader range of teaching strategies, such as cooperative learning and differentiated instruction, which cater to diverse learning styles and abilities. This is consistent with the findings of this study, where most respondents acknowledged the impact of PTR on teaching methods.

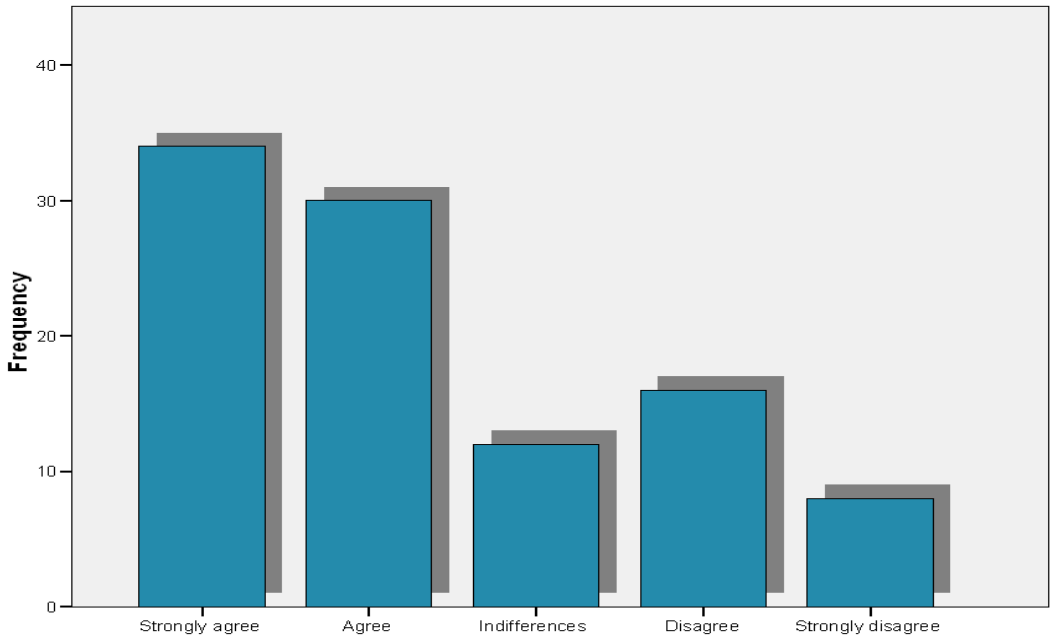
In Malawi, the effects of PTR on teaching methods also vary depending on resources and location. Chirwa (2021) found that high PTRs in Malawian schools often lead to whole-class instruction, with limited opportunities for more interactive or student-centred methods. Teachers rely on rote learning and lecture-based approaches in rural areas, where PTR is typically higher. However, in urban areas with lower PTRs, teachers can use more varied teaching strategies, including group discussions and inquiry-based learning, as noted in the study.

Overall, the findings of this study are consistent with research from Spain, Mozambique, South Africa, and Malawi, where lower PTRs are generally associated with more diverse and effective teaching methods. In comparison, higher PTRs tend to restrict teachers to more traditional, teacher-centered approaches. However, it is clear that other factors, such as teacher training, resource availability, and contextual differences, also play a significant role in shaping teaching practices. Therefore, while PTR is essential, it should be considered alongside these other variables to understand its full impact on teaching.

4.3.3.4 PTR and Monitoring Teaching

The study also found that in classrooms with lower PTRs, it is easier for administrators and supervisors to monitor teaching effectiveness, as teachers have fewer students to manage. When respondents were asked about this, a significant proportion agreed with the statement. The data on this topic is presented in Figure 4.10 below.

Figure 4.15: Distribution of Respondents on PTR Affects Monitoring Teaching



Source: Summary of Collected Field Data (2024)

The analysis indicates that most respondents (68%) agreed that classrooms with lower Pupil-Teacher Ratios (PTRs) make it easier for administrators and supervisors to monitor teaching effectiveness. Specifically, 34% strongly agreed, while another 34% agreed, 14% were neutral, and 24% disagreed. This suggests a general consensus that lower PTRs allow school leaders to focus more closely on individual teacher performance and more thoroughly assess teaching quality. With fewer students to manage, teachers can engage with students more effectively, making it easier for administrators to observe teaching practices and provide focused support. Therefore, reducing PTRs improves teaching effectiveness by allowing for more personalized attention and enhances administrators' ability to supervise and assess teaching quality. In smaller classes, teachers have more time to refine their methods,

while administrators are better positioned to evaluate performance and offer constructive feedback.

Studies from various East African countries further support these findings. Mugisha (2019) found that lower PTRs made it easier for school administrators to monitor teaching effectiveness in Tanzania. In schools with smaller class sizes, administrators reported being able to observe teacher performance more closely, track teacher-student interactions, and offer targeted feedback and professional development. This aligns with the current study, where most respondents agreed that smaller class sizes facilitate more effective monitoring of teaching.

Similarly, Juma and Mugo (2020) emphasized that classrooms with lower PTRs enable better supervision and assessment of teaching. In regions with lower PTRs, teachers could focus more on individual students, which improved classroom management and allowed for more personalized instructional approaches. In contrast, in schools with high PTRs, administrators struggled to assess teaching quality due to overcrowding, which hindered meaningful teacher-student interactions. This reinforces the view that lower PTRs enhance the monitoring of teaching effectiveness.

In Ethiopia, Tsegaye (2020) examined the link between PTR and teaching quality and found that lower PTRs led to improved teacher performance and more effective supervision by school leaders. Teachers with fewer students reported lower workloads and the ability to adopt more interactive teaching strategies. Furthermore,

administrators in these schools conducted more frequent classroom observations, leading to a more comprehensive evaluation of teaching practices and better professional development opportunities for teachers. These findings support the results of this study, where respondents indicated that lower PTRs improve administrators' ability to monitor and support teaching.

In Uganda, Lule and Kato (2021) found that smaller PTRs resulted in better supervision and improved teaching outcomes. Teachers in these classrooms reported less stress and more time to focus on individual student needs, which enabled administrators to observe and assess teaching more closely. The study also found that school leaders were better able to identify teaching challenges and provide personalized professional development in schools with lower PTRs. These results align with the current study's findings, where most respondents agreed that lower PTRs enhance the monitoring of teaching effectiveness.

The findings of this study, where most respondents agreed that lower PTRs facilitate better monitoring of teaching, are consistent with research conducted in Tanzania, Ethiopia, Uganda, and other East African countries. Studies by Mugisha (2019) in Tanzania, Juma and Mugo (2020) across East Africa, Tsegaye (2020) in Ethiopia, and Lule and Kato (2021) in Uganda all confirm that smaller PTRs enable more effective supervision and lead to improved teaching outcomes. With fewer students, teachers can engage more deeply with their students, making it easier for administrators to assess teaching quality and provide constructive feedback. In contrast, high PTRs, often associated with overcrowded classrooms, make it more

challenging to monitor teaching effectiveness and deliver personalized feedback. Thus, reducing PTRs is critical in enhancing educational quality and teaching performance across East Africa.

Relationship Between PTR and Subject Performance

The following section of the questionnaire sought to explore respondents' views on the relationship between PTR and subject performance in public primary schools.

Table 4.9 Relationship Between PTR and Subject Performance

Statement	Mean	Std. Deviation
PTR affects the teaching of individual subject	4.28	0.643
PTR affects the allocation of teachers to teach subjects	4.23	0.641
PTR affects methods of teaching individual subjects	4.21	0.619
PTR affects monitoring the teaching of individual subjects	4.19	0.607
PTR affects pupils' performance in the individual subjects	4.17	0.605

The findings from Table 4.8.1 highlight that most respondents strongly agree with the significant influence of the Pupil-Teacher Ratio (PTR) on various aspects of teaching and learning. The high mean scores across several factors indicate that lower PTRs are widely seen as beneficial for improving subject performance, teacher allocation, teaching methods, and monitoring teaching practices. Specifically, the mean score for the effect of PTR on subject performance is 4.28, indicating a solid

consensus that PTR plays a key role in shaping student outcomes. This is further supported by high mean scores for the impact of PTR on teacher allocation (4.23), teaching methods (4.21), teaching monitoring (4.19), and pupil performance in individual subjects (4.17).

The high mean score for subject performance (4.28) suggests that respondents perceive smaller class sizes as conducive to better student outcomes. With fewer students, teachers can better provide personalized instruction, engage more effectively with students, and monitor progress closely. This supports the idea that lower PTRs allow for a more individualized teaching approach, likely leading to improved academic performance. Similarly, the allocation of teachers to subjects (mean of 4.23) appears to benefit from lower PTRs. Smaller classes allow administrators to assign teachers based on expertise, ensuring higher-quality teaching. This is particularly important for ensuring that each subject is taught by a qualified teacher, which can be more challenging in larger classes, where teachers are often stretched thin across multiple subjects.

The impact of PTR on teaching methods (mean of 4.21) is another key finding. Smaller class sizes allow teachers to use a broader range of teaching strategies, such as differentiated instruction, group work, and individualized support, which are especially important in subjects requiring active student participation. In contrast, larger classes often require more traditional, teacher-centred methods, which may not address the diverse needs of students as effectively. Similarly, the monitoring of teaching (mean of 4.19) benefits from lower PTRs, as smaller classrooms make it easier for administrators to observe teaching practices, offer targeted feedback, and

identify areas for professional development. This close monitoring is crucial for improving overall educational quality and supporting teachers' growth.

Finally, the impact of PTR on pupil performance (mean of 4.17) reinforces the importance of class size in student achievement. Smaller class sizes allow teachers to give more individual attention, helping students understand the material better, ask questions, and receive the necessary support to succeed academically. These findings align with existing research that suggests lower PTRs positively affect various aspects of teaching and learning. For example, Mugisha (2019) in Tanzania found that smaller PTRs were linked to improved teacher performance, more personalized teaching, and better student outcomes. Teachers in smaller classes reported being able to engage with students more effectively and provide more focused feedback, while administrators could monitor teaching quality more closely.

However, Anderson (2020) presented a contrasting view in a study in the United States, suggesting that reducing PTRs may not always result in better academic outcomes. Anderson's study found that smaller class sizes were beneficial in early education settings, their effect diminished at higher educational levels, particularly in less interactive or lecture-based subjects. In larger classrooms, effective teaching strategies can still be implemented using technology and group-based activities, especially if teacher-student interactions remain strong. This perspective challenges the current study's findings, especially in contexts where resource limitations hinder the implementation of effective teaching practices, even in smaller classes.

Overall, the findings from Table 4.8.1 support the belief that PTR significantly impacts multiple aspects of teaching and learning, including subject performance,

teacher allocation, teaching methods, monitoring, and pupil performance. While studies like Mugisha (2019) confirm these positive effects, research by Anderson (2020) suggests that the impact of PTR may vary depending on factors such as educational level and subject area. Nevertheless, the evidence strongly suggests that reducing PTR can enhance educational quality, support teaching effectiveness, and improve student achievement.

In contrast, interviews with the District Education Officer (DEO) revealed that a high PTR has negatively affected subject performance in many public schools within the district. The larger PTR has made it difficult for teachers to manage student discipline, hindering the teaching, learning, and monitoring processes. With overcrowded classrooms, teachers struggled to conduct regular assessments to evaluate student understanding, identify difficulties, and implement corrective measures.

This statement emphasizes the challenges posed by high PTRs, particularly in public schools where overcrowding undermines teaching effectiveness and student performance. The difficulty of managing student discipline is notable, as a high PTR often means that teachers are responsible for larger groups, making it harder to maintain order and address individual behavioural issues. When discipline is not effectively managed, the learning environment becomes disrupted, making it harder for students to focus and for teachers to deliver quality instruction. Additionally, the inability to conduct frequent assessments further complicates the situation, as teachers cannot adequately track student progress, identify learning gaps, or provide

the necessary feedback. This limits the teacher’s ability to offer timely interventions and support.

These findings underscore the importance of maintaining a manageable PTR to enable teachers to engage with students, assess their progress, and provide the support needed to improve subject performance. Lowering PTRs can help alleviate these challenges, allowing teachers to manage classroom discipline better, conduct regular assessments, and implement corrective actions to enhance learning outcomes. This is consistent with studies by Mwanza and Lungu (2022) in Zambia, who found that schools with high PTRs often perform poorly in core subjects like Mathematics and English. Their research highlighted that larger class sizes hindered teachers' ability to provide individualized instruction, monitor student progress, and offer necessary support. Similarly, Kariuki and Kibet (2021) in Kenya found that high PTRs were linked to poor academic outcomes, especially in subjects requiring frequent teacher feedback and interaction. Larger class sizes made it difficult for teachers to maintain discipline and engage students effectively, leading to lower performance. In contrast, smaller class sizes allowed for more individualized attention, improving learning outcomes.

However, Hanushek's (2020) and Miller and Hoffer's (2021) research suggests that reducing PTRs may not always lead to better academic outcomes. Hanushek's study argued that smaller class sizes benefit classroom management and teacher-student interactions. However, their impact on student achievement is less significant than factors like teaching quality, curriculum design, and school leadership. Similarly,

Miller and Hoffer (2021) found that while smaller classes benefitted Mathematics achievement, the effect was contingent on other factors such as the location of the school and available resources. Even smaller classes may struggle to achieve better outcomes in schools with limited resources due to insufficient qualified teachers or instructional materials.

While studies by Mwanza and Lungu (2022) and Kariuki and Kibet (2021) confirm the strong relationship between high PTR and poor subject performance, other studies, like those by Hanushek (2020) and Miller and Hoffer (2021), suggest that PTR is not the sole determinant of academic success. Teaching quality, resources, and contextual factors also play critical roles in shaping educational outcomes. Nonetheless, reducing PTR remains important in improving teaching effectiveness and student achievement in public primary schools.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study, its conclusions, recommendations, and suggestions for further research. The summary provides an overview of the study, while the conclusions, derived from the research findings and aligned with the study's objectives, focus on assessing the impact of the Pupil-Teacher Ratio (PTR) on the implementation of the Competence-Based Curriculum (CBC) in Tunduru District, Tanzania. The study specifically aimed to explore how PTR affects teachers' workload, the effectiveness of evaluation methods, and the relationship between PTR and subject performance in public primary schools.

5.2 Summary of the Results

This section summarizes the key findings of the study based on the data analysis from the previous chapter. The findings show that PTR significantly impacts the number of lessons taught by teachers. In schools with higher PTRs, limited resources such as teaching assistants, technological tools, and professional development opportunities hinder teachers' ability to manage large classrooms effectively. As a result, teachers in these schools can deliver fewer lessons. Additionally, the study revealed that targeted program loans provided by microfinance institutions to support women were a vital means of accessing financial assistance, with 65% of respondents agreeing with this observation.

The study also found that in classrooms with higher PTRs, teachers must often modify their teaching methods to accommodate more prominent and diverse student groups. This requires additional time and effort, further complicating teachers' ability to manage lessons and provide individualized support. Moreover, teachers' workloads were found to increase, limiting their involvement in extracurricular and administrative activities. The analysis showed that 59% and 66% of respondents agreed that increased PTRs restricted teachers' capacity to engage in additional tasks beyond teaching.

Another important finding was that PTR limits student admissions, affecting academic performance. The analysis revealed that 76% of respondents noted PTR's negative impact on student enrollment and teachers' workloads. Adding more students to large classes further exacerbates the burden on teachers, who must provide additional support and guidance to accommodate the growing class sizes.

PTR was also found to significantly affect the effectiveness of evaluation methods in public primary schools. High PTRs increase teachers' workloads, leaving less time for regular assessments. As a result, teachers struggle to track student progress, conduct formative assessments, and adjust their teaching. The study found that 65% of respondents agreed that high PTRs limited the time for such evaluations.

Furthermore, the study highlighted that PTR affects both regular pupil assessments and supervised classroom evaluations. The analysis revealed that 68% of respondents agreed that PTR influences the frequency and quality of regular assessments, while 56% felt that it impacts supervised assessments. Resource allocation within schools, including staffing and support for assessments, is often influenced by PTR, and in

schools with higher PTRs, there are fewer resources available for professional development and assessment materials, which can further diminish the quality of evaluations.

Regarding Continuous Assessment Tests (CATs), the study found that high PTRs limit teachers' ability to provide customized attention and timely feedback, impacting the quality of assessments. Teachers must consider the effects of PTR when planning and implementing evaluation processes to ensure fairness, accuracy, and reliability in assessments, regardless of class size.

The relationship between PTR and subject performance was also a focal point of the study. The findings indicate that PTR significantly impacts how subjects are taught. Teachers in schools with lower PTRs can provide more individualized instruction. Smaller class sizes enable teachers to adapt their lesson plans and teaching resources to meet student's diverse learning needs. The study found that 72% of respondents agreed that smaller classes allowed more tailored and effective teaching.

Additionally, PTR influences how teachers are allocated to specific subjects and the teaching methods they employ. In smaller classes, teachers have more opportunities to differentiate instruction based on each student's learning needs and abilities. This flexibility allows for more personalized feedback and support. The analysis showed that 66% of respondents agreed with this finding. In contrast, larger classes, often resulting from high PTRs, make it difficult for teachers to manage classrooms and meet the individual needs of students effectively.

The study also revealed that PTR affects the monitoring of subject-specific teaching. The analysis showed that 76% of respondents agreed that high PTRs hinder the oversight of subject instruction, influencing aspects such as teacher availability, feedback quality, consistency in tracking student progress, and resource allocation. In larger classes, teachers may struggle to provide consistent, individualized attention, ultimately affecting the quality of subject teaching.

5.3 Conclusions

Based on the findings, the following conclusions can be drawn:

The pupil-teacher ratio (PTR) significantly affects teachers' workload in public primary schools in Tunduru District since higher PTRs reduce teachers' ability to manage lessons effectively, provide individualized attention, admit new students, and deliver quality instruction. This negatively impacts teaching effectiveness and student outcomes, hindering the successful implementation of the Competence-Based Curriculum (CBC) and affecting teacher morale and student achievement.

PTR limits the ability of teachers to conduct regular and thorough assessments. With larger class sizes, teachers have less time to engage in formative assessments, which are crucial for tracking student progress. This makes it challenging to monitor and adjust teaching strategies effectively.

High PTRs overwhelm teachers, limiting their capacity to provide quality instruction, manage assessments, and offer individualized support. As a result, academic performance suffers, and the implementation of the Competence-Based Curriculum (CBC) is hindered. Lower PTRs, on the other hand, enable more personalized

teaching, enhancing teacher performance and improving student achievement, particularly in core subjects.

Generally, PTR plays a critical role in the effectiveness of the CBC. High PTRs overload teachers, restricting their ability to deliver quality instruction and individualized attention, which hampers the implementation of CBC and negatively affects student outcomes. Reducing PTR is, therefore, essential to improving the effectiveness of CBC and enhancing overall educational outcomes.

5.4 Recommendations for Immediate Action and Further Study

Based on the conclusions, the following recommendations are proposed:

Immediate Recommendations:

Teachers should adopt more efficient classroom management strategies to optimize time, even in larger classes. Approaches such as peer teaching, collaborative learning, and differentiated instruction can help meet the diverse needs of students.

Teachers should regularly assess student progress using formative assessments, even on a smaller scale. Using technology and simple assessment tools can help save time and improve tracking of student development.

Local communities should actively support schools by advocating for smaller class sizes, raising awareness about the challenges posed by high PTRs, and exploring ways to provide additional resources, such as volunteers or learning materials.

Students should take more responsibility for their learning by developing strong self-study habits, seeking peer help, and utilizing resources such as libraries and online

platforms. Active participation in class discussions and group activities can enhance individual and collective learning.

The District Executive Officer (DEO) should advocate for policies that reduce PTRs by hiring more teachers, constructing additional classrooms, or reallocating resources to ensure manageable class sizes.

Through the Ministry of Education and local governments, the government should increase the number of primary school teachers to address teacher shortages and support the successful implementation of the CBC. This could include offering competitive salaries, providing professional development opportunities, and creating supportive working environments.

Government authorities should collaborate with local communities to build more classrooms and reduce overcrowding. This will alleviate teachers' workloads and improve teaching effectiveness.

Recommendations for Further Study

A comparative study could explore the impact of PTR on teaching effectiveness, student outcomes, and CBC implementation in both public and private primary schools in Tunduru District.

Further research should explore how stakeholders perceive the impact of PTR on implementing CBC in special needs education in public primary schools.

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APPENDICES

Appendix I: Questionnaire for Teachers & Heads of Schools

Dear Respondent,

My Name is **CLARA JOHN**, and I am a student at the Open University of Tanzania pursuing a Master of Curriculum Design and Development. I am studying "*Assessment of Pupil Teacher Ratio on Effectiveness of Competence Based Curriculum for Public Primary Schools: A Case of Tunduru District Council,* A Case of Tunduru District Council. You are kindly requested to answer the questions below by giving relevant details. This questionnaire is purely meant for academic purposes. Your contribution toward the smooth realisation of the intended purpose is highly appreciated, and inconveniences that may arise are highly regretted, too. Your identity as a respondent will remain anonymous, and you are highly appreciated in advance for any information you provide. I also abide by the confidentiality and accuracy of information before and after it is in my hands.

PART A: RESPONDENT BIODATA

1. Sex of the respondents: 1= Male ( ) 2= Female ( )

2. What is your age?

1= 18-22 ( ) 2= 23-27 ( ) 3= 28 and above ( )

3. Level of education:

1= Primary Education ( ) 2= Secondary Education ( ) 3= Ordinary Diploma ( ) 4= Bachelor Degree ( ) 5 = Postgraduate Degree ( ) 6= Master's Degree ( )

4. Marital Status 1= Single 2= Married 3= Divorced

5. Teaching experience

a) Below 5 years b) 5-9 years c) 10-14 years d) 15-19 years d) Above 20 years

PART B: QUESTIONS AS PER RESEARCH OBJECTIVES

INSTRUCTION: You are required to tick (√) **S**trongly **A**gree (SA) **A**gree(A) Neutral (N)**D**isagree (D) and **S**trongly **D**isagree (SD) with the statement provided below:

Item No.	Item Description	SA	A	N	D	SD
	OBJECTIVE 1:PUPIL TEACHER RATIO EFFECT ON TEACHER'S WORKLOADS IN PUBLIC PRIMARY SCHOOLS					
1	How far Do you agree that PTR affects the number of lessons taught per teacher?					
2	How far do you agree that PTR affects the number of subjects taught per teacher?					
3	To what extent do you agree with the view that PTR affects teacher participation in extracurricular activities					
4	How far do you agree with the statement that PTR affects teacher involvement in administrative duty?				**?**	
5	To what extent do you agree with the view that PTR affects the admission of new pupils					
6	I handle many other administrative duties besides the maximum teaching load.					
7	There are so many students in my class that I cannot be able to offer individualised attention to each one of them					
8	The pupil-to-teacher ratio in my class is 40:1					
9	My involvement in extracurricular activities adds strain to my already heavy workload.					
	OBJECTIVE2: PUPIL-TEACHER RATIO EFFECT ON EVALUATION METHODS EFFECTIVENESS IN PUBLIC PRIMARY SCHOOLS					
10	How far do you agree with the statement that PTR affects evaluation methods?					
11	To what extent do you agree with the view that PTR affects Regular assessment of pupils through CATs					
12	To what extent do you agree with the view that PTR affects Decisions on the conduct of weekly tests					
13	To what extent do you agree with the view that					

	PTR affects supervised classroom assessment					
14	To what extent do you agree with the view that PTR affects					
15	How far do you agree with the statement that PTR affects the Setting of internal tests?					
16	How far do you agree with the statement that PTR affects buying test materials from vendors to evaluate our pupils?					
17	How far do you agree with the statement that affects participation in interschool formative evaluation contests?					
18	To what extent do you agree with the view that this affects performance in mock examinations performance					
	OBJECTIVE 3: THE RELATIONSHIP BETWEEN PUPIL-TEACHER RATIO AND SUBJECT PERFORMANCE IN PUBLIC PRIMARY SCHOOLS.					
19	To what extent do you agree with the view that affects the Teaching of individual subjects					
20	How Do you agree with the statement that PTR affects teachers' allocation to subjects?cts					
21	To what extent do you agree with the view that PTR affects teaching individual subjects					
22	To what extent do you agree that it affects monitoring individual subject teaching?					
23	To what extent do you agree that PTR affects Pupil performance in individual subjects?					

24. What do you recommend to be done to cope with challenges associated with PTR toward successfully implementing a competence-based curriculum at your school?

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THANKS FOR YOUR COOPERATION

Appendix II: Interview Guide for District Education Officers

This interview is intended to collect data on the impacts of PTR on competency-based curriculum implementation practices in the Tunduru district.

1. Does PTR affect the teachers' workload in public primary schools? If "Yes," briefly explain

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2. Do you think the teaching load by the teachers in your district is sustainable? If not, what corrective measures have the district initiated to control the anomaly?

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3. Do you think PTR affects the way learners are evaluated?

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4. How does the pupil-teacher ratio affect the evaluation of learners in the Tunduru district?

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5. Have you reported cases of teacher absenteeism due to too much workload? If "Yes," briefly explain

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6. How does the PTR affect class attendance by teachers?

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7. What do you suggest to be done to cope with challenges associated with PTR towards successful implementation of competence-based curriculum in your district?

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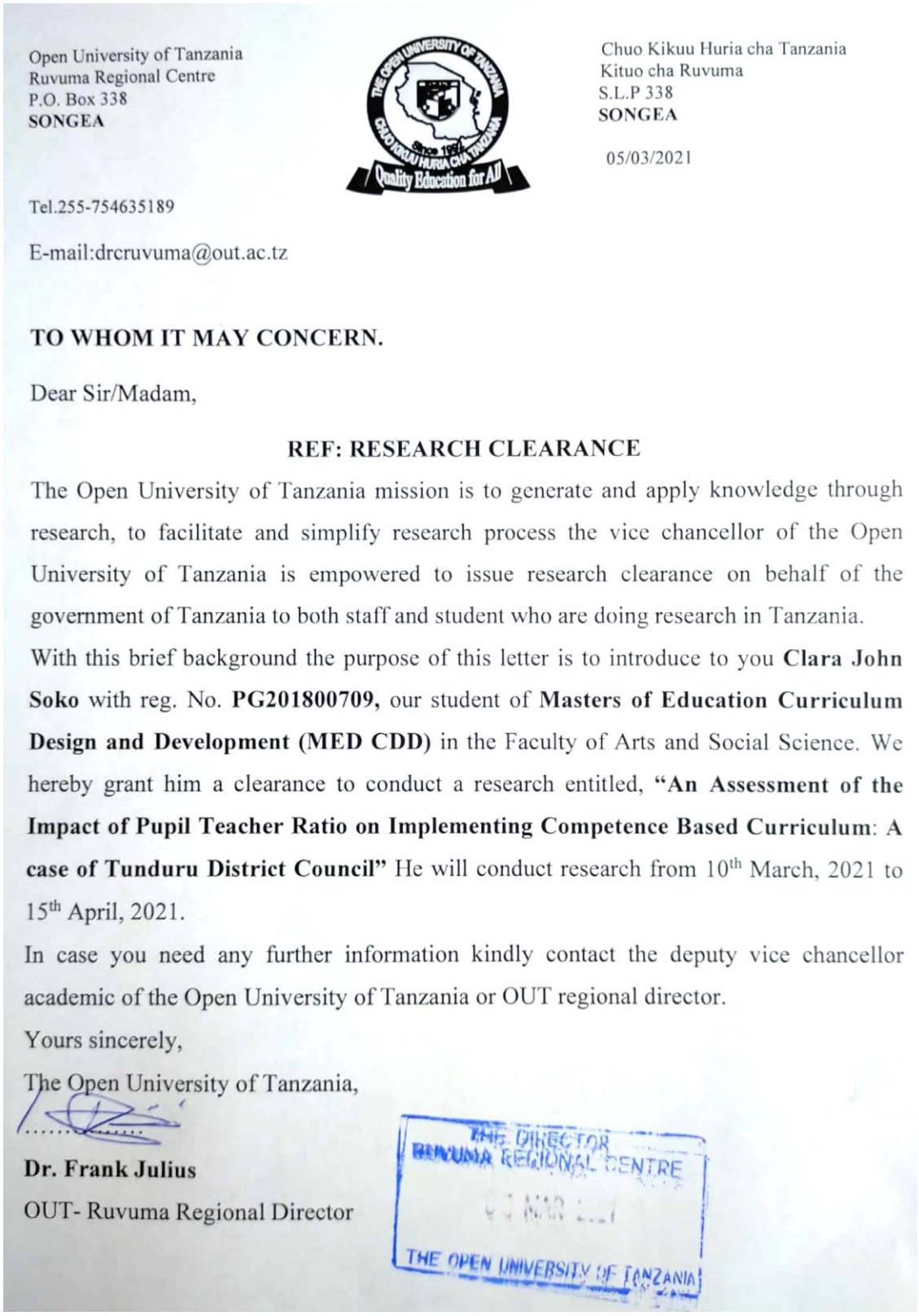
THANKS FOR YOUR COOPERATION

Appendix III: Research Clearance Letter



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TO WHOM IT MAY CONCERN.

Dear Sir/Madam,

REF: RESEARCH CLEARANCE

The Open University of Tanzania mission is to generate and apply knowledge through research, to facilitate and simplify research process the vice chancellor of the Open University of Tanzania is empowered to issue research clearance on behalf of the government of Tanzania to both staff and student who are doing research in Tanzania.

With this brief background the purpose of this letter is to introduce to you **Clara John Soko** with reg. No. **PG201800709,** our student of **Masters of Education Curriculum Design and Development (MED CDD)** in the Faculty of Arts and Social Science. We hereby grant him a clearance to conduct a research entitled, **"An Assessment of the Impact of Pupil Teacher Ratio on Implementing Competence Based Curriculum: A case of Tunduru District Council"** He will conduct research from 10th March, 2021 to 15th April, 2021.

In case you need any further information kindly contact the deputy vice chancellor academic of the Open University of Tanzania or OUT regional director.

Yours sincerely,

The Open University of Tanzania,

.....

Dr. Frank Julius

OUT- Ruvuma Regional Director

THE DIRECTOR
RUVUMA REGIONAL CENTRE
THE OPEN UNIVERSITY OF TANZANIA