

Information Technology Curriculum Availability and Content Alignment with Recommended Textbooks at the Middle Basic Education in Oyo State

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ABSTRACT: The effectiveness of Information Technology (IT) education at the Middle Basic level depends largely on curriculum availability and the alignment of curriculum content with recommended textbooks. This study examined the availability of the IT curriculum and the extent to which recommended textbooks align with prescribed curriculum content in middle basic schools in Oyo State, Nigeria. A descriptive survey research design was adopted. The population comprised Information Technology teachers and schools across Oyo State, with a sample of 120 teachers selected through appropriate sampling techniques. Data were collected using a structured questionnaire and curriculum-textbook alignment checklist. Descriptive statistics was used to analyze the data. Findings revealed that both the IT curriculum and textbooks are not grossly available in most schools, and there is strong alignment in lower classes while there is reduced alignment in upper classes. The study recommends periodic curriculum review, textbook evaluation, teacher capacity development, and improved monitoring mechanisms to enhance IT education delivery at the Middle Basic level.

KEYWORDS: Information Technology, Curriculum Availability, Textbook Alignment, Middle Basic Education, Oyo State

INTRODUCTION

The global shift toward digitalization has made Information Technology (IT) education a fundamental component of basic education systems. It has become central to educational transformation and economic competitiveness. The integration of IT into basic education ensures that learners acquire digital literacy, computational thinking skills, and technological competence required for participation in the knowledge economy (UNESCO, 2018). In Nigeria, the National Policy on Education emphasizes the integration of ICT into all levels of education to promote digital literacy and national development. It was introduced as a core subject at the basic education level through the National Policy on Education (Federal Republic of Nigeria [FRN], 2014). The Nigerian Educational Research and Development Council (NERDC) subsequently developed curriculum frameworks specifying learning objectives, content structure, and expected outcomes for Basic 4–6 levels (NERDC, 2013). At the middle basic education level (Basic 4–6), IT education aims to equip learners with foundational digital competencies necessary for further education and participation in the digital economy.

However, curriculum effectiveness depends not merely on its existence but also on its availability in schools and alignment with instructional materials. Curriculum-textbook alignment ensures coherence between intended learning outcomes and delivered instruction (Porter, 2002). It ensures coherence between what is intended (curriculum), what is taught (instruction), and what is learned (student outcomes). Curriculum availability refers to the presence and accessibility of officially approved curriculum documents within schools. Effective curriculum implementation requires that teachers have clear access to curriculum guides outlining objectives, content scope, and instructional strategies.

Alignment between curriculum and textbooks ensures that instructional materials reflect stated learning outcomes. Strong alignment enhances instructional coherence, improves student achievement, and reduces instructional inconsistencies. Misalignment, however, can result in teaching irrelevant or outdated content. Studies on ICT implementation in Nigerian schools indicate challenges such as inadequate infrastructure, insufficient teacher training, and outdated instructional materials. These factors can weaken curriculum implementation and reduce the impact of IT education. When textbooks reflect curriculum objectives, teaching becomes structured and measurable; when misaligned, learning outcomes are compromised.

In Oyo State, anecdotal reports suggest disparities in curriculum availability and textbook use across schools. Given the rapid evolution of technology, outdated textbooks may no longer reflect contemporary IT competencies. This study therefore investigates curriculum availability and the extent of alignment between IT curriculum content and recommended textbooks in middle basic education in Oyo State.

Therefore, this research seeks to attempt to answer the questions below:

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1. Is the IT curriculum available in middle basic schools in Oyo State?
2. To what extent are recommended IT textbooks available to teachers and pupils?
3. How well do recommended textbooks align with prescribed curriculum content?
4. What challenges affect curriculum availability and textbook alignment?

LITERATURE REVIEW

Curriculum Concepts and Availability

Curriculum is a complex concept which has been defined in various ways. It addresses questions such as what learners should learn and be able to do, why and how well. Schwabs (1983) defined curriculum as what is successfully conveyed to differing degrees to different students by committed teachers using appropriate materials and actions, of legitimated bodies of knowledge, skill, taste, and propensity to act and react, which are chosen for instruction after serious reflection and communal decision by representatives of those involved in the teaching of a specified group of students who are known to the decision makers. The objective of curriculum is to provide learners with the knowledge, skills, values and attitudes to be successful in their lives (UNESCO 2006). Curriculum is the instructional and the educative programme by which the pupils achieve their goals, ideals and aspirations of life. Curriculum in its broadest sense includes the complete school environment, involving all the course, activities, reading and associations furnished to the pupils in school. Curriculum availability refers to the accessibility and usability of official curriculum documents by teachers (Fullan, 2007). According to Oloruntegbe and Ikpe (2011), curriculum availability directly influences instructional fidelity and pupils' performance.

Curriculum-Textbook Alignment

The concept of alignment originates from curriculum theory, where the effects of teaching and learning are maximized when all elements of the educational system are coherent and mutually supporting (Tyler, 1949). Curriculum-textbook alignment refers to the degree of consistency between what is stipulated in a curriculum document and what is presented in textbooks used for instruction (Schmidt et al., 2005). It is an essential aspect of educational quality, because textbooks often serve as primary instructional tools, especially in systems where teacher capacity and resources are limited (Banerjee et al., 2007). The alignment between curriculum and textbooks influences classroom instruction, assessment practices, and ultimately student learning outcomes (Remillard, 2005).

In this context, curriculum documents describe educational goals, content standards, and expectations; textbooks translate these into teaching sequences, examples, activities, and exercises (Marsh & Willis, 2007). Alignment means that textbooks reflect the breadth, sequence, and depth of the curriculum and that they incorporate the cognitive demands emphasized by curriculum standards (Porter, 2002).

Alignment theory posits that learning outcomes improve when standards, curriculum, instruction, and assessment are coherent (Anderson, 2002). Porter (2002) developed alignment indices demonstrating that strong alignment correlates positively with student achievement.

Porter (2002) asserts that alignment is not merely about coverage of topics, but also about matching the cognitive level (e.g., recall, analysis, synthesis) specified by curriculum standards. Thus, a textbook may cover curriculum content yet still be misaligned if it fails to reflect the intended rigor and learning outcomes.

ICT Education in Nigeria

Information and Communication Technology (ICT) education refers to the integration of digital tools, computer systems, and technology-based instructional methods into teaching and learning. In Nigerian basic education, ICT is seen as a means to improve access to information, enhance learning experiences, and prepare learners with 21st-century skills (Oloyede et al., 2015). ICT in education is grounded in constructivist learning theories which posit that learners build knowledge through interaction with tools and environments (Jonassen, 1999). In the Nigerian context, scholars argue that when ICT is integrated into basic education, it promotes active learning, critical thinking, and problem-solving skills that traditional methods alone may not fully foster (Nwachukwu & Daniel, 2018).

Summary of Literature Gap

While previous studies have established the importance of curriculum in education and factors affecting their implementation, limited empirical attention has been given specifically to curriculum availability in schools and its alignment with the recommended textbooks at the Middle Basic Education level in Oyo State. Understanding the interplay between curriculum availability, textbook availability and its alignment is essential for informed curriculum evaluation, policy formation, professional development planning, and sustainable educational monitoring in Nigerian schools.

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METHODS

This study employed a descriptive survey design to investigate the availability of curriculum and recommended textbooks and their alignment at the Middle Basic Education in Oyo state. Instruments used for data collection were Curriculum and Textbook Availability Scale (CATAS), and Curriculum-Textbook Alignment Checklist (CTAC). The validity confirmed by experts and reliability tested through a pilot study, yielding a Cronbach's Alpha of 0.78 and 0.80 respectively. The multi stage sampling procedure was used involving the three (3) senatorial districts in Oyo state. These senatorial districts are clustered into 33 local governments, simple random sampling was used to select 5 local governments from each senatorial district, to have a total of fifteen (15) local governments. Purposive sampling was used to select eight (8) schools from each of the fifteen local governments. This gives a total of eight (8) schools from each local government, 40 schools from five local governments from each senatorial district and total of 120 primary schools from the three senatorial districts in Oyo state. Data analysis was carried out using descriptive statistics that involved frequency and percentage scores for answering the research questions.

RESULTS

Research Question One: Is the Information Technology curriculum available in middle basic schools in Oyo State?

Table 1: IT Curriculum Availability

	Frequency Available	Percentage Not Available
IT Curriculum	10 (8.33%)	110 (91.67%)

The table shows that only 10 schools (8.33%) reported that the Information Technology (IT) curriculum was available, whereas a vast majority of 110 schools (91.67%) indicated that the IT curriculum was not available. This finding demonstrates an extreme deficiency in curriculum availability across middle basic schools in Oyo State.

DISCUSSION OF THE FINDINGS:

The availability rate of is critically low and suggests that most schools operate without direct access to the officially approved IT curriculum document. According to the Federal Ministry of Education FRN (2014), curriculum documents provide the official framework for implementing national education policies. The low curriculum availability contrasts with federal education policy mandates (FRN, 2014). Without access to the prescribed curriculum, teachers are likely to rely on personal discretion, outdated materials, or fragmented content delivery. Similarly, the Nigerian Educational Research and Development Council (NERDC), which develops and revises national curricula, emphasizes that curriculum dissemination to schools is essential for ensuring uniformity and quality assurance in teaching and learning processes. The absence of the IT curriculum in 91.67% of schools implies that teachers may not follow standardized learning outcomes and there may be variations in topics taught across schools. This will also lead to deficient evaluation and curriculum coverage which is contrast to the assertion of Fullan (2007) that effective curriculum implementation depends on availability, teacher understanding, and monitoring. When curriculum documents are inaccessible, implementation becomes informal and inconsistent. This finding is consistent with Okebukola (2015) which reports that curriculum reforms often fail at the implementation stage due to poor dissemination and inadequate monitoring.

Research by Ornstein & Hunkins, (2018). shows that curriculum clarity enhances teaching effectiveness and student learning outcomes When teachers lack access to official curriculum documents, implementation becomes dependent on individual interpretation, which may lead to content gaps or unnecessary repetition. Globally, ICT integration in education is supported by frameworks such as those promoted by UNESCO, which emphasize structured curriculum frameworks for digital competence development. Information Technology education at the middle basic level is critical for developing foundational digital literacy skills. Without access to the IT curriculum, learners may not acquire standardized digital competencies and schools may fail to align with national ICT education goals.

In addition, the Universal Basic Education Commission stresses that curriculum materials are mandatory components of quality assurance in basic education. The reported 91.67% non-availability indicates a serious policy-practice gap.

Research Question two: To what extent are recommended IT textbooks available to teachers and pupils?

Table 2: IT Textbooks Availability

	Frequency (Percentage) Available	Frequency (Percentage) Not Available
IT Text book	13 (10.83%)	107 (89.17%)

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The table indicates that only 13 schools (10.83%) reported that Information Technology (IT) textbooks were available, while a significant majority of 107 schools (89.17%) reported that IT textbooks were not available. This finding reveals a critical shortage of IT instructional materials at the middle basic education level in Oyo State. It means the teaching of information technology is based on individual teachers' idea or opinion with no reference to any text book

DISCUSSION OF FINDINGS:

The extremely low availability rate suggests that most schools lack essential instructional resources required for effective teaching and learning of Information Technology. Textbooks serve as structured guides that translate curriculum objectives into classroom practice. Their absence undermines curriculum implementation, instructional consistency, and learners' academic achievement.

According to Universal Basic Education Commission (UBEC), the provision of adequate instructional materials is a core requirement for achieving the goals of Basic Education in Nigeria. Similarly, Federal Ministry of Education emphasizes that textbook availability is fundamental to curriculum delivery under the National Policy on Education. However, textbook inadequacy suggests implementation gaps consistent with Aduwa-Ogiegbaen & Iyamu (2005).

The finding aligns with previous studies that report inadequate instructional materials in Nigerian public schools. For instance, studies have shown that shortages of textbooks significantly affect teaching effectiveness and student performance (Ogunniyi, 2015; Ajayi & Ayodele, 2019). When textbooks are unavailable, teachers often rely solely on personal notes or improvised materials, which may not adequately reflect curriculum standards or ensure uniformity across schools. UNESCO (2018) stresses that access to quality learning materials is critical for developing ICT competencies in learners.

The Middle Basic Education curriculum in Nigeria integrates Information Technology as part of digital literacy development in alignment with global educational trends such as those advocated by UNESCO. With a greater percentage of schools lacking IT textbooks curriculum objectives may not be fully implemented, learners may experience fragmented knowledge acquisition, teachers may struggle with content alignment and sequencing, and assessment practices may lack standardization. Research carried out by Owoye & Yara, (2011) shows a strong correlation between textbook availability and academic achievement. Textbooks provide structured content progression and offer practice exercises and reinforcement activities. It supports and upgrades independent learning as it promotes curriculum alignment. The absence of textbooks in IT education may therefore contribute to poor digital literacy outcomes among middle basic learners in Oyo State. The shortage also undermines Nigeria's broader digital transformation agenda, particularly in preparing students with foundational ICT skills necessary for the 21st-century workforce.

Research Question three: How well do recommended textbooks align with prescribed curriculum content?

Table 3: Curriculum content and Textbook alignment

SN	Class	Selected Topics	Textbook aligned	Not Aligned
1	Basic 1	Identification of parts of computer and uses	12(92.31%)	1(7.7%)
2	Basic 2	Features of Computer parts	13(100%)	0
3	Basic 3	Computer hardware (Input, Output, Storage and System Unit devices)	11(84.61%)	2(15.4%)
4	Basic 4	Uses of Computer hardware and Software Data and Information and Information Technology gadgets	13(100%)	0
5	Basic 5 and 6	Care and protection of computer devices Internet (Definition, Importance and Abuses) Word processing	9(69.23%)	4(30.77%)

The table presents the alignment between selected Information Technology (IT) curriculum topics and the recommended textbooks across Basic 1–6. Overall, the data indicate a generally high level of alignment, although variations exist across classes, particularly in Basic 5 and 6. In Basic 1, the Identification of Parts of Computer and Uses has (92.31%) alignment with the curriculum, while Features of Computer in basic 2 has 100% alignment. Computer hardware in Basic 3 has 84.6% while Basic 4 (Uses of Computer Hardware and Software; Data and Information; IT Gadgets) aligned with (100%). The least value is from Basic 5 and 6 with 69.23% aligned and 30.77% not aligned. The high alignment (92.31%) of Identification of computer parts in Basic 1 suggests that most textbooks adequately cover foundational concepts such as identification of computer parts and their uses.

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DISCUSSION OF FINDINGS:

The findings suggest strong alignment in lower classes (Basic 1–4), ranging from 84.61% to 100%. It also shows reduced alignment in upper classes (Basic 5–6), where more advanced and dynamic ICT topics are introduced. This pattern aligns with curriculum implementation theory by Ornstein & Hunkins (2018) which posits that content complexity and rapid subject evolution increase the likelihood of instructional inconsistencies. The 100% alignment at Basic 2 demonstrates excellent coherence between textbooks and curriculum expectations. This suggests that publishers and curriculum developers maintain close conformity at lower basic levels. According to the Nigerian Educational Research and Development Council NERDC (2013), lower basic curriculum content is structured to ensure uniform foundational ICT knowledge nationwide. Although alignment remains high (84.61%), a slight decline is observed compared to Basic 1 and 2. As content becomes more technical (classification of devices into input, output, storage,), discrepancies may emerge due to differences in textbook depth, sequencing, or terminology. Curriculum implementation research by Fullan (2007) shows that misalignment often increases as subject complexity grows. The consistency at lower levels is a strong reflection of curriculum-textbook consistency at the introductory level as supported by Ornstein & Hunkins, (2018) that foundational digital literacy concepts are typically standardized and less complex, making alignment easier to achieve.

High alignment at foundational levels indicates effective collaboration between curriculum developers and publishers. However, the noticeable misalignment at Basic 5 and 6 suggests a need for periodic textbook review and revision, stronger monitoring by SUBEB and UBEC, continuous professional development for teachers and integration of updated digital literacy standards. This level shows the lowest alignment rate and the highest misalignment rate. The decline may be attributed to rapid evolution of internet-related content, variations in depth of word processing instruction, and differences in emphasis on cyber safety and internet abuse. Upper basic topics tend to require practical engagement and updated content. When textbooks are outdated or simplified, alignment gaps increase. According to Federal Ministry of Education [FRN] (2014), effective ICT curriculum implementation requires regularly updated instructional materials to reflect technological changes

CONCLUSION

The data clearly reveals that Information Technology curriculum documents are largely unavailable in middle basic schools in Oyo State, with only 8.33% of schools reporting availability. This represents a major structural barrier to effective curriculum implementation and digital literacy development. The data clearly demonstrates that Information Technology textbooks are largely unavailable in middle basic schools in Oyo State, with nearly nine out of ten schools lacking them. This represents a major barrier to effective curriculum implementation, instructional quality, and student achievement in IT education. The alignment between curriculum content and recommended textbooks is inconsistent. The analysis reveals that IT textbooks in Oyo State generally align well with the curriculum at lower basic levels, but alignment weakens at the upper basic level. While foundational digital literacy topics are well represented, more advanced areas such as internet usage and word processing require improved textbook-curriculum coherence. Effective IT education requires stronger monitoring, updated materials, and improved teacher training to ensure curriculum objectives are fully realized.

RECOMMENDATIONS

Based on the findings of the study on availability of IT Curriculum and textbooks with their alignment at the Middle Basic Education in Oyo state, the following recommendations are made:

- Periodic review and updating of IT curriculum and textbooks by setting up evaluation committees at state level.
- Government provision of adequate and current textbooks to schools for both teachers and pupils.
- Regular teacher training on curriculum implementation.
- Strengthened supervision and quality assurance mechanisms.
- Monitoring by Oyo State SUBEB quality assurance units.
- School administrators should conduct annual alignment audits

With these measures, the IT curriculum can better serve learners and prepare them for future academic and professional pursuits in an increasingly digital world

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