

ARE TEXTBOOKS FUNCTIONAL IN TEACHING AND LEARNING IN PRIMARY SCHOOLS? EVIDENCE FROM SELECTED SCHOOLS IN GHANA

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ABSTRACT

Textbooks are resources for acquiring knowledge on a wide range of subjects. They are extensively used in households, libraries, and schools by learners. This study explores the role of textbooks in Ghana's Basic Education System. It examines its current state, identifies teaching materials, and investigates the integration of new knowledge for effective teaching and learning. This study adopted an explanatory sequential mixed-methods design. Using a simple random sampling technique to select 612 pupils and 82 teachers, quantitative data were collected through a survey. Statistical analysis was performed using descriptive statistical frameworks via IBM SPSS (Statistical Package for the Social Sciences, Version 26.0). The qualitative data derived from the open-ended questions were analysed using thematic analysis. The findings revealed that traditional textbooks, audio-visual materials, digital resources, hands-on manipulatives, and online platforms are the teaching and learning materials used in schools. Based on the responses from 82 teachers, these materials encourage hands-on learning by providing pupils with interactive experiences. Considering the learning techniques influenced by textbook use, textbooks influence collaborative learning and discussions, memorisation and recall, note-taking and summarising, problem-solving and critical thinking, and self-directed learning and inquiry. Also, most teachers rely on established guidelines and curriculum standards when selecting and using textbooks. We recommend that educational policymakers prioritise the provision of adequate textbooks to pupils in basic school, ensuring that all students have equal access to essential learning materials.

Keywords: Textbook, textbook usage, teaching and learning, basic school, learning materials.

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INTRODUCTION

Textbooks have long served as foundational resources for education, providing essential support for both teachers and students (Smart *et al.*, 2020). Studies have shown that textbooks play a vital role in education by providing the necessary knowledge for different language-teaching situations (Gong *et al.*, 2020; Kırkgöz, 2011; Muliya and Aminatun, 2020). It is perhaps best to consider textbooks as instruments for achieving predetermined goals and objectives concerning learner requirements. The production, content selection, distribution, and use of textbooks by teachers and students are shaped by a series of negotiations and compromises (Apple and Christian-Smith, 2017; Dongxing, 2020; Mohammadi and Abdi, 2014).

According to Smart *et al.* (2020), “textbooks will continue to function as the basis of basic education for many sites globally for many years to come” (p. 9). Structurally, literature establishes three primary functions of a textbook: first, as a de facto curriculum guide that operationalises national standards; second, as an instructional scaffold providing structured exercises for learners; and third, as an equitable resource equaliser in resource-constrained environments (Gerlach and Lüke, 2024; Shalgimbekova *et al.*, 2024).

Further, textbooks are tools for disseminating information across the globe, but their role extends beyond the dissemination of information as they mediate the politics of what is taught and the methods used in teaching (Robinson *et al.*, 2014; Susiati and Mufidati, 2020). In addition, they offer new teachers a framework for structured, consistent and logically progressive teaching and designing courses and activities (Mohammadi and Abdi, 2014). They present a comprehensive picture of a subject (İnam and Turanlı, 2024; Simon and Garcia-Belmar, 2016) and add value to every student’s life in

the classroom. Mohammadi and Abdi (2014) argued that textbooks can offer a structured framework that facilitates objective-driven instruction, motivating students to actively participate and strive in their educational endeavours. In Ghana, where the Ministry of Education coordinates textbook development (Essuman and Osei-Poku, 2015), these materials play a vital role in the lives of every Ghanaian student. They are often the primary source of information for students, influencing their learning and teachers’ instructional methods (Nwagbata *et al.*, 2021). Lu *et al.*, (2022) and Smart *et al.*, (2020) argue that well-designed textbooks have the potential to make learning more fun, lasting, and meaningful. They actively engage learners’ cognition through visual processing, analytical thinking, posing questions, testing hypotheses, and verbal reasoning.

The rapid advancement of technology and concerns about outdated content and student engagement have led to questions about the continuous relevance of traditional textbooks (Robinson *et al.*, 2014). While global literature highlights a shift in paradigm toward digital learning ecosystems (Nguyen and Tuamsuk, 2022; Bygstad *et al.*, 2022; Rojars and Chiappe, 2024), a critical gap remains regarding how Sub-Saharan African countries, in particular Ghana, reconcile traditional print textbook functionality with actual classroom usage (Avedzi, 2025). In Ghana, the implementation of the Standards-Based Curriculum by the National Council for Curriculum and Assessment (NaCCA) has faced operational bottlenecks, including delays in textbook distribution and mismatches in resource utility. Previous domestic studies (Padmore *et al.*, 2025; Arko and Kporyi, 2022; Attakumah and Tulasi, 2015) focused heavily on the availability of textbooks rather than their functional utility during instruction. According to Nguyen and Tuamsuk (2022), new learning systems require policies, procedures, technologies, readiness of schools, teachers, learners, stakeholders,

and digital learning content to solve challenges and increase the resilience of educational institutions. This study fills this gap by evaluating how textbook usage directly shapes pedagogical choices and student engagement in Ghanaian public basic schools. Also, it explores how textbooks meet students' needs and learning objectives in terms of curriculum alignment, pedagogical appropriateness, and level of engagement. Therefore, the role of textbooks in facilitating effective teaching and learning needs to be critically examined. This research seeks to answer the following questions:

- What teaching and learning materials are used in schools?
- How do textbooks influence the learning techniques of pupils?
- What is the influence of textbooks on teachers' decisions about content and approach to teaching?

Roles of Textbooks on Learners and Teachers

Textbooks are the most significant learning aids used today by students in their learning process. In every educational system worldwide, textbooks are essential for instructors and students alike. Good textbooks evoke students' curiosity, interest, and attention (Mithans and Grmek, 2020) as they enable students to comprehend and appreciate concepts and values. A well-written textbook stimulates reflective thinking and develops problem-solving abilities among students (Haulle and Kabelege, 2021). Again, textbooks provide a structured approach to learning and serve as a guide for students to navigate through a subject or topic; they are considered mediators between the official curriculum and the curriculum that teachers execute (Sievert *et al.*, 2021). They are a critical resource that can embody and legitimise new and different approaches. Where textbooks lead, school and teacher culture may follow

(Torkar and Kovač, 2022). The textbook is a reliable resource frequently used by students in the classroom and at home. They are considered the second most important factor in the socialisation process of children after teachers (Lee and Mahmoudi-Gahrouei, 2020). The essential role of textbooks in the teaching and learning process is obvious; they serve as written resources designed to enhance students' knowledge and learning experiences in the classroom (Susiaty and Mufidati, 2020).

Teaching and Learning Materials Used in Schools

Learners use textbooks and other resources to influence their learning and the educational system. These instructional resources are essential to the teaching and learning processes (Okoji and Olubayo, 2021). The availability of learning materials such as textbooks, suitable chalkboards, science kits, math kits, teaching guides, science guides, audio-visual aids, overhead projectors, and other resources is crucial to the teaching and learning process (Nwagbata *et al.*, 2021).

Teacher's primary goal is to get their point across to their pupils in the most straightforward, compelling, and useful way possible (Ahmad and Garba, 2021). The importance of these learning materials includes enhancing the memory of students, facilitating the teaching-learning process, and improving the rate of accumulation (Nwagbata *et al.*, 2021). In addition, Rinekso (2021) revealed that learning materials are an important link between teachers and students, promoting a shared learning experience and facilitating student engagement in the educational process. Textbooks play a central role as a relevant resource for teachers and students in the face of technological progress (Baleghizadeh and Amiri Shayesteh, 2020).

Constructivism Theory

Constructivism theory, which emphasises learning as an active process in which learners construct knowledge, provides valuable insights into the role of textbooks in primary education. According to constructivist principles, effective learning occurs when students are actively engaged in creating their understanding, rather than passively receiving information (Ahmed *et al.*, 2023). Jean Piaget, a pioneer of constructivism, emphasised the importance of developmental stages in children's learning, suggesting that educational materials must be aligned with students' cognitive abilities (Bashir, 2020). Textbooks, when well designed and used effectively, can support a constructivist approach to learning. They should not merely present information but should include activities that promote exploration, critical thinking, and problem-solving. For instance, textbooks can provide scaffolding through guided questions, interactive exercises, and opportunities for students to reflect on their prior knowledge and experiences (Suhendi *et al.*, 2021). This aligns with the idea that each learner constructs knowledge both individually and socially, suggesting that textbooks should facilitate collaborative learning and discussions (Suhendi *et al.*, 2021).

Role of Teachers and Textbooks in Constructivist Teaching and Learning

The role of the teacher in a constructivist environment should be to provide the setting, pose the challenges, and offer the support that will encourage learners to create their knowledge through experiences (Golder and Bengal, 2018). *Constructivist teachers* act as facilitators, guiding students to discover new knowledge and encouraging them to reflect on their learning processes. They also provide feedback that helps students refine their thinking and improve their understanding. Teachers may use textbooks for discussions

and exercises, but they also urge students to look for other information sources, such as primary materials, online sources, and personal experiences (Golder and Bengal, 2018).

The role of textbooks in *constructivist teaching and learning* is widely explored in educational research, as textbooks significantly influence the learning environment and can either support or deter constructivist teaching approaches. In addition, Hokkanen and Kosonen (2013) also stated that textbooks can promote constructivist learning in areas such as nutrition education.

Theoretical Framework

This research was based on the theory of constructivism. Suhendi *et al.*, (2021) defined constructivism as generative learning that creates meaning from what is learnt. In contrast to the traditional learning theories, which observe learning as a procedure of transmitting knowledge to the learner, constructivism observes learning as a procedure of active development of knowledge by the learner (Ahmed *et al.*, 2023). Indeed, textbooks as constructivist tools accommodate students' different learning styles. Textbooks also enable students to comprehend and appreciate concepts and values. A well-written textbook stimulates reflective thinking and develops problem-solving ability among students (Haulle and Kabelege, 2021). While textbooks have traditionally served as a basic educational resource, there is a need to assess their relevance and effectiveness in teaching and learning at the basic education level.

Conceptual Framework

Textbooks serve as essential tools for both teachers and learners in the educational enterprise. They act as mediators between the official curriculum and its implementation, providing a foundation that enriches instruction, supports learning and enables

learners to construct their understanding actively. Sievert *et al.*, (2021) convert the abstract curriculum into practical tasks that instructors and students can complete. Effective teaching requires using various resources and strategies to meet the individual needs of learners and promote their success. It can be deduced that textbooks are central to teaching and learning and are the primary source of information for learners.

Given that learners (pupils) use textbooks in their learning and teachers also use textbooks in their teaching, in the context of this study, the main variables were conceptualised as follows: Textbooks, as used in this study,

entails printed, NaCCA-approved physical coursebooks; Digital Resources encapsulates e-textbooks, PDF learning materials, or projected learning slides accessible via the school or teacher devices; Hands-on Manipulatives includes physical objects (e.g., math counters, maps, blocks) used alongside textbooks to concretise abstract ideas. Thus, in connection with the methods of teaching, Collaborative Learning was used in classroom activities where pupils shared textbooks, in pairs or small groups, to solve assigned tasks. Finally, to safeguard pupils' comprehension, terms that were context- and content-specific were simplified.

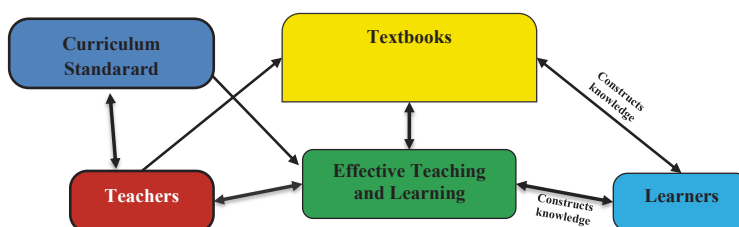


Figure 1: Conceptual Framework of Textbook use, by Teachers and Learners

Figure 1 illustrates the functional role of textbooks in the teaching and learning process. Learners are the individuals who are actively involved in the learning process. The framework highlights the interconnectedness of the teacher to the established guidelines and curriculum standards used to ensure effective teaching and learning, textbooks used in schools, and learners' techniques acquired in the learning environment. The conceptual framework illustrates the operational dynamics of resource utility. The Independent Variables (IV) comprise the core attributes of textbook functionality, that is, accessibility/frequency of use, curriculum alignment, and learning techniques such as collaborative learning, note-taking, and critical thinking. The Dependent Variable (DV) is the perceived efficacy of teaching and learning outcomes. This relationship is mediated by

how teachers contextualise their method of delivery.

MATERIALS AND METHODS

Research Design

This study utilised an explanatory sequential mixed-methods design. This design is highly appropriate because it allows quantitative trends to be established first, followed by qualitative insights to explain why those trends occur (Creswell and Creswell, 2018). For an investigation into textbook functionality, quantitative metrics reveal the frequency and distribution of use, while qualitative feedback from teachers and learners explains the nuances of classroom barriers.

Sampling Procedure and Participants

The target population comprised public basic schools within the Kumasi Metropolis. To determine a representative sample size from a finite population of N individuals, Yamane's (1967) formula was applied:

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

Where n is the sample size, and e is the margin of error (0.05). Based on institutional records of the target schools, this formula yielded a required sample size of approximately 612 pupils and 82 teachers across the selected circuits, with a total of 694 participants. A simple random sampling technique was subsequently executed using randomised school registers to ensure every student and teacher had an equal and independent chance of selection, thereby minimising selection bias.

Controlling Researcher Bias

To mitigate researcher bias during instrument administration, several procedural safeguards were instituted. First, inter-rater reliability was established by pre-testing instruments in a neighbouring district not included in the final study. Second, during data collection, the researchers utilised a standardised script to explain the questionnaire instructions without prompting or influencing responses. Finally, to eliminate social desirability bias, participants were guaranteed absolute anonymity, and questionnaires were collected using sealed drop-boxes.

Design and Validation of Data Collection Instrument

Designed to capture participants' perspectives on textbook availability, usage and influence on teaching and learning, a structured questionnaire was developed to collect the data on how textbooks are functional in

teaching and learning in primary schools. The questionnaire was designed to align with the research questions and aimed to consider major aspects of how textbooks function in teaching and learning in primary schools in Ghana. The process began by identifying key themes related to textbooks, their functions in the teaching and learning process, including background information, teaching and learning materials used in primary schools, textbook influence, learning techniques of pupils, influence of textbooks on teachers' decisions, content and approach to teaching. Each section was customised to reflect the study's goals and the unique experiences of teachers and pupils.

In framing the items, we drew on conventional questionnaires and relevant literature to ensure the instrument incorporated evidence-based insights while remaining specific to this research context. By referencing previous studies, we combined reliable and appropriate item structures while adapting questions to address the exclusive nuances of this setting. The finalised questionnaire consists of four main sections, each corresponding to a different aspect of how textbooks are functional in the teaching and learning in selected primary schools.

Section 1: Demographic Characteristics of Respondents – This section includes items that reveal the characteristics of respondents, including their age.

Section 2: Teaching and Learning Materials Used in Primary Schools – This section includes items that assess various teaching and learning materials, availability of textbooks, and source of textbooks.

Section 3: Influence of Textbooks on the Learning Techniques of Pupils - This section considered understanding textbook content without help, effects of textbooks on performance, content of textbooks- interesting

and engaging, and textbooks and learning styles.

Section 4: Influence of Textbooks on Teachers' Decisions about Content and Methods of Teaching- This section addresses the influence of textbooks, and the perceptions of teachers regarding the effectiveness of textbooks in guiding their content and teaching decisions.

The sections were crafted with questions adapted based on well-known best practices from prior studies. This approach ensured that the questionnaire was culturally relevant and specific to the topic being investigated. A pre-test was conducted with a sample from the neighbouring population to refine question wording and confirm that the items were easily understood. This pre-test stage helped identify areas for improvement, ensuring the instrument's clarity and suitability for the intended respondents. The instrument was reviewed by senior experts for their input. The updated instrument was then administered to teachers using Google Forms that had close-ended items, Likert-scale questions, and open-ended prompts. Teachers received the questionnaire via email or WhatsApp and completed it independently. For pupils, the questionnaire was administered in person by the research team. The researchers provided verbal explanations of each item to ensure pupils understood the questions and could respond appropriately, given the young age of some respondents.

Learners were asked to determine their level of agreement with each statement using a Likert scale ranging from 1 to 5, with 1 indicating "strongly disagree" and 5 indicating "strongly agree."

Analytical Framework

Quantitative Data Analysis

To analyse the demographic profiles, textbook availability, usage patterns, and perceived impacts, the quantitative component of this study was processed and analysed using descriptive statistical frameworks via IBM SPSS (Statistical Package for the Social Sciences, Version 26.0). Quantitative data were harvested from structured, close-ended questionnaire items administered to two distinct sample populations: basic school teachers (N = 82) and basic school learners/pupils (N = 612).

Specifically, the frequencies procedure was used to calculate absolute counts (N) and relative percentages (%) for categorical, nominal, and ordinal Likert-scale variables. Visual representations of the distributions were generated using graphical tools within SPSS, including pie charts, bar charts, line plots, and area/scatter graphs. The application was chosen for its user-friendly interface and efficient data processing capabilities.

The qualitative data gathered from the open-ended questionnaire items completed by both teachers and learners were analysed using thematic analysis, following the structured six-phase framework established by Braun and Clarke (2006), which was applied across the entire dataset. This descriptive approach allowed for the systematic identification, organisation, and extraction of recurring patterns and core insights from the raw textual responses.

RESULTS

Demographic Characteristics of Respondents (Teachers and Pupils)

A total of 82 teachers participated in the research, with 44 being female (53.7%) and 38 being male (46.3%). The age distribution of the respondents is illustrated in Figure 2.

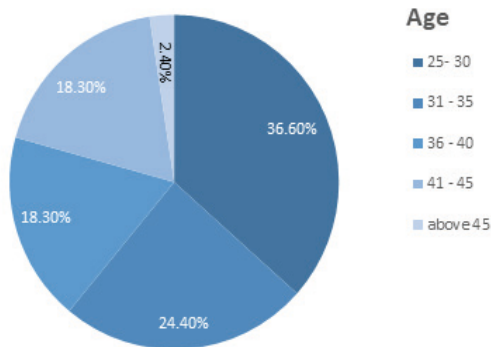


Figure 2: Age of Respondents

About 30 teachers (36.6%) were in the age range of 25 - 30 years. Within the age range of 31 - 35 years, there were 20 teachers, making up 24.4%, and 15 teachers (18.3%) belonged to the 36 - 40 age group and a similar proportion (18.3%) was found in the 41 - 45-year bracket. This latter group consists of experienced teachers, likely contributing valuable insights based on their years of teaching. A smaller number, 2 out of 82 teachers (2.4%) of the total, were above 45 years old.

A total of 612 pupils participated in the study. Of these, 318 were female, representing 52% of the total responses, while 294 were male, contributing 48% of the total responses.

Pupils between the ages of 12 and 14 were the most prominent, with 222 students, representing 36.3% of the total responses. Those between 6 and 8 years were 65 students, accounting for 10.6% of the total responses. The 9 to 11 years category had the highest count with 291 students, representing 47.5% of the total responses. The above 15 age range was 34 students, making up 5.6% of the total responses. The lower primary category had 165 students, which is 27% of the total responses, while the upper primary group accounts for 447 students, representing 73% of the total responses.

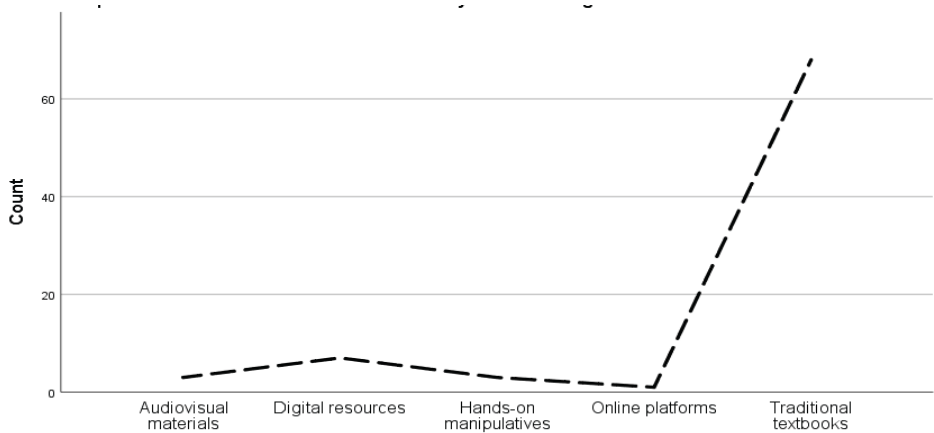


Figure 3: Teaching and Learning Materials Commonly Used

Figure 3 illustrates the five types of teaching materials used in basic schools. These are the traditional textbooks, audio-visual materials, digital resources, hands-on manipulatives, and online platforms based on the responses from the 82 teachers (representing 100%). Three teachers (3.7%) mentioned using audio-visual materials. Seven teachers (8.5%) indicated that they use digital resources, while three teachers (3.7%) mentioned utilising hands-on

manipulatives in their teaching methods. One (1.2%) of the respondents use online platforms, while sixty-eight teachers (82.9%), rely on traditional textbooks for teaching. Collectively, these materials encourage hands-on learning, providing pupils with interactive experiences.

To verify the availability of textbooks, the pupils were asked to answer the question: ‘Do you have a textbook?’

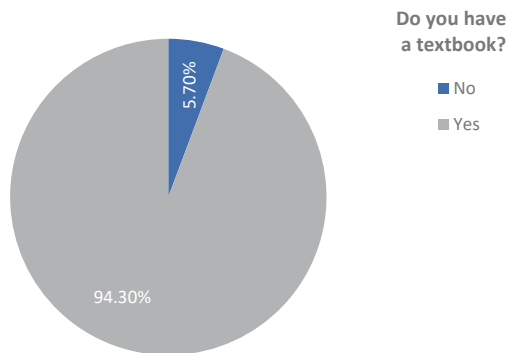


Figure 4: Availability of Textbooks

Figure 4 presents insight into participants’ access to textbooks. 35 pupils (5.7%) responded “No” when asked if they had textbooks. Conversely, the vast majority of 577

pupils (94.3%) answered “Yes,” highlighting the widespread presence of textbooks among participants.

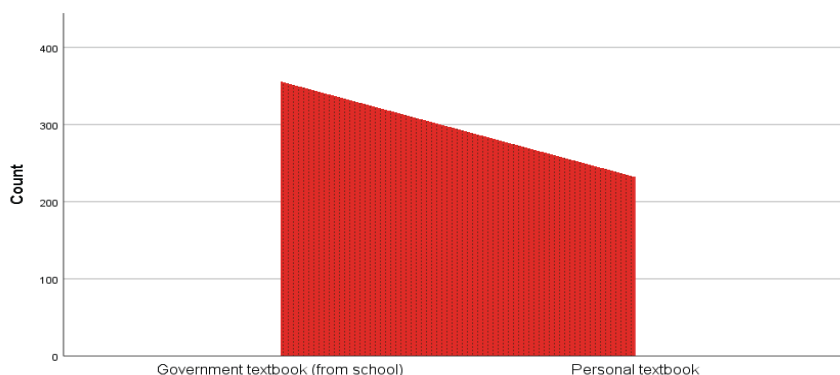


Figure 5: Source of textbooks

Figure 5 illustrates the sources of textbooks available to pupils, distinguishing between textbooks supplied by the government and those purchased by parents. Among the participants, 380 students (62.1%) reported

having textbooks supplied by the government, while 232 students (37.9%) indicated that their textbooks were purchased by their parents. This data suggests that a significant number of pupils have access to textbooks.

Influence of Textbooks on the Learning Techniques of Pupils.

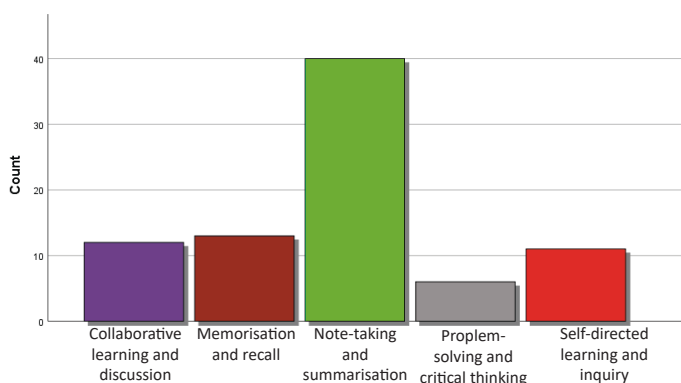


Figure 6: Specific Learning Techniques Influenced by Textbooks

Figure 6 illustrates teachers' views on the learning techniques influenced by textbook use. Twelve teachers (14.6%) said textbooks influenced collaborative learning and discussions. Thirteen teachers (15.9%) identified that textbooks influenced memorisation and recall.

Forty teachers (48.8%) noted that textbooks influenced note-taking and summarising. Six teachers (7.3%) highlighted that textbooks influenced problem-solving and critical thinking, while eleven teachers (13.4%) emphasised that textbooks influenced self-directed learning and inquiry.

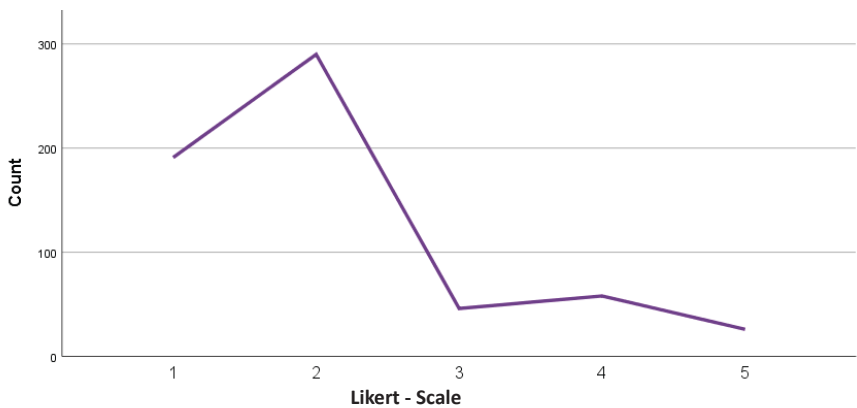


Figure 7: Understanding Textbook Content Without Help

Figure 7 displays pupils' responses on whether they can understand the content of a textbook without help. A total of 612 students were asked to rate their level of agreement with the statement, "I can understand the content without help from a teacher", on a Likert scale from 1 to 5, where 1 represents "strongly disagree", and 5 represents "strongly agree". 191 pupils (31.2%) indicated they lacked confidence in their ability to comprehend the content without help from a teacher.

The largest group of 290 learners (47.4%) indicated that they needed teacher support to understand the content. 46 students (7.5%) took a neutral stance, neither agreeing nor disagreeing with the statement. 58 students (9.5%) agreed that they understood the content without the teacher's help. A smaller group of 26 students (4.2%) strongly believe in their capability to grasp content without assistance. One student (0.2%) did not answer this question.

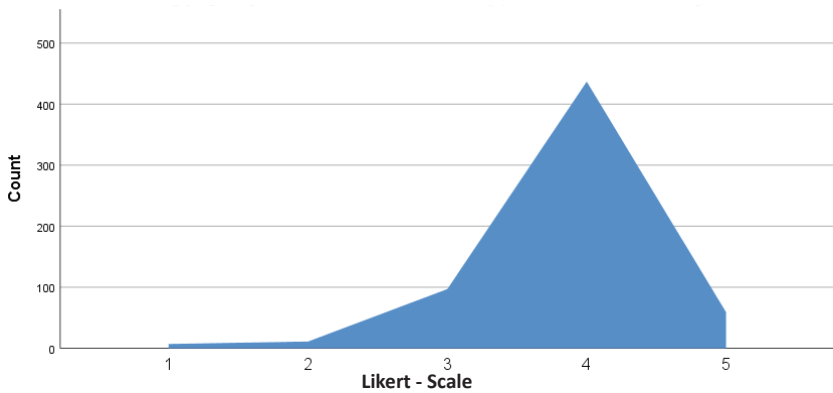


Figure 8: Effects of Textbooks on Performance

Figure 8 displays the pupils' responses to the statement "The use of textbooks affects my performance as a student". Out of 612 pupils, 437 (71.4%) agreed with the statement, while 97 pupils (15.8%) were neutral, and 59 pupils

(9.6%) strongly agreed. 11 pupils (1.8%) disagreed with the statement, and 7 pupils (1.1%) strongly disagreed.

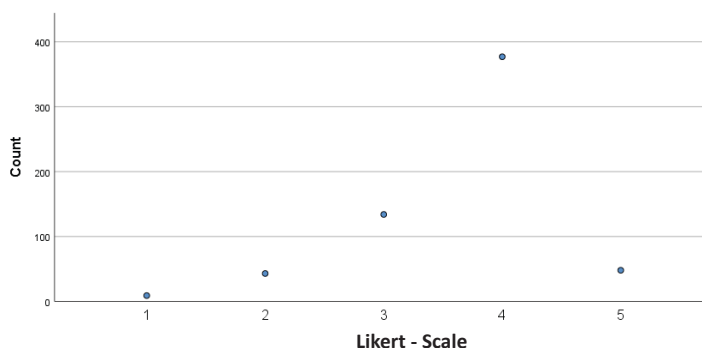


Figure 9: Content of Textbooks- Interesting and Engaging

Figure 9 displays the pupils' responses to the statement, "I find the content in the textbooks interesting and engaging", measured on the Likert scale from 1(strongly disagree) to 5(strongly agree). The highest rating was on 4, with 377 pupils (61.7%) agreeing with the

statement, while 48 pupils (7.8%) strongly agreed with the statement. The next was 134 students (21.9%) who remained neutral. Lastly, 43 pupils (7.0%) disagreed with the statement, and 9 pupils (1.5%) strongly disagreed with the statement.

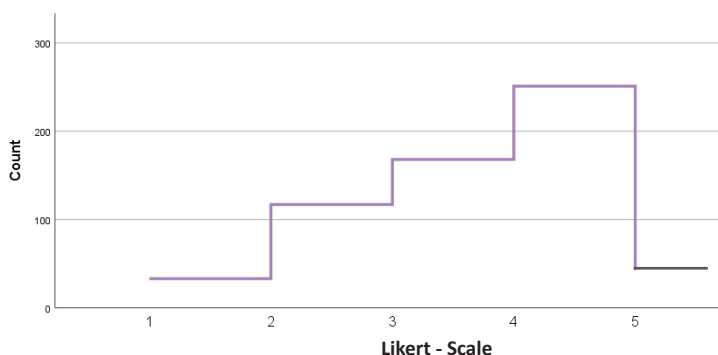


Figure 10: Textbooks and Learning Styles

Figure 10 presents pupils' responses to the statement regarding whether textbooks adequately address their learning styles and preferences.

The highest Likert scale rating was 4, which indicates that the learners agreed that textbooks adequately address their learning styles and preferences. This response accounted for 251 pupils (41%).

Next, 168 pupils (27.5%) chose the neutral option (rating of 3), 117 pupils (19.1%) disagreed (rating of 2), while 43 pupils (7%) strongly agreed (rating of 5), and 33 pupils (5.4%) strongly disagreed (rating of 1).

Influence of Textbooks on Teachers’ Decisions about Content and Methods of Teaching

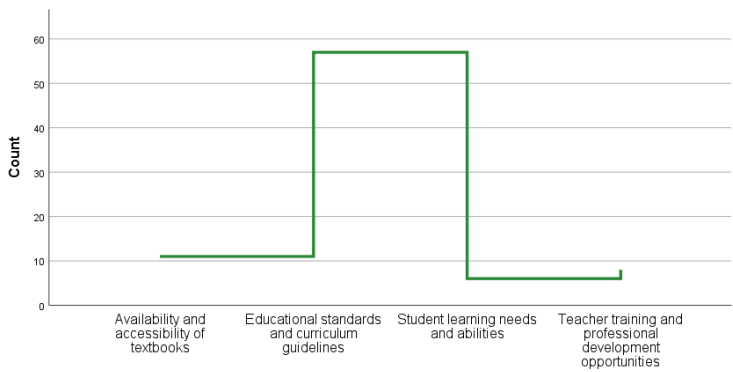


Figure 11: Factors Influencing Teachers’ Decisions

Figure 11 illustrates the factors that influence teachers’ decisions regarding textbook selection. Educational standards and curriculum guidelines emerged as the highest factor, with 69.5% of the teachers (57 out of the 82) who responded to the questionnaire. This indicates that most teachers rely on established guidelines and curriculum standards when selecting and using textbooks.

Availability and accessibility of textbooks were cited by 13.4% (11) of the teachers. Teacher training and professional development opportunities influenced 9.8% (8) of the respondents, while students’ learning needs and abilities were the least influential factor considered by 7.3% (6 teachers) of the 82 respondents.

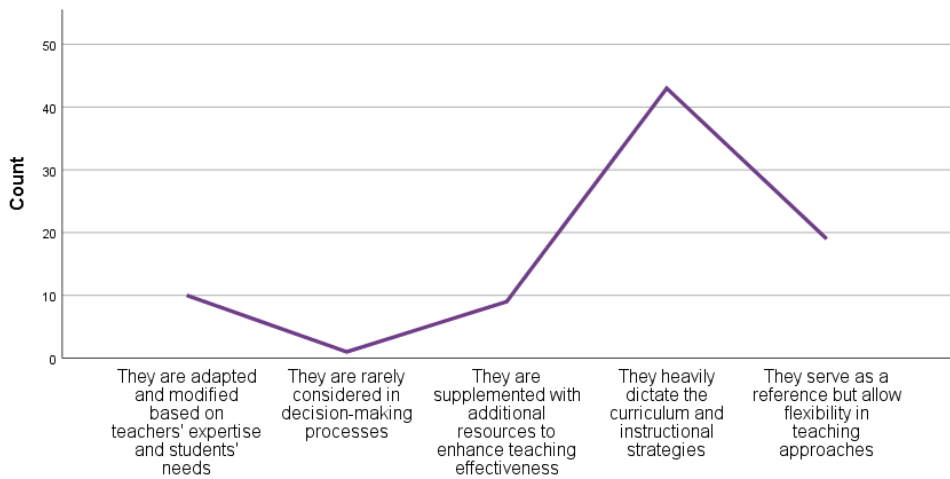


Figure 12: Influence of Textbooks

Teachers' perspectives on how textbook content influences their selection of subject matter and instructional methods are illustrated in Figure 12. About 43 teachers (52.4%) indicated that the content of textbooks is heavily dictated by curriculum and instructional strategies. 19 teachers (23.2%) also stated that textbooks serve as a reference but allow flexibility in teaching

approaches. 10 teachers (12.2%) stated that textbooks are adapted and modified based on teachers' expertise and students' needs, and 9 teachers (11%) indicated that textbooks are supplemented with additional resources to enhance teaching effectiveness. Only 1 teacher (1.2%) said textbooks are rarely considered in their decision-making process.

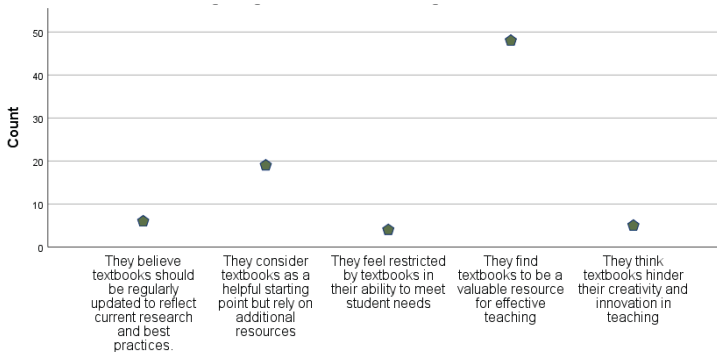


Figure 13: The perceptions of teachers regarding the effectiveness of textbooks in guiding content and teaching decisions

Teachers' perceptions of the usefulness and effectiveness of textbooks play a vital role in the delivery of content and pedagogical decisions. Figure 13 shows that 48 teachers (58.5%) regard textbooks as valuable resources for effective teaching. Others noted different perspectives: 19 teachers (23.2%) viewed textbooks as a helpful starting point but rely on additional resources; 6 teachers (7.3%) believe textbooks should be regularly updated to reflect current research and best practices; however, 5 teachers (6.1%) felt textbooks hinder their creativity and innovation in teaching; whereas 4 teachers

(4.9%) believe that textbooks restrict their work in meeting student needs.

Descriptive Analysis of Learners' Perceptions

To provide a more comprehensive evaluation of learners' perceptions, mean scores $\bar{X}$ and standard deviations (SD) were computed for the 5-point Likert scale items. This metric provides deeper insight into the central tendency and degree of consensus among the 612 respondents regarding the educational utility of textbooks.

Table 1. Mean and Standard Deviation Scores for Pupils' Perceptions of Textbook Utility

Perceptual Statement Variable	N	Mean ($\bar{X}$)	Std. Deviation (SD)	Verbal Interpretation
Understand Textbook Content Without a Teacher				
(I am able to understand the content without help from a teacher)	611	2.08	1.07	Disagree
Affects Performance				
(The use of textbooks affects my performance as a student)	611	3.87	0.64	Agree
Interesting and Engaging				
(I find the content in the textbooks interesting and engaging)	611	3.67	0.78	Agree
Addresses Learning Style				
(I think the textbook adequately addresses my learning style/preference)	612	3.25	1.02	Neutral / Moderate Agree

As observed in Table 1, a statistical evaluation of the mean values reveals clear structural dynamics in how basic school pupils interact with instructional texts. The item examining independent learning capacity, "I am able to understand the content without help from a teacher", generated the lowest mean consensus ($\bar{X} = 2.08$, $SD = 1.07$). This indicates a strong, localised disagreement among pupils, validating that textbooks in basic schools serve as scaffolding instruments rather than independent self-study manuals; thus, teacher mediation remains indispensable.

Conversely, the highest perceptual consensus was registered for the academic efficacy item, "The use of textbooks affects my performance as a student" ($\bar{X} = 3.87$, $SD = 0.64$). The low standard deviation here demonstrates a highly unified perception among the 612 respondents, indicating

that pupils are acutely aware of the direct relationship between textbook availability and their eventual learning outcomes. Furthermore, pupils positively evaluated the content presentation, noting it to be relatively "interesting and engaging" ($\bar{X} = 3.67$, $SD = 0.78$). However, a minor systemic variance emerged regarding pedagogical inclusivity; the statement "I think the textbook adequately addresses my learning style and preference" generated a more dispersed and neutral response alignment ($\bar{X} = 3.25$, $SD = 1.02$). This comparatively elevated standard deviation ($SD > 1.0$) highlights a critical instructional gap, showing that while textbooks are recognised as performance drivers, they do not uniformly satisfy the diverse differentiated learning profiles (visual, auditory, tactile) present across the pupil population.

DISCUSSIONS

Teaching and Learning Materials Used in Schools

The first research question sought to identify the teaching and learning materials commonly used in primary schools. The findings indicate that although teachers have access to a variety of instructional resources, traditional textbooks remain the dominant teaching and learning material. The overwhelming reliance on textbooks, compared with digital resources, online platforms, audio-visual materials, and hands-on manipulatives, demonstrates that textbooks continue to occupy a central position in Ghanaian Basic Education. This finding reinforces the long-standing argument that textbooks remain the most accessible and dependable instructional resource in many developing educational contexts (Smart *et al.*, 2020).

The predominance of textbooks observed in this study is consistent with the findings of Nwagbata *et al.* (2021), who reported that instructional materials significantly influence classroom teaching, but that textbooks remain the most frequently utilised resource because of their availability and alignment with curriculum objectives. Similarly, Okoji and Olubayo (2021) found that the effectiveness of teaching in primary schools is associated with the availability and use of instructional resources, particularly textbooks. The present study extends these observations by showing that even in an era characterised by rapid technological advancement, teachers continue to rely primarily on printed textbooks to organise instruction and support learner engagement.

The findings also support the proposition by Baleghizadeh and Amiri Shayesteh (2020) that textbooks continue to serve as relevant educational resources despite increasing technological innovations. Although digital learning tools are increasingly recognised as

important educational resources globally, their limited use in the sampled schools suggests that infrastructural, technological, and contextual factors continue to shape instructional practices. This observation aligns with Nguyen and Tuamsuk (2022) positing that the effectiveness of digital learning ecosystems depends on the availability of technological infrastructure, institutional readiness, and stakeholder support. The low use of digital resources observed in this study may therefore reflect challenges relating to technological access rather than resistance to innovation. An important finding emerging from this study is the high level of textbook availability among pupils. The majority of pupils reported having access to textbooks, with government provision accounting for a substantial proportion of textbook ownership. This finding supports the argument that government interventions remain critical in ensuring equitable access to learning materials. The result corroborates the work of Essuman and Osei-Poku (2015), who emphasised the importance of state-supported textbook provision in supporting curriculum implementation within Ghanaian schools.

However, despite the generally positive picture of textbook availability, a minority of pupils still lacked access to textbooks. This finding shows persistent inequalities in educational resource distribution. While the study agrees with Quadros-Flores *et al.*, (2015) that access to educational materials enhances learning opportunities, it concurrently suggests that equitable distribution remains an unresolved challenge. Consequently, the functionality of textbooks cannot be fully realised unless access is universal across all learners. From a constructivist perspective, the widespread availability of textbooks provides learners with opportunities to actively engage with content and construct knowledge through guided learning experiences.

However, constructivism also emphasises the use of diverse learning resources and experiences. The heavy dependence on textbooks observed in this study may therefore indicate a narrow resource base that could potentially limit opportunities for experiential and exploratory learning.

How Does the Availability of Textbooks Influence Learning Techniques in Primary Schools?

The second research question examined how textbooks influence pupils' learning techniques. The findings suggest that textbooks shape learning behaviours in multiple ways, through note-taking, summarising, memorisation, collaborative learning, self-directed learning, and critical thinking activities. Rather than functioning merely as repositories of information, textbooks appear to serve as cognitive tools that guide how learners interact with academic content. The prominence of note-taking and summarising as textbook-influenced learning strategies is significant.

This finding supports the work of Gerlach and Lüke (2024), who argued that textbooks provide structured scaffolding that assists learners in organising information and developing independent learning habits. The organisation of content into clearly defined topics, subtopics, activities, and exercises enables learners to identify key concepts and synthesise information effectively. Such processes are central to meaningful learning and knowledge construction.

The findings further support Mithans and Grmek (2020), who observed that well-designed textbooks stimulate learners' curiosity and encourage active engagement with learning materials. The positive perceptions expressed by pupils regarding the attractiveness and engagement level of textbook content suggest that the textbooks

used in these schools are generally effective in capturing learners' interest. This is important because learner engagement is widely recognised as a prerequisite for sustained academic achievement and meaningful learning outcomes. The study also revealed that many pupils believe textbooks positively influence their academic performance. This finding is consistent with Sievert *et al.*, (2021) who found that textbook quality contributes significantly to learners' academic achievement by providing structured opportunities for learning and practice. Similarly, Torkar and Kovač (2022) argued that textbooks shape learning experiences and influence educational outcomes through the content and activities they provide. The present study, therefore, adds further evidence that textbooks remain an important determinant of learning effectiveness in primary education.

However, a noteworthy finding is that a substantial proportion of pupils reported difficulty understanding textbook content without teacher assistance. This finding suggests that although textbooks support learning, they are not entirely self-sufficient instructional tools. The result aligns with the constructivist position advanced by Golder and Bengal (2018), which emphasises the role of teachers as facilitators who help learners interpret, contextualise, and apply knowledge.

Textbooks provide structure and information, but meaningful learning often requires guidance, questioning, and interaction facilitated by teachers. This finding partially contradicts perspectives that portray textbooks as sufficient resources for promoting independent learning. For example, while Gerlach and Lüke (2024) emphasised the role of textbooks in fostering self-directed inquiry, the current study suggests that such independence may be limited among primary school learners who are still developing

foundational literacy and comprehension skills.

The finding therefore indicates that textbook functionality is closely linked to teacher mediation, particularly in primary education contexts. This study further found that pupils generally perceived textbooks as accommodating their learning styles and preferences. This observation supports Haulle and Kabelege (2021), who argued that high-quality textbooks should cater to diverse learner needs through appropriate content presentation, illustrations, examples, and activities.

Nevertheless, the existence of a considerable proportion of neutral and negative responses indicates that textbooks may not adequately address all learner differences. This finding suggests a need for textbook developers to incorporate more varied pedagogical features that support diverse learning preferences. Overall, the findings support the constructivist framework underpinning this study. Textbooks appear to facilitate knowledge construction through structured activities, reflection, inquiry, and learner engagement. However, they function most effectively when complemented by teacher guidance and interaction rather than operating as standalone learning tools.

CONCLUSIONS

The key findings reveal that textbooks are important in defining how pupils understand academic content and their overall performance, with many learners depending on teacher support for understanding textbook material. This study underscores the importance of teacher involvement in the learning process and demonstrates that textbook content heavily influences instructional strategies. The research also highlights substantial textbook access disparities that are especially affecting

low-income pupils. This signals an urgent need for policies that ensure the equitable distribution of educational resources to support effective learning for all pupils. Future research may investigate the impact of resource distribution on learning outcomes.

Based on these findings, we recommend that educational policymakers must prioritise providing sufficient textbooks to all primary school pupils, ensuring equitable access.

This is important for students from disadvantaged backgrounds who may struggle to obtain the necessary educational materials.

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DISCLOSURE STATEMENT

The authors declare no potential conflict of interest.

DATA AVAILABILITY STATEMENT

Data for the study is available upon request from the authors.

ETHICAL CONSIDERATION

The study strictly adhered to the ethical guidelines outlined in the Helsinki Declaration (1964) and its subsequent updates. The study received approval from the Ethics Committee of Humanities and Social Science (HuSSRECC /234/28-10-2024) at Kwame Nkrumah University of Science and Technology. All data collected have been kept confidential, and the participants were fully informed about the study, including their right to withdraw from participating at any time. Each participant's consent was sought, as evidenced by the preamble of the survey, which stated: *“Participation in the survey is*

completely voluntary, and you can choose to exit the survey at any point. Your responses are anonymous. Required questions are indicated with an asterisk ()*.

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