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Effect of Teaching and Learning Resources on Teacher-Pupil Engagement: A Case Study of Basic Schools in Awutu-Senya East Municipality, Ghana

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Abstract

In today's evolving educational environment, effective teaching and meaningful pupil engagement remain central to academic achievement. However, many schools, particularly in under-resourced communities, continue to struggle with limited instructional materials and inadequate facilities. This study explored the effect of teaching and learning resources (TLRs) on teacher-pupil engagement (TPE) in a selected basic school in the Awutu-Senya East Municipality. A qualitative case study design was employed, involving a sample size of 46 respondents, comprising five teachers, a headteacher, and 40 pupils selected via purposive and simple random techniques, respectively. Data was collected on them through semi-structured interviews and observation checklists; and analysed thematically. The findings revealed that the school lacked many essential TLRs, including updated textbooks and functional ICT tools. In classrooms where some resources were available, pupils showed greater interest and participation in lessons. Additionally, teachers reported that using visual aids, manipulatives, and interactive methods significantly improved pupil attentiveness and understanding. However, most teachers indicated they had not received adequate training to effectively integrate ICT tools into their lessons, even where some devices were present. Further, the findings confirm a direct relationship between the availability and use of TLRs and the level of TPE. The insights from the selected school reflect broader challenges in similar public schools and call for immediate interventions to ensure quality education delivery. The findings serve as a wake-up call for educational planners and policymakers to address resource inequalities in public schools. The study concludes that

the availability of appropriate TLRs directly enhances TPE and classroom effectiveness. It recommends that school leaders be encouraged to adopt low-cost, innovative teaching aids to enhance TPE. Also, the Ghana Education Service and relevant stakeholders should prioritise resource provision and training for teachers.

Keywords: Academic achievement, Classroom participation, Teaching and learning resources, Teacher-pupil engagement, Teacher delivery.

Introduction

Education is a fundamental pillar of national development, playing a crucial role in shaping the future of individuals and societies (UNESCO, 2015). The quality of teaching and learning significantly influences pupil engagement and academic success (Darling-Hammond, 2000). One of the key factors affecting classroom engagements and participation is the availability and use of teaching and learning resources. These resources, including textbooks, visual aids, digital tools, and laboratory equipment, enhance lesson delivery and make learning more interactive and effective (OECD, 2018). Empirical studies have consistently shown a strong correlation between the availability of teaching and learning resources and increased teacher-pupil engagement.

Similarly, a large-scale study in sub-Saharan Africa by UNESCO (2023) reported that pupils in well-resourced environments demonstrated higher levels of attention, retention, and academic achievement. Additionally, teachers in these settings adopted more creative and learner-centered strategies, indicating that the availability of educational resources can stimulate improved pedagogical practices. Adequate teaching and learning resources improve pupils' capacity to understand concepts and remain attentive in class, according to numerous studies. Bransford, et al., (2000) highlight how interactive learning techniques can increase pupil engagement. While Vygotsky (1978) indicates that educational materials can scaffold learning within the Zone of Proximal Development (ZPD), Mayer (2009) emphasises how multimedia technologies enhance understanding and retention.

In the Ghanaian context, Frimpong (2021) examined over 100 basic schools in Ghana and found that schools with sufficient teaching aids such as charts, projectors, and textbooks recorded higher pupil participation and performance in classroom tasks compared to poorly resourced schools. Owusu and Amponsah (2021) further demonstrate a positive correlation between resource availability and pupil engagement in Ghanaian schools. Similarly, Mensah and Dapaah (2020) discuss how digital tools promote active participation in science lessons. Akyeampong (2017) identifies resource limitations as a major challenge for teachers in Africa. In contrast, Mensah et al. (2024) documented that in underserved rural schools, such as many Anglican JHS institutions, the lack of visual aids and

modern instructional tools significantly reduced pupil motivation and interactive engagement, especially in subjects requiring conceptual understanding like Science and Social Studies. These studies provide strong academic support for investigating the role of teaching and learning resources at Kwao Bondzie Anglican Basic School (KBABS).

At KBABS in the Awutu-Senya East Municipality, teacher-pupil engagement is crucial for ensuring effective learning outcomes. However, the extent to which teaching and learning resources contribute to this engagement remains an area of interest. While some teachers rely on traditional chalk-and-talk methods, others incorporate various teaching aids to foster better understanding among pupils (Ministry of education, Ghana [MoE], 2021). Several obstacles hinder the schools' effective teaching and learning due to inadequate resource allocation. Each class accommodates about 80 pupils, making it difficult for teachers to provide individual attention to struggling pupils an issue widely recognised in overcrowded classroom environments (UNESCO, 2015). Additionally, the limited availability of teaching and learning resources from Form One to Form Three contributes to an overwhelming workload for teachers and diminishes the overall effectiveness of lesson delivery (MoE, 2020). Furthermore, many pupils lack access to textbooks and study materials, impeding their ability to review and practice what they learn outside the classroom (World Bank, 2018).

Many basic schools in Ghana, especially those in semi-urban and rural areas, face challenges related to inadequate teaching and learning resources (TLRs). Kwao Bondzie Anglican Basic School (KBABS) is no exception. Teachers often struggle to engage pupils due to limited access to essential materials such as textbooks, science equipment, and ICT tools. This lack of resources can lead to reduced classroom participation, poor academic performance, and a general lack of motivation among pupils. Learning resources play a vital role in the teaching and learning process by enhancing teacher-pupil engagement (UNESCO, 2015). These resources include textbooks, audiovisual materials, digital tools, charts, and other instructional aids that facilitate understanding and engagement in the classroom (World Bank, 2018). The availability and effective use of these resources influence the extent to which teachers can actively engage pupils, stimulate their interest, and improve learning outcomes (OECD, 2018; Darling-Hammond, 2000).

Despite the recognised benefits of teaching resources, several obstacles hinder effective teaching and learning at Kwao Bondzie Anglican Basic School (KBABS) due to limited resource allocation. Each class has approximately 80 pupils, making it difficult for teachers to provide individual attention to struggling learners. Also, there exist disparities in the distribution and use of resources in some schools, despite numerous government initiatives to enhance educational infrastructure. Additionally, there are still a lot of unanswered questions regarding TLRs, especially when it comes to Ghana's KBAB, as a result increases teachers' workload and limits lesson effectiveness. Many pupils lack access to textbooks and other study materials, preventing them from reinforcing classroom knowledge through personal study and practice. The majority of research concentrates on public or secular private schools, ignoring religious establishments where engagement may be impacted by sociocultural factors.

Localised case studies of rural schools such as KBABS are hard to come by, and little research has been done on how instructors actually use resources beyond their availability. The purpose of this study was to examine how teacher-pupil engagement at KBABS is impacted by the availability and utilisation of teaching and learning tools. The effectiveness of teaching depends on the availability and proper use of instructional materials like textbooks, visual aids, and digital tools. However, schools in underprivileged areas, including KBABS, often lack these resources, making it difficult for teachers to engage pupils, especially in Science, Technical, Home Economics, and Mathematics, where practical demonstrations are essential. The shortage of textbooks limits pupils' ability to review lessons independently, affecting comprehension and retention. Additionally, the absence of ICT tools prevents pupils from benefiting from technology-assisted learning, while teachers struggle with inadequate infrastructure and training in digital education.

To address these challenges requires ensuring equitable access to quality learning materials, educational institutions can bridge the gap between limited resources and effective teaching practices, ultimately improving the learning experiences and academic performance of pupils at (KBABS). This study explores how the availability, accessibility, and effective use of teaching and learning resources impact teacher-pupil engagement in KBABS. This study provides insights into how teaching and learning resources influence teacher–pupil engagement, offering evidence to guide policy and resource allocation. It informs teacher training programmes, supports school leaders in improving resource utilisation, and highlights strategies to enhance pupil participation and learning outcomes. Additionally, it contributes to localised research on faith-based educational settings in Ghana. The specific objectives of the study are outlined below:

1. To determine the impact of teaching and learning resources on teacher-pupil engagement in basic schools.
2. To identify challenges teachers faced in the use of teaching and learning resources in basic schools
3. To evaluate the relationship between teaching and learning resources and teacher-pupil engagement.

LITERATURE REVIEW/THEORETICAL UNDERPINNING

Effects of Teaching and Learning Resources on Teacher-Pupil Engagement

The term ‘teaching and learning resources’ (TLRs) refers to supplies, equipment, and tools that are used to support instruction and improve learning. These consist of educational resources such as science kits, charts, audiovisual aids, ICT tools, and textbooks. When used effectively, these materials can enhance pupil comprehension and make lessons more interesting (Kola & Abdulwasiu, 2023; OECD, 2023; Bušljeta, 2013). According to Barrett (2018), the incorporation of digital platforms and interactive technologies has improved accessibility and pupil engagement, enabling more individualised and significant learning experiences. The importance of educational materials in enhancing teacher-pupil engagement

(TPE) is highlighted by recent studies. According to a Ghanaian study by Bordoh et al. (2024), interactive teaching strategies in Basic schools are severely hampered by a lack of access to multimedia tools like computers and dependable internet. Due to poor infrastructure and a lack of training, teachers experienced challenges using multimedia tools, which resulted in lower pupil participation in courses like social studies.

Digital tool integration in the classroom has been associated with better learning outcomes and higher pupil participation. For example, the usage of educational apps and interactive platforms creates a more stimulating learning environment that accommodates a variety of learning styles and encourages active engagement. However, the efficiency of these resources depends on how well teachers use them. To optimise the advantages of digital learning tools, comprehensive teacher training programmes are essential (Bordoh et al., 2024).

Teacher-Pupil Engagement in Learning

Teacher-pupil engagement is multifaceted, encompassing cognitive, emotional, and behavioural dimensions. The use of varied instructional materials can enhance these aspects: First, interactive resources, such as simulations and problem-solving activities, stimulate critical thinking and deepen understanding. Also, relatable content and real-life applications of lessons foster a stronger emotional connection to the subject matter. Hands-on activities and collaborative projects encourage active participation and sustained attention. Interactive instructional materials, including simulations, multimedia presentations, and problem-solving tasks, promote higher-order thinking skills and deeper conceptual understanding by actively involving pupils in the learning process (Fredricks, et al., 2004; Schindler et al., 2017). Bordoh et al. (2024) highlight that the effective use of multimedia resources in Ghanaian Basic schools has the potential to significantly enhance these engagement dimensions, provided that the challenges of resource availability and teacher training are addressed.

Additionally, pupils' emotional connection to the material is strengthened by educational materials that include real-world applications and culturally relevant examples, which boosts motivation and interest. By promoting involvement, cooperation, and sustained attention, practical exercises and group learning assignments further improve behavioural engagement. Effective multimedia resource integration in Basic schools can greatly increase TPE, according to empirical data from Ghana, especially when issues with resource availability and teacher professional development are sufficiently addressed (Bordoh et al., 2024).

Challenges in Accessing Teaching and Learning Resources

Numerous issues limit pupils' access to teaching and learning resources (TLRs) at institutions like KBABS. Second, insufficient funding makes it difficult to purchase lab supplies, textbooks, and educational technology, which forces educators to improvise and may reduce the efficacy of their lessons (EdTech Wire, 2021; SciPublications.com, 2022). Inadequate infrastructure makes it more difficult to use resources. While overcrowded classrooms hinder the practical use of available materials and limit opportunities for specialised instruction, many

schools lack suitably equipped classrooms, labs, and ICT facilities (EdTech Wire, 2021; Time.com, 2022). Moreso, teacher training deficiencies leave educators ill-prepared to use TLRs effectively, and poor maintenance of existing resources accelerates their deterioration, reducing usability. Collectively, these challenges create systemic barriers that negatively affect teaching quality and pupil engagement, emphasising the need for targeted interventions in funding, professional development, infrastructure, and resource management (SciPublications.com, 2022).

Challenges in Utilising Learning Resources for Engagement

The use of learning resources, particularly educational technology, in developing countries faces multiple challenges. Infrastructure deficits are significant, as many schools lack electricity, reliable internet connectivity, and adequately equipped classrooms, limiting the use of digital learning tools (EdTech Wire, 2021). Secondly, financial constraints hamper resource utilisation, restricting the acquisition and maintenance of textbooks, laboratory materials, and technological devices necessary for effective teaching and learning (DigitalDefynd, 2022). Additionally, teacher training gaps impede the integration of available resources into instructional practices, as many educators lack the skills and knowledge to use technology effectively (DigitalDefynd, 2022). The digital divide, driven by socioeconomic disparities, findings in unequal access to educational tools among pupils, exacerbating learning inequalities and limiting engagement opportunities (Financial Times, 2021; DigitalDefynd, 2022). Addressing these challenges is critical to improving resource-based engagement in classrooms.

Relationship Between Teaching and Learning Resources and Engagement

There is a high correlation between teacher-pupil engagement and the availability and efficient utilisation of instructional resources, according to empirical data. Research indicates that pupils exhibit increased levels of engagement, motivation, and comprehension when educational resources, such as textbooks, visual aids, manipulatives, and technology tools, are sufficiently accessible and intentionally incorporated into lessons (African E-Learning Academy, 2022; Schindler et al., 2017). Sufficient resources facilitate interactive teaching strategies that encourage pupils' cognitive, emotional, and behavioural participation in class.

In contrast, resource-constrained contexts common in many African schools' limit opportunities for active learning and meaningful engagement. Inadequate access to instructional materials often findings in teacher-centred practices, reduced pupil participation, and weaker learning outcomes (UNESCO, 2023). Addressing these disparities through improved resource provision, targeted teacher professional development, and supportive infrastructure is essential for fostering inclusive, participatory learning environments that promote sustained engagement and improved academic achievement outcomes overall.

Strategies for Improving Resource Availability and Utilisation

To address challenges in accessing and effectively using teaching and learning resources (TLRs), several strategies are recommended. First, support from the government and non-governmental organisations is crucial since more funding can provide schools the necessary supplies and facilities (EdTech Wire, 2021). Further, programmes for teacher training and professional development, such as workshops and ongoing capacity-building sessions, improve teachers' abilities to incorporate traditional and digital resources into their lessons (DigitalDefynd, 2022). Particularly in underfunded schools, community and stakeholder involvement can enhance resource provision through donations, volunteer work, and neighbourhood projects. Furthermore, technology integration can enhance learning experiences and promote participation. This includes open educational resources and affordable digital platforms (EdTech Wire, 2021). Finally, improved resource management, such as regular maintenance and efficient utilisation protocols, ensures the longevity and effectiveness of materials, maximising their impact on teaching and learning outcomes.

Theoretical Underpinning of the Study

The Constructivist Learning Theory and Cognitive Load Theory serve as the study's theoretical foundations, explaining how teaching and learning materials affect teacher-pupil engagement. According to constructivist learning theory, pupils actively create knowledge through engagement with their surroundings, and teachers support learning by providing the right tools and scaffolding (Piaget, 1973; Vygotsky, 1978). Textbooks, visual aids, and ICT tools are examples of instructional resources that promote involvement, dialogue, and teamwork, which increases teacher-pupil engagement (Bruner, 1966). Another theory backing this study is the Cognitive Load Theory, which emphasises that learners have limited working memory capacity and that instructional resources must be well-structured to minimise cognitive overload, is another hypothesis supporting the study (Sweller, 1988). Effective information processing, sustained attention, and active participation in class are all facilitated by well-structured and pertinent instructional resources (Sweller et al., 2011). When taken as a whole, these ideas clarify how teacher-pupil engagement is impacted by the calibre and application of teaching and learning materials.

Conceptual Framework

The conceptual framework in Figure 1 illustrates how teaching and learning resources influence teacher–pupil engagement (TPE). Teaching and learning resources, including textbooks, teaching aids, charts, audiovisual materials, and ICT tools- represent the independent variable. Their accessibility, sufficiency, and efficient usage by educators assist the delivery of lessons, aid in comprehension, and offer scaffolding that promotes pupils' engagement, involvement, and focus during class. TPE**,** the dependent variable, is reflected in pupils' active involvement, responsiveness, questioning, and sustained attention. The relationship between resources and engagement may be influenced by intervening variables

such as teaching strategies, lesson organisation, and classroom management. Well-planned resources combined with effective instructional methods enhance engagement, while inadequate resources or poor classroom practices may reduce engagement and participation, limit the quality of lesson delivery.

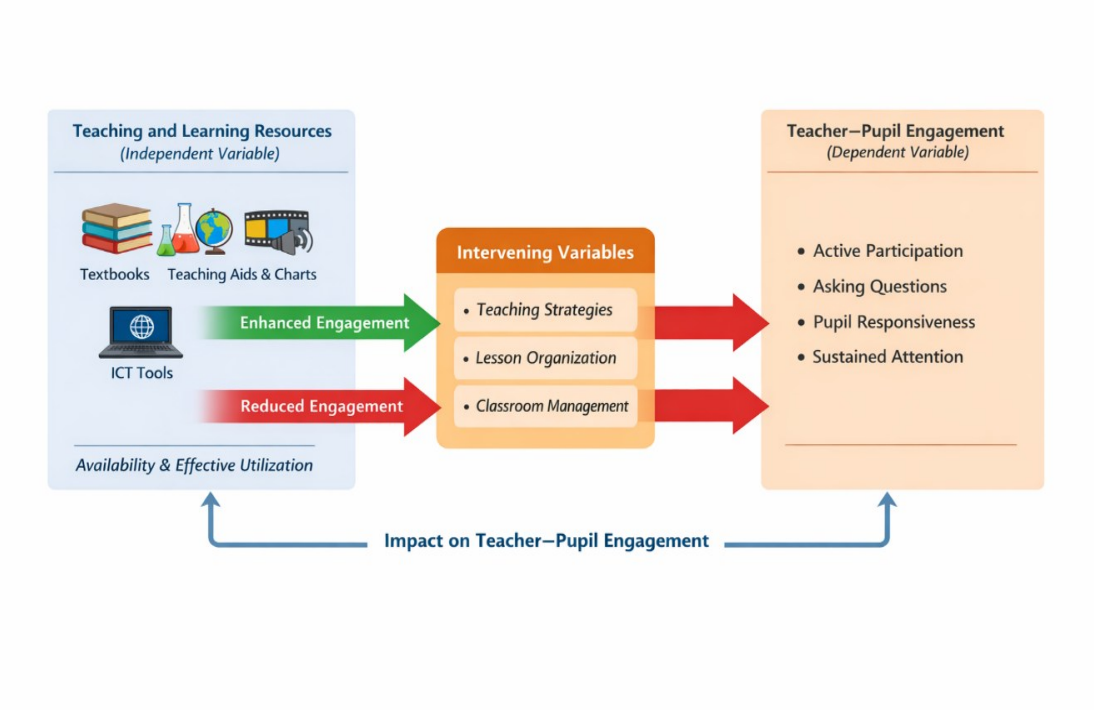


Figure 1: Framework for Teaching and Learning Engagement (Source: Gabriel-Wettey, 2026).

METHODOLOGY

Research Design

The study adopted a qualitative research approach, particularly employing a case study design which is ideal for capturing experiences and actionable findings (Creswell & Creswell, 2018; Creswell, & Poth, 2018). A case study design enables the researcher to investigate a phenomenon in depth within its real-life context (Yin, 2018). Kwao Bondzie Anglican Basic School (KBABS) was selected as the case because it provides an opportunity to examine how teaching and learning resources influence teacher-pupil engagement within a specific educational setting. The design was appropriate because it allowed for detailed understanding of classroom interactions, resource availability, and pupil participation during teaching and learning processes (Merriam & Tisdell, 2016).

Population, Sample and Sampling Techniques

The target population consisted of 200 participants, made up of all school pupils, teachers, headteacher and with administrative staff. The study was conducted at KBABS, in the Awutu-Senya East Municipality of the Central Region of Ghana. The school (KBABS) was chosen

because it represents a typical faith-based rural basic school environment where TLRs play a significant role in instructional delivery and pupil engagement. A total of 46 respondents were selected, comprising five teachers, a headteacher and 40 pupils. The five teachers and a headteacher were purposively sampled due to their experience, knowledge, and relevance to the subject areas, and also the fact that they are responsible for instructional delivery, supervision, and resource utilisation. This allowed for in-depth insights into resource utilisation in teaching (Etikan, Musa, & Alkassim, 2016; Palinkas et al., 2015). While the 40 pupils were chosen using simple random sampling technique to ensure equal opportunity for participation and representativeness (Creswell & Creswell, 2018). Pupil names were obtained from class registers, and random selection was conducted to ensure fairness. This combination of purposive and random sampling provided both targeted expert insights and generalisable pupil perspectives.

Data Collection Instruments

Two research instruments: semi-structured interview guide and non-participant observations were used to gather data from respondents. Interview guide designed in the form of open-ended questionnaire administered to respondents consisted of four sections: Section A: collected biographic data, section B: availability and adequacy of teaching and learning resources, section C: frequency of resource use in lessons and, section D: perceived impact of resources on pupil- engagement. Also, open-ended items help to collect qualitative information from the headteacher and teachers, allowing them to express their experiences and perceptions in detail (Merriam & Tisdell, 2016). The guide explored challenges regarding resource availability and their perceived impact on classroom engagement (Gautreau & Venkatesh, 2018).

Finally, non-participant observation was conducted using a checklist to assess how resources were used during lessons and how pupils responded. Observation provides firsthand information about engagement behaviours such as participation, attentiveness, and interaction (Yin, 2018). Observations focused on: frequency of resource use by teachers, pupil engagement and reactions during lessons with and without resources, and general condition and accessibility of teaching materials. Classroom engagement was defined as pupils' active participation in learning activities, including responding to questions, contributing to discussions, completing assignments, and demonstrating interest in subject matter. Observations were aimed at establishing the link between resource utilisation and pupil engagement.

Trustworthiness

To ensure validity and trustworthiness, two research instruments: semi-structured interview guide and non-participant observations were employed to gather data from respondents. Also, to achieve methodological rigor, the researchers adopted the established qualitative criteria of credibility, which was enhanced by the use of member checking whereby each participant was

able to read a summary of their individual interview responses. Further, dependability was ensured as an audit trail was created documenting all methodological decisions. Again, detailed descriptions of the participants, the research context, and the results were given to enable other people to assess how relevant the results might be in different settings, to attain research transferability. Finally, personal reflexive journaling supported the research confirmability (Creswell & Poth, 2018; Guba & Lincoln, 1985).

Data Collection Procedure

Prior to data collection, formal approval was obtained from the Ghana Education Service (GES) and the headteacher to conduct the study. The researchers visited the school to explain the purpose of the study to participants. The data collection process included the distribution of opened-ended questionnaires to selected pupils with clear completion instructions. Interviews were scheduled with the headteacher, and selected teachers for in-depth discussions. Classroom observations were done during normal instructional hours to ensure natural behaviour and to record accurate direct engagements involving teaching and learning resources. Data collection spanned two weeks, allowing sufficient time to capture classroom activities and resource usage comprehensively.

Data Analysis Processes

The demographic information of respondents as well as research objective one was analysed using Microsoft Excel, and presented in percentages, frequency tables, and bar charts were used to summarise findings (Creswell & Creswell, 2018). The qualitative data were analysed thematically to examine respondents' views on how teaching and learning resources influence teacher-pupil engagement within a specific educational setting. Data gathered from respondents were transcribed, coded and were thematically analysed by identifying recurring patterns, themes, and key insights regarding resource availability and pupil engagement (Braun & Clarke, 2019). Classroom observations complemented interview findings, and symbolic codes for teachers and a headteacher as (T1–T5, HT) protected anonymity.

Ethical Considerations

The study adhered to established research ethics, including: permission from GES, informed consent- participants were briefed on the study purpose and provided consent prior to participation. Second, confidentiality and anonymity, responses were kept confidential, and participants' identities were not disclosed. For voluntary involvement, participants were informed of their right to withdraw from the study at any stage without consequence (Saunders, et al., 2019). Special care was taken when dealing with pupils by seeking permission from school authorities and ensuring voluntary participation.

FINDINGS

Demographic Information of Respondents

The study involved responses from both teachers and pupils. A total of 5 teachers, a headteacher and 40 pupils participated. The demographic data collected helped to understand the background of respondents and provided context for interpreting their responses. Out of the five teachers and a headteacher: Four were male and two were female. All held at least a degree in education. The majority (4) had teaching experience ranging from 6 to 10 years. Among the 40 pupils: There was an equal representation of boys and girls. Pupils were aged between 12 and 15 years. Most pupils had been in the school for more than one academic year.

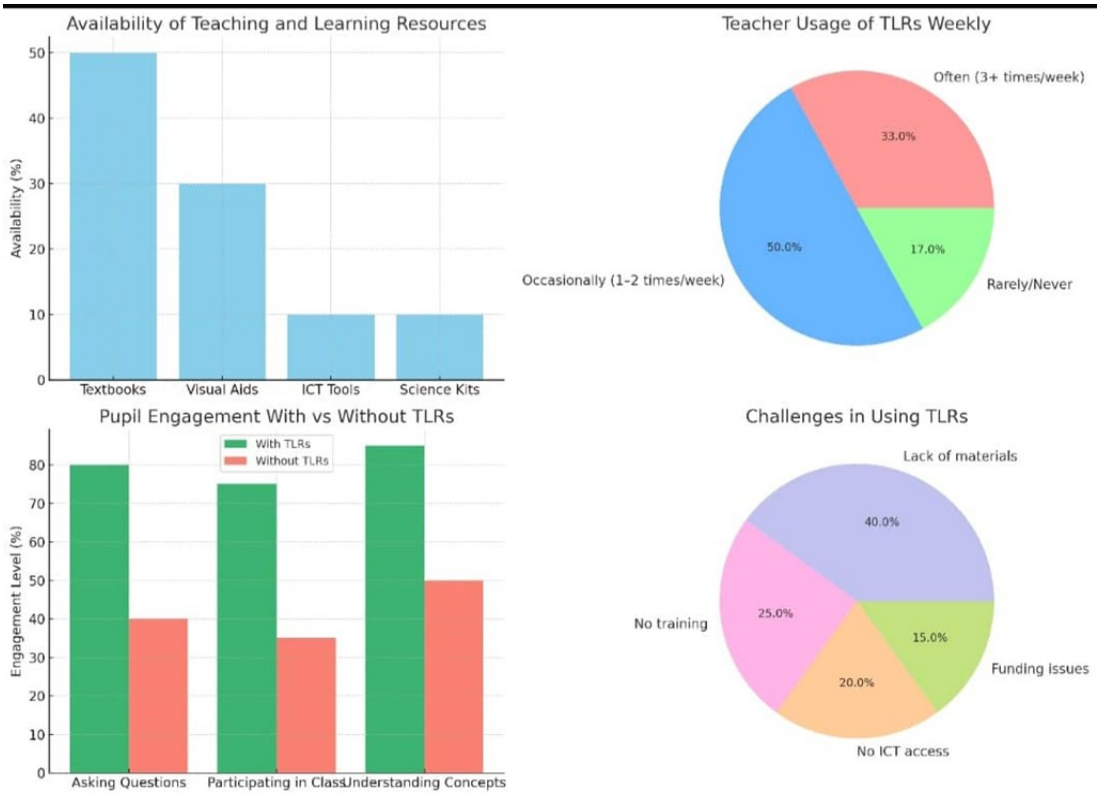


Figure 2: Impact of teaching and learning resources on teacher-pupil engagement

RO. 1. To determine the impact of teaching and learning resources on teacher-pupil engagement in Basic schools.

Availability and Use of Teaching and Learning Resources

The first objective of the study was to assess the availability of TLRs in the school.

Availability of Resources

Data from both teachers and pupils indicated a significant lack of adequate TLRs. Textbooks were available but in insufficient quantities, leading to shared use. Other essential resources

such as science lab materials, teaching charts, audio-visual aids, and ICT tools were either limited or entirely absent.

From the interviews, one teacher stated:

> *"We do our best with the little we have, but it's difficult to fully engage pupils without enough resources. We sometimes improvise with drawings on the chalkboard"* ***(T1).***

The chat below shows how teachers use TLRs weekly and the availability of teaching and learning resources in percentages to spell out the effectiveness on teacher-pupil engagement in the classroom. And also put the challenges into percentages using TLRs.

Availability of Teaching and Learning Resources

The bar chart titled "Availability of Teaching and Learning Resources" (TLRs) highlights the distribution of commonly used TLRs in schools. Textbooks (50%) are the most available resource, indicating that they remain a fundamental component of teaching. Also, Visual Aids (30%) are moderately available and serve as important supplementary tools. ICT Tools and Science Kits (10% each) are the least available, suggesting limited integration of technology and practical resources in the learning process. This implies the availability of resources is skewed towards traditional tools like textbooks, with minimal presence of modern and interactive resources. This imbalance may affect the ability of teachers to deliver diverse and engaging lessons, particularly in subjects that benefit from technology and hands-on experiments.

Teacher Usage of TLRs Weekly

The pie chart titled "teacher usage of TLRs Weekly" reflects the frequency of TLR integration in classroom teaching. Occasionally (1–2 times/week): 50%; Often (3 times/week): 33% and Rarely/Never: 17%. Half of the teachers use TLRs occasionally, while only a third integrate them frequently. This moderate usage may be linked to availability challenges or lack of training. Teachers who rarely or never use TLRs represent a concern, as this may directly impact pupil engagement and learning outcomes. This is how the teacher answered:

> *"Teaching and learning resources are limited in the school. When materials such as charts or textbooks are available, pupils participate actively. However, the shortage of ICT tools makes it difficult to support practical and engaging lessons" (****T3).***

Another teacher reported that:

> *"Most lessons depend on verbal explanation because resources are insufficient. Improvised teaching aids sometimes help, but they are not always effective. Adequate instructional materials would improve lesson delivery and encourage stronger pupil involvement" (****T4).***

This is how the headteacher answered*:*

> *"To increase teacher-pupil engagement in JHSs, TLRs are crucial. The accessibility and effective use of instructional resources, such as charts, models, and ICT tools, promote interactive teaching and increase pupil involvement. Pupils were observed to be more*

involved, curious, and questioning when resources were used. However, it was discovered that there were not enough resources to support teacher-centred methods, which resulted in less interaction and lower levels of pupil engagement" ***(HT).***

All in all, teachers agreed that teaching and learning resources are inadequate. When available, they promote pupil participation, motivation, and understanding. Shortages force reliance on traditional methods and improvisation, limiting interactive teaching and reducing effective teacher–pupil engagement.

RO. 2. To identify challenges teachers faced in the use of teaching and learning resources in Basic schools

Challenges in using TLRs; the pie chart titled "*Challenges in Using TLRs"* identifies key barriers faced by teachers. Lack of materials: 40% – the most cited challenge; no training: 25% – indicates that even when resources are available, teachers may not know how to use them effectively; no ICT access: 20% – reflects digital inequality or infrastructure issues. And Funding issues: 15% – highlights financial constraints limiting resource procurement. The study revealed several interrelated challenges that hinder teachers from effectively using teaching and learning resources (TLRs) in Basic schools. First, limited availability of resources emerged as a major constraint. Teachers reported that textbooks, laboratory kits, visual aids, and ICT tools were either insufficient or completely absent, forcing them to improvise lessons or rely solely on the chalkboard.

Limited availability of resources

One teacher explained:

"We often have to share textbooks among large groups of pupils, and when practical materials are missing, we cannot demonstrate concepts effectively. It is challenging to keep pupils engaged under these circumstance" ***(T2).***

Lack of ICT tools access

*"A major challenge is the shortage of teaching materials in basic schools. Limited textbooks and lack of ICT tools make lesson delivery difficult. Teachers often improvise, but this requires extra time and reduces effectiveness" (****T5****).*

Lack of resources and training in ICT

This is how the headteacher also responded:

"Teachers face several challenges while using TLRs in Basic schools (JHS). Among the main challenges were inadequate teaching materials, limited access to ICT resources, a lack of teacher preparation, and time limits brought on by excessive workloads. These difficulties have been demonstrated to restrict interactive teaching strategies and reduce pupil participation, which typically results in teacher-centred learning and lower levels of engagement" ***(HT).***

Second, inadequate teacher training affected resource utilisation. Many teachers and head admitted lacking the skills to integrate digital tools or modern teaching aids into their lessons, which limited their ability to use available materials optimally. Third, infrastructural and logistical barriers were frequently cited. Poor classroom conditions, large class sizes, and limited access to electricity and ICT infrastructure hindered the practical use of resources, especially for interactive and technology-based learning activities. Finally, funding constraints and poor resource maintenance compounded these challenges. Teachers indicated that even when resources were procured, inadequate funding prevented timely replacement or repair, reducing the longevity and effectiveness of materials. Collectively, these challenges restricted pedagogical innovation, constrained classroom engagement, and highlighted systemic barriers in resource-limited school contexts

RO. 3. To evaluate the relationship between teaching and learning resources and teacher-pupil engagement

Pupil engagement with verses without TLRs; This bar chart compares pupil engagement levels when TLRs are used versus when they are not used. It considers three aspects of engagement: with TLRs: 90%, without TLRs: 45%. Participating in class: with TLRs: 80%, without TLRs: 50% and understanding concepts: with TLRs: 90%, without TLRs: 55%. The data clearly indicates that the use of TLRs significantly enhances pupil engagement across all three domains. The differences between engagement with and without TLRs are substantial, confirming that TLRs are essential in making learning interactive, participatory, and effective. The qualitative data indicated a strong positive relationship between the use of teaching and learning resources (TLRs) and pupil engagement. Teachers reported that lessons incorporating textbooks, visual aids, and interactive materials prompted higher levels of pupil participation.

Teacher-Pupil engagement with or without TLRs and class participation

One teacher noted:

> *"When I use charts, models, or practical examples, pupils are more eager to ask questions and participate. Without these tools, lessons feel less engaging, and many pupils become passive"* ***(T5).***

A teacher in response emphasised that:

> *"Teaching and learning resources strongly influence teacher–pupil engagement. When materials such as charts and textbooks are used, pupils show more interest and participate actively. Without resources, lessons become less interactive, reducing attention and involvement"* ***(T1).***

Teacher reported that:

> *"Adequate resources make teaching more practical and enjoyable, encouraging pupils to ask questions and contribute during lessons. However, limited materials reduce opportunities for hands-on activities, leading to low motivation and weaker engagement in class"* ***(T3).***

This was the response of a headteacher:

> *"There is a clear relationship between teacher-pupil interaction and teaching and learning resources (TLR) usage. Utilising educational materials effectively increases pupil involvement, fosters learner-centred instruction, and enhances engagement. In my experience, using resources effectively tends to make lessons more learner-centred. Pupils participate more energetically, focus more intently, and understand the subject matter more deeply. Teachers feel more secure about their abilities to engage pupils when they have the resources, they need to support their instruction. However, poor or non-existent resource use was associated with lower engagement and passive learning, indicating that TLRs are crucial for enhancing teacher-pupil engagement"* ***(HT).***

In sum, teachers agreed that teaching and learning resources enhance teacher–pupil engagement by promoting participation, motivation, and understanding. Lack of resources forces reliance on traditional methods, limiting interaction and reducing pupils' active involvement, curiosity, and sustained interest in learning. Headteacher similarly described how TLRs facilitated understanding and active involvement. All in all, both teachers and headteachers emphasised that TLRs transform lessons from routine instruction to interactive learning experiences, enhancing questioning, participation, and comprehension. These insights confirm that the presence and effective use of resources are critical for fostering engagement and promoting meaningful learning.

DISCUSSION

The demographic characteristic of respondents revealed that the six teachers included four males and two females, all holding at least a degree in education, with most having 6–10 years of teaching experience. Among the 40 pupils, there was equal representation of boys and girls, aged 12–15 years, most of whom had been in the school for over one academic year. This distribution indicates that participants were sufficiently familiar with the teaching and learning environment, providing reliable perspectives on the availability and use of teaching and learning resources (TLRs) and their influence on engagement.

The findings showed significant differences in TLR availability and usage. ICT tools and science kits were rare (10% each), whereas textbooks were the most accessible (50%), followed by visual aids (30%). This pattern shows a dependence on conventional teaching materials with little incorporation of contemporary interactive tools that provide technology-enhanced training and experiential learning. According to earlier studies, having access to a variety of teaching resources is essential for both successful pedagogy and pupil engagement, particularly in areas that call for real-world application (Agyei & Voogt, 2012; UNESCO, 2017).

Teacher usage patterns further indicated moderate integration of TLRs. Half of the teachers used resources occasionally (1–2 times per week), a third used them frequently (3 times per week), and 17% rarely or never used them. This aligns with existing literature suggesting that mere availability of resources does not guarantee effective use; teacher confidence, training,

and workload influence the frequency and quality of integration (Tondeur et al., 2017). Qualitative interviews corroborated these observations, with teachers noting that limited resources constrain engagement, sometimes requiring improvisation with chalkboard drawings, reflecting a common practice in resource-limited contexts (Friedman et al., 2018).

The study identified key challenges to effective TLR use as lack of materials (40%), insufficient teacher training (25%), limited ICT access (20%), and funding constraints (15%). These findings are consistent with previous research emphasising that both resource availability and teacher capacity are crucial for promoting active classroom engagement (EdTech Wire, 2021; SciPublications.com, 2022; Kozma, 2003; UNESCO, 2017). In the Awutu-Senya East Municipality, socioeconomic differences impede the fair allocation of educational resources. Supply is delayed by bureaucratic procurement procedures, a reliance on central government subsidies, and a lack of internally generated finances. Inequalities are made worse by policy-practice gaps in GES rules, which compromise teacher-pupil interaction and the efficacy of education in basic schools (EdTech Wire, 2021). Addressing these systemic issues through professional development, improved infrastructure, and consistent provision of resources is essential to enhance instructional quality and pupil outcomes.

Finally, data on pupil engagement showed that TLR use and participation were positively correlated. 90% of pupils asked questions, 80% actively participated, and 90% showed understanding when TLRs were used, as opposed to 45%, 50%, and 55%, respectively, when resources were not used. These findings confirm previous findings that multimedia and practical aids improve attention, motivation, and knowledge retention (Mumtaz, 2000; Tondeur et al., 2017). They also show that TLRs are crucial for interactive and participative learning. Overall, the analysis highlights a robust relationship between pupil involvement, teacher use, and TLR availability. The findings support constructivist learning theory, which holds that pupils actively create knowledge by interacting with classmates, resources, and their surroundings (Piaget, 1973; Vygotsky, 1978). To maximise engagement and learning findings in low-resource environments, focused interventions such as teacher training, the availability of a variety of TLRs, and better infrastructure are essential.

CONCLUSION

This study set out to explore how teaching and learning resources (TLRs) affect teacher-pupil engagement at Kwao Bondzie Anglican Basic School (KBABS). The data showed that while textbooks were available, they were not enough for every pupil, meaning they often had to be shared. Other resources like science kits, visual aids, and ICT tools were either limited or completely missing. For example, only 10% availability was reported for ICT tools and science kits, while visual aids were moderately available at 30%. Textbooks made up 50% of available resources.

Engagement levels were clearly higher when TLRs were used. According to the findings, 90% of pupils asked more questions and 80% participated actively in class when TLRs were used. Understanding of concepts rose to 90% with TLRs, compared to just 55% without them. It can

be concluded that, TLRs play a major role in how well pupils engage in the classroom. When used effectively, these resources lead to greater interest, better participation, and improved understanding among pupils.

Even though the school faces challenges like limited materials, poor ICT access, and lack of training, teachers are trying their best with what they have. But their efforts can only go so far without proper support. The study shows that improving access to teaching materials, especially visual aids and digital tools, can significantly boost the quality of teaching and learning. This case study at KBABS reflects a wider issue facing many public schools: the demand for quality education is high, but the tools needed to support it are not always available.

RECOMMENDATIONS AND FUTURE RESEARCH

Recommendations

- Based on the findings, study recommends to the Government and the Ghana Education Service to allocate more resources to schools, particularly for ICT, science equipment and ongoing professional development.
- Second headteachers should actively seek support to provide more teaching materials, especially visual aids and basic science tools.
- Organise in-service training sessions to help teachers learn how to use TLRs more effectively. Teachers should endeavour to improvise and use local materials where possible. Share best practices with each other and take part in any training that becomes available to improve how TLRs are used.
- Finally, encourage PTA involvement in fundraising to support teaching materials. Mobilise the local community to assist in making or sourcing low-cost learning aids.

Limitation and Further Research

This study was limited to one school, limiting its generalisation, so future research could look at a wider group of schools in different districts to see if the findings are similar. It would also be useful to compare how different types of TLRs like digital tools versus physical materials affect learning in various subjects. Lastly, future studies could look at how long-term use of TLRs influences academic performance and pupil retention.

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