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QUALITATIVE EXPLORATION OF APPLICATION OF INQUIRY-BASED PEDAGOGY FOR GEOGRAPHY TEACHING IN MOROGORO CLASSROOMS, TANZANIA

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Abstract

This qualitative study aimed to explore geography teachers' practical understanding and application of the inquiry-based approach in classroom teaching. Using a case study design, the research was conducted in Morogoro Municipality, Tanzania, and involved eleven (11) secondary school geography teachers. The findings revealed varied levels of understanding and implementation among the teachers. While some demonstrated seamless integration of inquiry-based methods into their teaching practices, others showed uncertainty and confusion regarding the instructional process. The study also highlighted that observation during teaching may influence teacher behaviour, potentially limiting the authentic demonstration of instructional skills. This suggests that the presence of observers can act as a barrier to the effective application of inquiry-based teaching methods. The study emphasizes the importance of continuous professional development for teachers, recommending targeted training and support to enhance their competence and confidence in applying inquiry-based approaches in geography education.

Keywords: *Inquiry tool, Geography teaching, Classroom environment, Observer, Secondary schools*

Introduction

In recent years, there has been a growing shift from traditional teacher-centered instruction to more learner-centered approaches that emphasize active participation, inquiry, and critical thinking (Mtitu, 2014; Baeten *et al*., 2016). This shift aligns with the principles of constructivist learning theory, which highlights the importance of learners actively constructing knowledge based on their prior experiences and engagement in meaningful classroom activities (Vygotsky, 1978).

Inquiry-based pedagogy (IBP) has increasingly gained attention in African educational discourse as a means to move away from rote memorization toward active, student-centered learning. Rooted in constructivist theory, IBP encourages learners to pose questions, investigate solutions, and build knowledge through exploration. In the African context, this approach aligns with the demand for 21st-century skills such as critical thinking and problem-solving. For instance, Adeyemi and Adu (2020) observed that in South African classrooms, when teachers

integrated inquiry-based strategies, students demonstrated greater engagement and understanding of geographical content. However, despite its promise, the implementation of IBP remains limited, often due to systemic challenges such as large class sizes, lack of teaching resources, and the persistence of teacher-centered practices.

In geography education, especially at the secondary level, diverse teaching methods are needed to help students understand complex spatial and environmental concepts. IBP, in particular, allows learners to connect new ideas with existing knowledge, thereby promoting deeper understanding (McElvain and Smith, 2016). Effective implementation of IBP also depends on how well teachers plan, select, and apply appropriate teaching strategies (Tunca, 2015; Fernandez and Rivas, 2018). However, research has shown that many teachers continue to rely heavily on traditional methods like lecturing and note copying, which limit student interaction and inquiry (Uwimana *et al.*, 2022).

In Tanzania, where large student populations and limited instructional resources are common in secondary schools, understanding how teachers select and apply various teaching methods is crucial for improving classroom practice.

Research Problem and Significance of the Study

Several studies in Tanzania have investigated the challenges in implementing the 2010 curriculum. For example, Mtitu (2014) studied the application of learner-centered approaches in science education and identified teachers' limited understanding of the nature of science and language barriers as key obstacles to fostering critical thinking. Similarly, Tambwe (2017) found that one of the primary challenges in implementing competency-based education and training in technical institutions was teachers' poor understanding of the key concepts. These studies consistently highlight insufficient instructional knowledge among teachers; however, they do not delve deeply into how specific pedagogical practices relate to teachers' perceived understanding of the approach.

This study seeks to fill that gap by focusing specifically on geography teachers and their practical understanding of inquiry-based pedagogy within classroom contexts. It emphasizes the need to examine how teachers interpret and apply inquiry methods and how their understanding influences classroom implementation. In doing so, the research aims to provide insights that are both contextually relevant and applicable to broader efforts in curriculum implementation and teacher development in Tanzania.

Study Objective

To explore ways in which geography teachers apply inquiry based pedagogy (IBP) in classroom

Research Questions

i. How geography teachers apply IBP in the classroom?
ii. To what extent does the class environment adhere with the IBP requirements?

Literature Review

Inquiry-based pedagogy (IBP) serves as an effective instructional model for geography classrooms, particularly when aiming to foster critical and creative thinking among students. Inquiry can be

classified based on the structure and autonomy given to students. MacKenzie (2016) categorizes these forms into four main types: confirmation, structured, guided, and open inquiry. These forms vary in complexity and student autonomy, from confirming known results to designing and implementing their own investigative processes. Confirmation inquiry involves students validating established findings using predefined questions and procedures (Pyle, 2008). Structured inquiry requires students to follow given methods to explore a question, while guided inquiry allows students to select the method, and open inquiry gives them full autonomy over questions, methods, and reporting (MacKenzie, 2016).

In the African context, empirical studies reveal both the opportunities and challenges of implementing IBP in geography classrooms. For instance, Otieno and Mugo (2021) found that inquiry-based strategies improved Kenyan students' ability to analyze and address real-world environmental challenges. Similarly, in Nigeria, Olatunde and Ibrahim (2022) reported that inquiry methods promoted spatial awareness and teamwork among secondary school students. However, both studies emphasized a recurring challenge teachers often lack the professional development necessary to effectively employ inquiry methods. Without adequate training, teachers struggle to shift from traditional didactic methods to facilitative roles that foster student-led investigation (Uwimana and Nyirahabimana, 2022).

Furthermore, national education policies greatly influence the implementation of IBP. Rwanda serves as a positive case, where curriculum reforms incorporating inquiry-based learning have led to improved student engagement and understanding (Uwimana and Nyirahabimana, 2022). Nevertheless, successful implementation requires systemic support, including infrastructure, teacher training, and assessment models aligned with inquiry goals (Kihwele and Mtitu, 2023). Within geography education, inquiry encourages learners to connect classroom content with real-world contexts, thereby fostering practical application of knowledge and critical reasoning (Mutisya and Makokha, 2021). As highlighted by Jo and Witham (2014), geography teachers need both pedagogical and content knowledge to facilitate effective inquiry. Hence, there is a call for continued research and practice-focused training to equip teachers with the competencies to sustain inquiry-based learning.

In Tanzania, the adoption of learner-centered pedagogies, including inquiry-based approaches, has been endorsed through the Education and Training Policy and the competency-based curriculum (URT, 2014). However, while policy documents emphasize participatory methods, the implementation on the ground remains limited due to systemic and institutional challenges. Studies by Kafyulilo and Ndibalema (2021) indicate that many Tanzanian teachers lack adequate training in designing and delivering inquiry-based lessons, especially in subjects like geography that demand practical engagement with real-world contexts.

Research by Mtitu (2019) reveals that although teachers acknowledge the value of inquiry-based learning, factors such as large class sizes, lack of instructional resources, and examination-oriented

teaching hinder the full realization of inquiry-based practices in Tanzanian classrooms. Additionally, in rural areas, the disparity in resource availability further widens the gap between policy and practice (Ngussa and Makewa, 2022).

Despite these constraints, there is growing recognition of the potential of IBP to enrich geography education in Tanzania. For instance, studies by Komba and Mwandanji (2022) show that when implemented, even in a limited form, inquiry-based approaches enhance student engagement, critical thinking, and problem-solving skills. Nonetheless, empirical research focusing specifically on geography teachers' use of inquiry pedagogy in Tanzanian secondary schools remains scarce.

Study Area

Morogoro Municipality is located in the Morogoro Region of Tanzania, positioned approximately 190 km west of Dar es Salaam, between latitudes 6°49′S and 7°00′S and longitudes 37°30′E and 37°50′E (United Republic of Tanzania [URT], 2020). The municipality covers an estimated area of 250 to 260 square kilometers and lies at an average elevation of about 500 meters above sea level, characterized by gently rolling plains and the foothills of the Uluguru Mountains, part of the Eastern Arc Mountains (Mwakalobo *et al*., 2016; URT, 2020).

The municipality serves as an economic hub in the region, supporting trade, education, and small-scale agriculture such as maize, vegetables, and fruit farming (Kangalawe and Liwenga, 2005; NBS, 2022). Rapid urbanization has brought pressures on land resources, altering traditional land cover patterns and creating challenges related to urban planning and infrastructure provision (Mwakalobo *et al*., 2016).

According to the 2022 Population and Housing Census, Morogoro Municipality had a population exceeding 300,000 people, reflecting steady growth linked to rural-urban migration and natural increase (NBS, 2023). The population is diverse and includes multiple ethnic groups with a predominant engagement in commerce, education, and agriculture-related livelihoods (Kangalawe and Liwenga, 2005).

Understanding the geographical and demographic context of Morogoro is vital for situating this study on inquiry-based pedagogy in geography classrooms, as local environmental features and urban-rural dynamics influence educational resource availability and pedagogical approaches. Figure 1 presents a scale map of Morogoro Municipality illustrating major urban centers, administrative Wards, key road networks, and surrounding land use patterns.

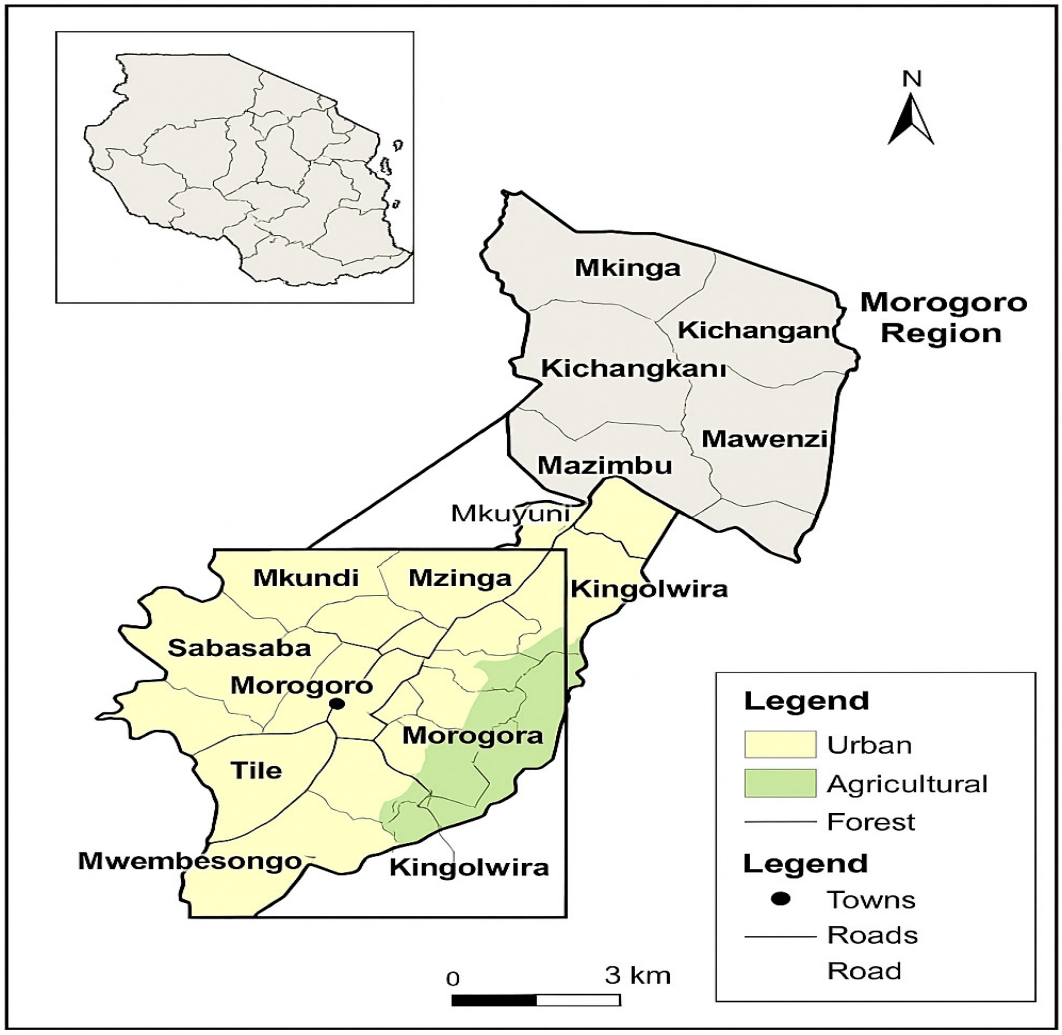

Fig. 1: Map of Morogoro Municipality showing Key Locations and Land Use Zones Map adapted from URT (2020) and NBS (2023)

Methodology

Study Design

The two research questions of this study determine the nature of this study design. The chosen design was case qualitative study design. This design was chosen by considering the data sources to answer those research questions. By definition, a case study design is an in-depth exploration of a single individual, several individuals separately or in a group, a program, events or activities (Creswell, 2014).

The case study design has been chosen because it suits with the nature of the study presented to be detailed and intensive (Cohen, 2011; Creswell, 2014). This is because to explore teachers' understanding and practices need relate the phenomena and the contextual environment (Baxter and Jack, 2008). In this study, the researcher wanted to explore the IBP with respect to teachers and secondary school conditions in Morogoro. Eleven teachers were purposefully selected to participate in the

study, agreed to participate by getting signed the consent form.

Data Collection Method

In qualitative research, observation is the collecting of information by seeing (direct) or engaging in informants' daily practices (indirect) (Creswell, 2014).This method can be structured or unstructured depending on the philosophical assumptions and the nature of the research questions. For example, in a constructivism paradigm it takes into account the significance of the research context, then the observation will be based on the researcher's direct observations in class by seeing, feeling and hearing (Merriam and Tisdell, 2016). In this study teachers were observed along with the semi-structured observation and field notes to collect information about teachers' inclusion of IBP inside the classrooms when they were teaching geography in different classes.

Data Collection Instrument

Semi structured observation checklist instrument was used to gather the open-ended and first-hand data by observing the ongoing activities in the study sites(Creswell, 2014). The qualitative method involved two forms of observation, i.e direct and indirect. In this study, the researcher used field notes to record the teaching events. The purpose of observation in a qualitative study is to capture the perspective of the individuals being observed (Wiesma and Jurs, 2005). It can facilitate the researcher through hearing, seeing or feeling exactly the way teachers practice teaching in the actual study setting (Cohen, 2011).It enables the gathering of rich and context-related data which could not be collected by interviews alone.

Classroom observation was used as a second main instrument for data collection in this study to assess the application of geography teacher on IBP. However, this instrument was specifically to rule out the practice of teachers in the classroom to find out as to what extent their teaching adheres with the elements of IBP (Table 1). Teachers' lesson plan assessment on the other hand was considered as a complement to classroom observation in order to assess how teachers plan their lesson before they even implement it in the classroom. Prior to the classroom observations process, the selected participants were informed through consent letter and later on requested to sign the consent form as a way of agreeing to take part in the process. Then each one was contacted by the researcher to schedule the appointment time for observation sessions. Each one was observed once for 40 minutes which is the normal duration of a single lesson.

The instrument was prepared holistically as Classroom Observation Protocol. The protocol comprises of three major parts.

i. Pre-observation data: To gather data about the school, informants, class/stream and the lesson period. Also, data to be taken from the participants' lesson plans such as topic/sub-topic, proposed lesson objectives, teaching methods and the proposed teaching and learning activities.
ii. On-set (During class) observation data: This comprised of semi-structured set of activities and behaviours to be observed in the class such as the way informants begin the lesson, activities involved and the nature of the activities, what

participants were doing, what students were doing, and the nature of interactions existing in the class, the general description of the classroom, and the nature of questions asked during the lesson (Table 1).

iii. Post-observation data: This part of the observation protocol provided the reflections of each aspect per each observed session, and it was supposed to be filled immediately after each observation session.

Table 1: Observational Checklist

Items	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P 11
1.Teacher introducing the lesson by connecting it to students' prior knowledge	√	√	√	√	√	√	√	√	√	X	√
2.Students contributing to the discussion	X	√	X	√	X	√	√	√	√	X	√
3.Grouping of students	X	X	√	√	X	X	√	√	√	√	√
4.Coopration in learning	X	√	√	√	X	√	√	√	√	√	√
5.Teacher asks Open –ended questions	√	√	√	√	X	√	√	√	√	X	√
6.Stuents answers questions or solve a problem using open –ended instructions	√	√	X	√	X	X	X	X	X	X	√
7.Students search as many data as possible to answer questions	√	√	√	√	X	X	√	√	√	√	√
8.Teacher seek students' understanding	X	√	√	√	√	√	√	√	√	X	√
9.Students use evidence to support claims	√	√	√	X	X	√	√	√	√	√	√
10.Students talk to one another	X	X	√	√	X	X	√	√	√	X	X
11.Teacher help students to reason through thinking	√	√	X	√	X	X	X	√	√	X	√

Data Analysis and Study Credibility

The analysis of classroom observational data, unlike the interview data, requires comparison of similar emerging issues applicable to each category of items under the semi-structured observation instrument. The analysis of observation data involved two major steps:

Step 1: Analysis of pre-observation data which mainly included the review of the teacher's lesson plans to derive the planned objectives, teaching and learning activities and teaching methods to be used later on in the actual teaching.

Step 2: Analysis of classroom observation data: In this step, all the ongoing activities of what happened in the classroom were reviewed including ways in which the teachers engage students in the class, the nature of interaction between teachers and students, the interest of students towards the lesson as well as the nature of the participation shown by students. The descriptions and examples of each item have been presented as field notes. The emerging themes from the descriptions (field notes) were then established to describe the extent to which

the study informants implement IBP during teaching.

Credibility is obtained by ensuring that the data analysis process was scrutinized in such a way that the point of saturation was attained where themes can no longer be developed from the collected data. The researcher did three things here:

i. Pattern matching: this is normally done during thematic analysis (Sinkovics, 2018). Two patterns are compared together, the first one is a theoretical pattern (proposition about what is expected in the data) and the second one is the observed pattern (consisting of data that are used to examine the theoretical/conceptual framework).

ii. Coding checks: in qualitative studies this refers to how a researcher defines the data being is analysed (Creswell, 2015). The codes allow the researcher to organize the data in a structured way to the extent that they can see the relationship between those codes. This takes the researcher into generating the themes. In order to ensure the credibility of themes developed, the researcher established an Inter-rater reliability (IRI) which checks for the thematic coding process.

Results and Discussion

The study found three key themes that explain the ways in which Geography teachers in Morogoro apply IBP in classes. Figure 2 present the study findings

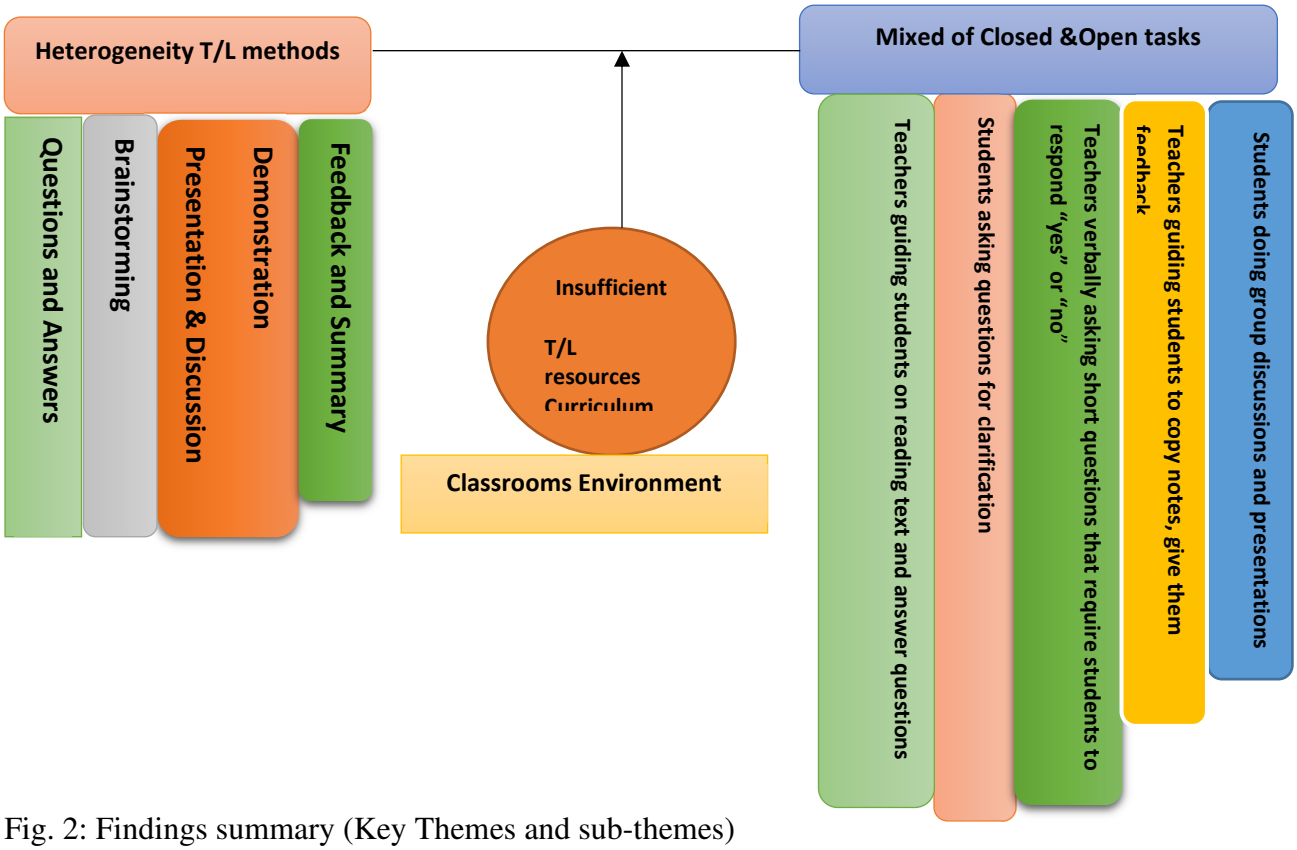

Fig. 2: Findings summary (Key Themes and sub-themes)

Theme1: Heterogeneity in Teaching and Learning Methods

An analysis of the informants' lesson plans and classroom observations revealed diverse approaches in the selection and application of teaching and learning (T/L) methods. This variation forms the foundation of the first emergent theme: *Heterogeneity in Teaching and Learning Methods*. The data reflect a range of instructional strategies used by teachers to achieve their lesson objectives, demonstrating differing levels of integration with inquiry-based pedagogy (IBP).

Informant 1 relied exclusively on the question-and-answer method to achieve her learning objectives. In contrast, Informants 2 and 4 combined question-and-answer with traditional lecturing. Informant 3 expanded his approach further, listing discussion and demonstration methods alongside questioning to support student understanding.

A slightly different approach was observed in Informant 5's lesson plan, where she used lecturing and demonstration but excluded discussion, setting her apart from Informant 3 despite similarities in the use of questioning and demonstration. Informants 6 and 8 adopted a triadic approach, incorporating questions and answers, lecturing, and demonstration as part of their instructional strategies.

Informant 7 proposed the use of questions and answers combined with student presentations, while Informant 9 added discussion to this mix. Informants 10 and 11 also utilized question-and-answer and discussion methods, but each added a distinct technique: brainstorming (Informant 10) and demonstration (Informant 11).

Interestingly, with the exception of Informants 5 and 11, most of the planned methods were implemented during classroom observations. A common feature among all observed teachers was the initiation of lessons by activating students' prior knowledge, though the strategies used to do so varied.

Teachers demonstrated a clear understanding of the importance of connecting new content with previously learned material, although their implementation techniques varied. Informant 1 began the lesson by writing review questions on the chalkboard, directly linked to the previous sub-topic (e.g., "What is ozone layer depletion?"). This approach provided a structured transition into the new content.

In contrast, Informants 2 and 8 used verbal prompts to guide students in recalling previous concepts. For example, Informant 2 asked, "What does it mean by migration?" while Informant 8 initiated with, "Who can remind us the meaning of weather?" These introductory questions set the stage for the new lesson topics on migration and the establishment of weather stations, respectively.

Informant 10 took a more teacher-centered approach by summarizing previous content herself, providing definitions and explanations without initial student input. On the other hand, Informants 7 and 9 employed a more open format by asking students to share anything they remembered from the previous lesson, without guiding questions, resulting in a less focused recall.

The various methods of lesson initiation observed align with McElvain

and Smith (2016), who emphasize the value of connecting new material to prior knowledge in order to foster meaningful learning. This approach helps teachers identify gaps in understanding and establish a foundation for new concepts. Similarly, Tunca (2015) and Fernandez and Rivas (2018) stress that activating prior learning supports cognitive engagement and helps students stay on track throughout the lesson.

Except for Informant 5 who relied heavily on lecturing and the chalk-and-talk method—most teachers blended traditional and active teaching strategies. Informants 3, 4, 6, 7, 8, 9, 10, and 11 all combined lecturing with questions, discussions, or student presentations. These mixed-method approaches contribute to active student participation and promote cooperative learning environments, as highlighted by Baeten *et al*. (2016) and Uwimana *et al*. (2022). However, the effectiveness of these strategies varied. Informants 1 and 2 conducted whole-class discussions, which, while promoting inclusivity, may limit the depth of individual student engagement due to class size and time constraints. This observation supports Mtitu (2014) argument for the use of learner-centered approaches that allow for small-group discussions and student-led presentations. These strategies better align with constructivist principles that emphasize active engagement and knowledge construction.

The ways in which teachers concluded their lessons further demonstrated their understanding and practical application of the methods outlined during planning. Five informants (1, 2, 7, 9, and 11) closed their lessons by summarizing the key ideas discussed, closely aligning their summaries with the guiding questions and learning tasks assigned earlier.

Alternatively, Informants 5, 9, and 10 chose to end their sessions by encouraging students to express any remaining doubts and revisit specific questions from the lesson, which were then briefly addressed by the teacher. Informants 2 and 8 provided additional clarification on student contributions that were directly related to the sub-topic of the day. These varied lesson closure strategies highlight the importance of timely feedback a core component of constructivist pedagogy. According to McElvain and Smith (2016), reflection and feedback in inquiry-based classrooms enable deeper student understanding and the emergence of new learning questions. Importantly, reflective practice is essential not only for students but also for teachers, as it enables them to assess the effectiveness of their methods in fostering active learning (Benade and Olusegun, 2015).

Theme 2: Mixture of Closed and Open Tasks

Analysis of the informants' lesson plans and classroom observations revealed varying degrees of teacher and student engagement in teaching and learning (T/L) activities. The patterns observed formed the basis for the second emergent theme: "A Mixture of Closed and Open Tasks." This theme reflects the extent to which inquiry-based pedagogical practices (IBP) were integrated into lesson planning and implementation, emphasizing the roles of both teachers and students.

Across the reviewed lesson plans, teaching activities primarily demonstrated teacher-directed methods. For instance, Informant 1 listed instructional actions such as guiding, explaining, asking

questions, and summarizing. Similarly, Informant 2 focused on questioning, clarifying concepts, and summarizing student responses. Informant 3 incorporated activities involving prompting students with questions, guiding reading, and supporting demonstrations, again indicating a teacher-centric approach.

Informants 4 and 5 also structured their lessons around teacher-driven actions, such as asking questions, leading discussions, and writing notes on the blackboard. However, their choice to focus on note-copying rather than encouraging students to construct their own notes suggested a more passive role for students -an approach that contradicts recommendations by Laxman (2013), who advocates for open-ended, student-led tasks that support exploration and independent knowledge construction.

Informants 6 and 7 also adopted traditional roles, including asking questions, guiding observation and discussion, and summarizing content. Informant 7 introduced group work, which hints at a shift toward collaborative, student-centered learning. Informants 8 to 11 presented similar strategies, combining teacher-led instruction with facilitation of student group activities and discussions. Notably, Informant 10 included an additional instructional element of clarifying misconceptions, an important strategy for fostering conceptual understanding. While most informants engaged in some form of inquiry-based practice, the dominant strategies were often structured and teacher-controlled. Exceptions, such as Informants 4 and 5, highlighted limitations in fostering learner autonomy.

The analysis also examined the proposed learning activities to assess student engagement. Informant 1's plan included responding to questions, presenting findings, and listening attentively activities indicative of moderate engagement. In contrast, Informant 2 focused solely on answering questions and note-taking, limiting opportunities for hands-on learning.

Informants 3 and 6 proposed similar tasks, such as reading, observing, and responding, but lacked emphasis on active demonstrations by students, thereby constraining deeper inquiry. Informants 4, 5, and 7 encouraged group discussions and class exercises but continued to rely heavily on note-copying, limiting the depth of exploration.

More interactive and open-ended learning was observed in the plans of Informants 8, 9, 10, and 11. These included reading texts, group discussions, presentations, and interpreting data or maps activities that align well with the inquiry-based learning model. For instance, Informant 10 encouraged students to brainstorm, measure distances on maps, present findings, and complete assigned exercises. Such activities align with Oppong-Nuako *et al*. (2015), who emphasize that guided and structured tasks can foster active student inquiry when they include elements of exploration and autonomy.

This theme also explored the nature and purpose of classroom questioning strategies. Inquiry-based teaching often involves open-ended questions that promote critical thinking and problem-solving (Applis, 2016; Oppong-Nuako *et al*., 2015). Observations revealed that some informants used both open and

closed question formats, shaping the cognitive demands placed on students.

For example, Informants 2 and 9 employed open-ended questions that invited students to consider multiple responses and explore real-world issues. In one instance, Informant 9 guided students through reading, discussion, and presentation tasks related to drought, asking them to define terms, explain causes, and assess impacts. Similarly, Informant 2 initiated discussions on population dynamics and prompted students to suggest solutions to migration challenges. These practices encouraged students to engage critically and draw from multiple sources-hallmarks of effective inquiry-based teaching. In contrast, lessons from Informants 1 and 10 displayed a narrower questioning approach. Informant 10, for instance, demonstrated procedures for map reading and posed closed-ended questions such as, "Can you measure a distance on a map? Which requires "yes" or "no" response.

The overall analysis reveals that most informants combined closed and open teaching strategies, leading to a blend of structured and guided tasks. Structured tasks typically involved teacher-provided questions with specific instructions, while guided tasks allowed students more flexibility to search for information and generate responses independently (Oppong-Nuako *et al*., 2015).

However, the implementation of IBP was inconsistent. While many teachers introduced collaborative and discussion-based strategies, there was a notable reliance on teacher-led delivery, especially in note-taking and factual questioning. Such practices may restrict students' ability to construct knowledge independently. As emphasized by Akpan and Beard (2016), inquiry-based classrooms require teachers to challenge students and guide them through reasoning processes, rather than focusing on correct answers alone.

Although the lesson plans reviewed reflect an emerging awareness of inquiry-based practices, the execution often remained at a moderate level of inquiry. The findings suggest a need for professional development aimed at enhancing teachers' ability to plan and implement open-ended, student-centered tasks that support deep learning and active engagement.

Theme 3: Classroom Environment

Teachers and students face multiple interconnected challenges that obstruct the learner-centred ideals of IBP. Chief among these are inadequate teaching and learning resources such as textbooks, internet access, and scientific instruments, which are essential for inquiry-driven exploration (Pretorius *et al*., 2016; Tambwe, 2017; Strom *et al*., 2018). Overcrowded classrooms further hinder the process, making it difficult to form interactive student groups, a key component of IBP (Kinsey and Moore, 2013; Machumu and Zhu, 2018; Obara and Bikai, 2019). Curriculum and policy limitations such as rigid timetables, insufficient lesson periods, and restrictions on smartphone use also constrain opportunities for collaborative and independent learning (Abraha and Tarekegne, 2018; Maass *et al*., 2017; Buchanan *et al*., 2016; Roux and Nagel, 2018; Rundgren, 2018). Additionally, the language barrier, stemming from the shift from Swahili-medium primary schools to English-medium secondary schools, limits students' ability to engage in class discussions and express ideas (Hussain *et*

al., 2011; Angelista and Gileard, 2018; Yan *et al*., 2018). Together, these systemic constraints illustrate how structural and policy-level shortcomings undermine the implementation of IBP.

Conclusion

Despite the awareness and partial application of IBP strategies by geography teachers, the study concludes that systemic constraints continue to undermine the effective realization of learner-centred teaching. Inadequate resources, large class sizes, restrictive curricular and institutional policies, and language challenges collectively hinder students' active participation and the inquiry-driven learning process. These obstacles reflect broader educational system limitations that must be addressed to create an enabling environment for IBP to thrive in Tanzanian secondary schools.

Recommendations

To support the broader adoption and sustainability of the Inquiry-Based Pedagogy, this study recommends the following areas for future research:

a. Resource Intervention Studies to investigate the effectiveness of resource enhancement programs (e.g., low-cost internet access, mobile learning tools, classroom reorganization) in facilitating IBP.
b. Policy-Oriented Research to examine how curriculum flexibility and policy reforms particularly on smartphone usage and extracurricular scheduling can accommodate inquiry-based learning.
c. Language Support Mechanisms to explore language transition programs and bilingual instructional strategies. The aim be to support students struggling with English as the medium of instruction.
d. Contextual Comparative Studies to analyse between public and private schools, or urban and rural settings, to highlight contextual differences and best practices in IBP implementation.
e. Longitudinal Impact Studies that will assess the long-term impact of IBP teacher training on classroom practices and student learning outcomes across different educational contexts.

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