EDUCATIONAL INPUTS AND INTERNAL EFFICIENCY IN PUBLIC SENIOR SECONDARY SCHOOLS, KWARA STATE, NIGERIA

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Abstract
Despite reforms and increased investment, internal inefficiencies, such as high dropout rates, inadequate resources, and sub-optimal learning environments, continue to challenge the effectiveness of public senior secondary education in many states, including Kwara. These inefficiencies not only limit students' progression to higher education but also undermine the return on investment in education. This study investigates the relationship between educational inputs, including human, physical, and material resources and the internal efficiency of public senior secondary schools in Kwara State. A correlational descriptive research design was adopted, targeting 133 schools in Kwara Central, from which 98 were randomly selected. Data were collected using the Educational Inputs Checklist (EIC) and Internal Efficiency Inventory (IEI), and descriptive analysis (ratios and percentages) and linear regression were used to analyse the data. Findings revealed that the student-teacher ratio ranged between 10:1 and 14:1, far below the national benchmark of 1:40, yet inefficiencies persisted due to poor deployment policies. Material resources were critically inadequate, with 74.49% of public senior secondary schools falling in the "inadequacy" category. Biology and Civic Education were especially affected, with textbook ratios as low as 10:1. The internal efficiency rate, measured by graduation, was 60.5%, while the wastage rate was 39.5%. Also, Multiple regression analysis showed a significant combined influence of the educational inputs on internal efficiency, $F(3, 92) = 7.83$, $p < .005$. Recommendations include revising teacher deployment strategies, improving material supply, and implementing targeted student retention interventions. A balanced, needs-based allocation model is essential to enhance internal efficiency and reduce educational wastage in Kwara State.

Keywords: *Educational Inputs, resources, wastage, internal efficiency, public secondary schools*

Introduction

In educational systems, efficiency and inefficiency are crucial factors in determining the quality and sustainability of outcomes. Senior secondary education in Nigeria has transitioned from the 6-3-3-4 to the 9-3-4 system with the introduction of the Universal Basic Education (UBE) Act of 2004. It serves as a vital bridge between basic education and higher education. The broad aim of the 9-3-4 system is to reduce the high dropout rate, enhance educational outcomes, and better equip students for the workforce or tertiary education. Unfortunately, despite these reforms, significant challenges remain unresolved. The Centre for Global Development (2022) reported that Nigeria has the highest dropout and out-of-school rates on the continent, with 16.9% of children not attending school. Similarly, Rahama Farah, head of the UNICEF office in Kano State, emphasised the gravity of the situation, citing that approximately 18.5 million children are out of school in Nigeria, 4.9 million of whom are secondary school students (Centre for Global Development, 2022). Furthermore, the UNICEF Education Fact Sheet (2023) revealed that Nigeria has a repetition rate of 16% (1,676,100

students) and a dropout rate of 27% (2,998,200 students). These statistics reflect the persistent internal inefficiencies within Nigeria's educational system, particularly at the secondary level.

Internal efficiency reflects the relationship between inputs and outputs within a specified time frame in the educational system, and it is often measured by the judicious use of resources and the ability to retain students across various levels of the system. It is achieved when attrition within a cohort is minimal, and the rate of successful completions is high, highlighting that a balanced input-output ratio leads to sustainable resource use and maximises educational outcomes. Educational inputs include students, staff, funding, and other resources, while the outputs are the graduates. Ngari (2020) defined internal efficiency as the ratio of inputs to outputs in a system, which is achieved when a cohort reaches maximum enrollment and produces the highest possible number of graduates by the end of the designated educational cycle. An internally efficient educational system ensures that graduates are trained without wasting any student-years, with minimal dropouts and repeaters, all of which are central to achieving a sustainable education model (UNESCO, 2017; Abdulkareem & Fasasi, 2012). In contrast, an inefficient system leads to high costs, including the financial burden of retaining students who drop out or repeat grades, as well as the strain on educational resources that could have been used more effectively. Internal efficiency in schools can then be measured using promotion, repetition, dropout rates, and the input-output ratio. However, the longer students remain in the system due to repetition, the higher the financial and operational cost implications for schools and the government.

The input-output ratio is a key measure of internal efficiency in education, as it assesses the relationship between the resources invested (inputs) and the educational outcomes achieved (outputs). Inputs typically include students, teaching staff, facilities, instructional materials, and funding, while outputs refer to student achievements, particularly the number of graduates. For instance, if a high percentage of students in a cohort enrolled in a school successfully graduate, it indicates effective use of resources. Conversely, high wastage rates suggest inefficiency, as more resources are consumed without proportionate results. UNESCO's Global Education Monitoring Report (2022) posited that an efficient input-output ratio is crucial for addressing rising demands on educational systems amid growing student populations and limited resources. Undoubtedly, educational systems with high internal efficiency will utilise resources to achieve student success with minimal wastage resulting from repetition and dropout.

The Nigeria Demographic and Health Survey (NDHS) (2018) reported that in Kwara State, the secondary school attendance rate was 55%, reflecting challenges with retention and progression through educational cycles. This aligns with broader issues in Nigeria, where educational inefficiencies are marked by disparities in resource allocation and socioeconomic factors that contribute to wastage within the system. Also, the data shows that internal inefficiencies in the state's secondary education sector are influenced by high dropout and repetition rates, as well as limited resources, including inadequate teaching staff and facilities. In line with this, the National Bureau of Statistics (NBS) surveyed in 2022 and found that over 40% of secondary schools in Nigeria lacked sufficient classrooms, and 70% reported a shortage of textbooks and learning materials (National Bureau of Statistics, 2022). This makes it safe to conclude that many secondary schools lack basic physical and material resources, such as classrooms, textbooks, libraries, and laboratories, which are essential for effective teaching and learning. However, these inefficiencies not only undermine the quality of education but also impose a financial burden on the education system. Educational inputs that could have been allocated to improving the quality of education are instead diverted to managing the continued enrollment of students who do not advance.

Educational inputs in public secondary schools include physical resources (classrooms, libraries, and laboratories), material resources (textbooks and teaching aids), and human resources (teaching and non-teaching staff) required to ensure effective teaching and learning. In the past, the government has made concerted efforts to provide educational resources. The state government is responsible for the recruitment of teachers, the admission of students, the construction of schools, and the furnishing of public schools. The National Policy on Education recognised the importance of educational resources. It is therefore postulated that the government shall provide adequate infrastructure that will enhance the delivery of basic education in Nigeria (FGN, 2014). It is within the scope of the state government in public schools to ensure that educational resources are available for practical use to achieve educational goals. When educational resources are made available, they are accessible to teachers and students for practical use in achieving secondary education goals.

Despite significant allocations to the education sector, ₦608 billion in 2020, ₦771billion in 2021, and ₦878 billion in 2022 (Budget Office of the Federation), the inefficiency of the Nigerian secondary school system is evident in various ways, including high rates of students needing to re-sit examinations and the prevalence of dropouts. Results from the West African Examinations Council (WAEC) and the National Examinations Council (NECO) consistently highlight high failure rates among secondary school students. For instance, in the 2020 WAEC results, only 39.82% of students obtained five credits, including mathematics and English, which are prerequisites for university admission. This indicates that most students either need to retake the exams or face immediate disqualification from advancing to higher education. This highlights systemic issues within the educational framework in which students are being trained.

To address this, the present study sought to assess inefficiencies in Kwara State by examining educational inputs and their relationship with internal efficiency in public senior secondary schools in the state.

Statement of the Problem

In Nigeria, senior secondary education is crucial for preparing students for tertiary institutions. However, according to the UNICEF Nigeria Education Fact Sheet (2023), the percentage of out-of-school students in Kwara State's senior secondary system remains high, with 37% of secondary school students not attending school and a 17% repetition rate. In 2023, government expenditure on education reportedly increased to 26% of the total state budget, up from 10% in earlier years (Nigeria Education News, 2025), reflecting a significant investment in the sector. Concurrently, the number of public senior secondary schools rose from 377 in 2018-2019 (Kwara State Ministry of Education, 2019) to 412 in 2022- 2023 (Kwara State Ministry of Education and Human Capital Development, 2023), representing an expansion aimed at accommodating the growing number of junior secondary students transitioning to senior secondary schools. Studies by Omosidi, Atolagbe, and Ajao (2021) also reported that the teacher-to-student ratio in sampled public secondary schools in Kwara State was 1:14, while a state-wide baseline mapping of basic education teachers indicated an average ratio of 31:1 (Kwara State Ministry of Finance, 2025). These ratios deviate significantly from the national standard, highlighting persistent challenges in teacher distribution and educational resource allocation across the state. Despite this seemingly favourable ratio, inefficiency persists. The Kwara State Census Report noted that, in 2023, while there were 322 schools serving a student population of 86,564, 52% of these schools lacked sufficient seating, and 40% of the available physical resources required repairs. These inefficiencies are reflected not only in the rate of repetition and dropout but also in poor student performance in external examinations. This recurring inefficiency not only wastes valuable educational resources but also hinders students' academic and professional development, ultimately threatening the overall quality of education in Kwara State. It is based on

these problems that this study examined the relationship between educational inputs and internal efficiency in public senior secondary schools in Kwara State.

Purpose of the Study

The primary purpose of this study was to examine the relationship between educational inputs and internal efficiency in public senior secondary schools in Kwara State. Specifically, the study sought to:

a. determine the trend of student-teacher ratio in public senior secondary schools in Kwara State between 2022/2023 and 2024/2025 academic sessions;
b. Investigate the adequacy of the level of the material resources available in public senior secondary schools in Kwara State.
c. determine the extent of internal efficiency through the graduation rates of the 2022/2023 student cohort in public senior secondary schools in Kwara State

Research Questions

The following research questions were raised to guide the conduct of this study:

1. What is the trend of the student-teacher ratio in public senior secondary schools in Kwara State between the 2022/2023 and 2024/2025 academic sessions?
2. What is the adequacy level of available material resources in public senior secondary schools in Kwara State?
3. To what extent are public senior secondary schools in Kwara state internally efficient, following the trends of enrollment and graduation rates of the 2022/2023 student cohort?

Research Hypothesis

Ho: There is no significant relationship between educational inputs and internal efficiency in public senior secondary schools in Kwara State

Methodology

This study adopted a descriptive, correlational research design to examine the relationship between educational inputs and internal efficiency in public secondary schools in Kwara State. The targeted population for this study comprised all 133 public senior secondary schools in Kwara Central Senatorial District, which is distributed across the four local governments: Asa, Ilorin East, Ilorin South, and Ilorin West, as documented in the 2022/2023 Annual School Census Report by the Kwara State Ministry of Education and Human Capital Development. Using the Research Advisor Sample Size Table (2006), the required sample size for this population was 98 schools, selected systematically. Two self-designed instruments, tagged “Educational Inputs Checklist (EIC)” and Internal Efficiency Inventory (IEI), were used for data collection for the study. The EIC instrument consists of three sections, A, B, and C, on the levels of human resources, physical resources, and material resources. Sections A to C are designed to evaluate the number of available resources, the required number, and the adequacy level of these resources. In contrast, IEI was designed to collect data on student enrolment, promotion trends to determine the percentage of students who made it to the graduating class, and to calculate the extent of internal efficiency using the input-output ratio formula. Research questions one to three in the study were analysed descriptively, while regression analysis was used to test the raised hypothesis. Questions related to educational input were addressed by assessing the adequacy of resources using a composite formula to determine the sufficiency of each input category. At the same time, a question regarding internal efficiency was answered using the graduation rate and the input-output ratio for students.

Result of Findings

Research Question 1: What is the trend of the student-teacher ratio in public senior secondary schools in Kwara State between the 2022/2023 and 2024/2025 academic sessions?

Table 1: Analysis of Human Resources Adequacy in Senior Secondary Schools in Kwara State

Academic Session	No of Schools	Teachers (T)	Students (S)	Student-teacher Ratio	Adequacy Percentage
2022/2023	98	4390	48500	11:1	362%
2023/2024	98	3473	48915	14:1	284%
2024/2025	98	3541	36581	10:1	386%

Ideal STR 1:40 Key: Grossly Inadequate (0-33%), Moderately Adequate (34-66%), Highly Adequate (67-100%), and Excess (above 100%)

The trend analysis of the student-teacher ratio (STR) in public senior secondary schools in Kwara State from the 2022/2023 to 2024/2025 academic sessions reveals a consistent overstaffing of teachers when compared to the ideal STR of 40:1. In the 2022/2023 session, the teacher population was 4,390 for 48,500 students, resulting in an STR of 11:1 and an adequacy percentage of 362%. This indicates that the available teachers were over three times the required number. Similarly, in the 2023/2024 session, the number of teachers decreased to 3,473, while the student population slightly increased to 48,915, resulting in an STR of 14:1 and an adequacy percentage of 284%. Despite this slight adjustment, the adequacy level remained excessively high, pointing to continued overstaffing. By the 2024/2025 session, the teacher count was 3,541, while the student population had sharply dropped to 36,581. This further reduced the STR to 10:1 and increased the adequacy percentage to 386%, signifying that the teacher availability was four times the ideal requirement.

Overall, the analysis shows that, across the three academic years, the teacher supply in public senior secondary schools in Kwara State far exceeds the required level based on the ideal STR. Instead of an STR of close to 40:1, the state operates at 10:1 to 14:1, reflecting an alarming surplus of teachers. This over-staffing not only implies a potential waste of resources but also raises concerns about the efficiency of teacher deployment and education planning in Kwara State.

Research Question 2: What is the level of adequacy of available material resources in public senior secondary schools in Kwara State?

Table 2: Analysis of Material Resources Adequacy in Senior Secondary Schools in Kwara State

LGA	**Students**	**Mathematics Textbooks**			**English Textbooks**			**Biology Textbooks**			**Civic-Education Textbooks**		
		A	**S: TB**	**%**	**A**	**S: TB**	**%**	**A**	**S: TB**	**%**	**A**	**S: TB**	**%**
Asa	2,896	898	3:1	33%	916	3:1	33%	650	5:1	20%	679	4:1	25%
Il. West	7,953	3580	2:1	50%	3652	2:1	50%	965	8:1	12.5%	1309	6:1	16.7%
Il. South	9,390	3362	3:1	33%	3397	3:1	33%	2030	5:1	20%	2301	4:1	25%

Il. East	16,342	6993	2:1	50 %	67 94	2: 1	50%	1606	10:1	10%	1982	8:1	12.5%
	36,581	1483 3		41 .5 %			41.5 %			15.6 %			19.8%

Ideal S:TB= 1:1 ***Key:*** *Grossly Inadequate (0-33%), Moderately Adequate (34-66%), Highly Adequate (67-100%), and Excess (above 100%)*

The analysis of material resource adequacy in public senior secondary schools across Kwara State reveals a concerning level of inadequacy, especially in textbook availability across core subjects. According to the data, the student-to-textbook ratio indicates that most schools operate at an inadequate level, particularly in Biology and Civic Education, where ratios of 10:1 and 8:1 were recorded in Ilorin East and Ilorin West, respectively. Textbook adequacy levels are as low as 10% to 25%, which fall within the grossly inadequate range of 0–33% as defined by the standard adequacy scale. Even in subjects like Mathematics and English, only Ilorin West and Ilorin East recorded moderate adequacy levels at 50%. At the same time, other LGAs, such as Asa and Ilorin South, remained within the low bracket. This inadequacy is further affirmed by the broader school-level analysis, in which 74.49% of the 98 schools surveyed were categorised as having gross inadequacy, only 5.10% achieved a high level of adequacy, and 4.08% had excess resource input.

Table 3: School-by-School Analysis of Material Resources Adequacy in Public Senior Secondary Schools in Kwara State

Adequacy Level	No of schools	Percentage
Grossly Inadequate	73	74.49%
Moderate Adequate	16	16.33%
Highly Adequate	5	5.10%
Excess	4	4.08%
Total	98	100%

Key: Grossly Inadequate (0-33%), Moderately Adequate (34-66%), Highly Adequate (67-100%), and Excess (above 100%)

The school-level analysis above shows that public senior secondary schools across Kwara State have a disturbing trend of inadequate textbooks for core subjects. A significant majority of the schools, 73 out of 98 (74.49%), fall within the grossly inadequate level, indicating that these schools have less than 33% of the required material resources. This reflects a severe shortage of essential textbooks in core subjects like Mathematics, English, Biology, and Civic Education. Only 16 schools (16.33%) were rated as having a moderate level of adequacy, meaning they possess between 34% and 66% of the required materials. Furthermore, a mere five schools (5.10%) attained a high adequacy level, with 67-100% of the needed materials available. Alarmingly, just four schools (4.08%) reported having excess material resources, surpassing the required standard. The overwhelming majority of schools in the grossly inadequate bracket signals a critical shortage of textbooks, especially in Biology and Civic education, which directly hampers teaching and learning and could result in inefficiencies in the system.

Research Question 3: What is the extent of internal efficiency in public senior secondary schools in Kwara state following the trends of enrollment and graduation rates for the 2022 cohort?

Table 4: Analysis of Internal Efficiency in Public Senior Secondary Schools in Kwara State

2022 STUDENT COHORT	2022/2023 SS1 Enrollment	2023/2024 SS2 Enrollment	2024/2025 SS3 Enrollment	Input-output Ratio	Completion Rate	Wastage (%)	Remark
				0.606	60.6%	39.4%	Moderate

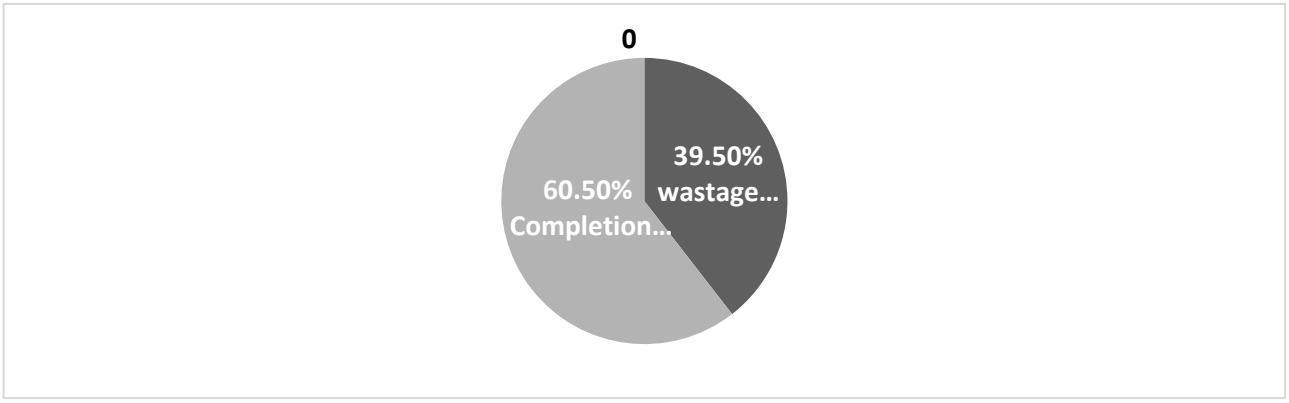

Figure 1: *Analysis of Internal Efficiency in Public Senior Secondary Schools in Kwara State for the 2022 Student Cohort.*

The analysis of the internal efficiency of public senior secondary schools in Kwara State, as presented in the table, reveals that out of 17,546 students enrolled in SS1 during the 2022/2023 academic session, 15,044 got promoted to SS2 during the 2023/2024 academic session. Only 10,627 students were promoted to SS3 during the 2024/2025 session. This indicates that a total of 6,919 students either dropped out or repeated classes, resulting in a dropout/repetition rate of 39.5%. Consequently, the system recorded a completion rate of 60.5%, which is classified as moderately efficient based on the key provided. The level of wastage highlights significant inefficiency, suggesting that nearly 40% of students could not complete the cycle within the expected period. This moderate internal efficiency may be attributed to several factors, such as inadequate resources, poor learning environments, economic challenges, and low student motivation, all of which could contribute to high repetition or dropout rates. Addressing these underlying factors is essential to improving completion rates and reducing wastage in the school system.

Ho: There is no significant relationship between the adequacy level of educational inputs and internal efficiency in public senior secondary schools in Kwara State.

Table 5: Coefficient of the relationship between Educational Inputs and Internal Efficiency

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	.463	1.002		.462	.645
Physical Resources	-.239	.086	-.268	-2.769	.007
Human Resources	.984	.257	.366	3.831	.000
Material Resources	-.208	.110	-.179	-1.896	.061

a. Dependent Variable: Internal Efficiency

The regression coefficients table provides insight into how each predictor (material, human, and physical resources) affects internal efficiency. Physical resources have a significant adverse effect on internal efficiency, with an unstandardized coefficient of -0.239 ($p = .007$), indicating that, holding all else constant, a one-unit increase in physical resources is associated with a 0.239-unit decrease in internal efficiency. The corresponding standardised beta of -0.268 confirms the inverse relationship. This adverse effect might reflect issues such as inefficient utilisation or an overabundance of physical infrastructure that does not translate into better operational efficiency. Human resources, however, show a strong, statistically significant positive effect on internal efficiency, with an unstandardized coefficient of 0.984 ($p < .005$) and a standardised beta of 0.366. This finding is consistent with the context of public senior secondary schools in Kwara State, where human resources are in excess. An abundance of qualified teachers and administrative staff appears to contribute substantially to improved internal efficiency, reinforcing the critical role of human capital in enhancing educational efficiency.

The regression analysis revealed that material resources hurt internal efficiency, with an unstandardized coefficient of -0.208. This suggests that as material resources increase, internal efficiency tends to decrease when other factors are held constant. However, this relationship is not statistically significant at the 5% significance level ($t = -1.896$, $p = .061$). Therefore, there is no sufficient evidence to conclude that material resources significantly affect internal efficiency in this model, which means that material resources are not a primary driver of internal efficiency, so improving them while still important may not significantly impact efficiency on its own. In summary, the results are consistent with the known resource conditions in public senior secondary schools in Kwara State. The surplus in human resources positively affects internal efficiency, whereas material resources do not contribute to efficiency independently. Additionally, an excess of physical resources appears to be counterproductive, possibly due to underutilization or inefficient management. This comprehensive view reinforces the need for balanced resource allocation to maximise internal efficiency in public senior secondary schools.

Discussion of Findings

Analysis of the student-teacher ratio (Table 1) over the three academic sessions indicates a substantial teacher surplus relative to the student population. The recommended student-teacher ratio of 1:40 is substantially exceeded, with observed ratios ranging from 10:1 to 14:1, and adequacy percentages exceeding 300%, reaching nearly 400% in 2024/2025. This trend suggests that students have a disproportionately high number of teachers, which may be partly due to the urban concentration of teaching staff, as many teachers prefer postings in urban areas for proximity to family or social amenities. Oftentimes, most teaching staff in rural areas request to move to urban schools where their spouses or families reside. While an abundance of qualified teachers may benefit instructional quality, such disproportionate staffing likely reflects poor resource planning and allocation, leading to potential inefficiencies and unnecessary expenditure. To enhance internal efficiency, staffing is expected to align with actual enrollment, classroom needs, subject demand, and curriculum structure. Omosidi et al. (2021) suggested that while public schools may have a surplus of human resources, management inefficiencies can limit the potential benefits. This indicates that strategic deployment and review of teacher distribution are essential to maximise efficiency and ensure effective resource utilisation.

The findings from this study revealed a critical shortage in material resources across public secondary schools in Kwara State. Table 5 shows that 74.49% of schools fall into the inadequacy category, indicating that most schools have fewer than 33% of the required textbooks for essential subjects such as Mathematics, English, Biology, and Civic Education. This alarming shortage significantly undermines effective teaching and learning, thereby affecting internal efficiency in the school system.

These results are consistent with the study by Olatunji (2015), which emphasised that the underutilization and inadequacy of material resources in Kwara State schools have contributed to poor instructional quality and weakened student performance. Similarly, Fasasi (2017) found that insufficient teaching materials severely constrain internal efficiency in public secondary schools, and that private schools tend to perform better due to improved resourcing. Atolagbe, Ojo, and Omosidi (2021) also reported that the availability of adequate learning materials enhances educational efficiency, reinforcing the centrality of learning resources to academic outcomes. Similarly, Babatunde, Sagaya, Agbesanya, and Ajadi (2025) found that inadequate learning resources in secondary schools significantly negatively affect students' academic achievement. However, Aliyu and Adeoye (2014) cautioned that the mere availability of instructional resources does not automatically enhance learning outcomes. Instead, effective utilisation, teacher motivation, and administrative competence remain vital mediating factors. This suggests that while addressing material resource shortages is crucial, attention must also be given to the strategic deployment and effective use of such resources. Taken together, the findings from this study and existing literature underscore that improving internal efficiency in Kwara State schools will require not only increased provision of learning materials but also deliberate efforts to ensure their effective utilisation in classroom instruction.

The internal efficiency of the system, as measured by graduation/completion rates (Table 6), indicates that only 60.5% of students who enrolled in SS1 during the 2022/2023 session were promoted to SS3 by 2024/2025. The dropout or repetition rate stands at 39.5%, suggesting a significant level of inefficiency within the system. The moderate efficiency observed may be attributed to multiple factors, including inadequate learning materials, poor infrastructural conditions, economic challenges, and low student motivation, all of which undermine student retention and success. These findings are supported by Fasasi (2017), who reported a similar trend in public secondary schools across Kwara State. His study found that low internal efficiency, particularly in public schools, stemmed from insufficient learning materials and weak administrative supervision, leading to high dropout and repetition rates. Fasasi emphasised that the availability and proper use of resources were significant predictors of student completion rates. Therefore, the observed level of internal inefficiency reflects a systemic imbalance between input adequacy and functional utilisation, implying that internal efficiency is contingent not just on what is available, but on how effectively those resources are managed to support student progression.

A coefficient of relationship between Educational Inputs and Internal Efficiency reveals a nuanced picture of how various educational inputs influence internal efficiency. Notably, physical resources were found to have a significant adverse effect on internal efficiency ($B = -0.239$, $\beta = -0.268$, $p = .007$). This counterintuitive result suggests that mere abundance of physical infrastructure does not guarantee better learning outcomes and, if poorly managed or underutilised, may even hinder internal efficiency. This finding aligns with Ogunode and Ahaotu (2020), who argued that physical resource expansion without effective utilisation frameworks often leads to inefficiencies. Conversely, human resources had a strong and statistically significant positive influence on graduation rates ($B = 0.984$, $\beta = 0.366$, $p < .005$). This corroborates Afolabi and Loto (2021), who found that the availability of qualified teachers significantly enhances teaching effectiveness and student achievement. Olorunsola and Arogundade (2022) also emphasised that the equitable distribution of trained teachers fosters greater internal efficiency and minimises educational wastage. The impact of material resources, although not statistically significant at the 5% threshold ($p = .061$), was marginally substantial and adverse ($B = -0.208$, $\beta = -0.179$). This result is consistent with your descriptive findings, which showed a shortage of textbooks and teaching aids in most schools. The negative coefficient may reflect current inefficiencies or misallocation in the distribution or use of available materials.

Supporting this, Atolagbe et al. (2021) stressed that material adequacy and accessibility (not just their presence) are essential in fostering better student outcomes in both distance and conventional learning settings.

Taken together, these findings suggest that improving internal efficiency in education goes beyond increasing inputs. It requires effective deployment, teacher engagement, and equitable distribution. While human capital appears to be an asset in the current system, the impact of physical and material resources remains dependent on strategic planning, utilisation, and maintenance. Therefore, interventions should not only address shortages but also focus on capacity-building, monitoring, and accountability to ensure that existing resources translate into better educational outcomes. In sum, these findings strongly aligned with both local and international studies, suggesting that addressing educational input deficiencies is key to improving internal efficiency in schools. The high dropout/repetition rates highlight an urgent need for systemic intervention that targets both resource provision and effective utilisation strategies.

Conclusion

The findings indicate that public senior secondary schools in Kwara State face significant challenges in the provision and management of educational inputs. Although a surplus of teaching staff may enhance specific learning outcomes, critical shortages of instructional materials, such as textbooks and laboratory equipment, and inefficient management of physical resources hinder overall internal efficiency. This imbalance illustrates that excess human resources cannot compensate for deficits in material and infrastructural inputs, resulting in an educational system where the effectiveness of available resources is undermined. The over-abundance of teachers, when juxtaposed with the under-provision of textbooks and mismanaged infrastructure, creates an imbalanced system in which a resource surplus in one area does not compensate for deficits in others. Overall, the internal efficiency, as indicated by a 60.5% graduation rate, is only moderate and is adversely affected by the resource imbalances.

Recommendations

1. The Ministry of Education should undertake a systematic review of teacher deployment policies to improve the alignment of human resources with school needs. Surplus teachers should be redeployed to schools experiencing critical staff shortages or retrained to serve in specialised subjects or educational support functions. Also, teacher deployment should be based on their area of location. This will reduce the rate at which teachers move from their place of deployment to populate schools that have enough teachers close to their place of residence. This will ensure optimal utilisation of human resources while maintaining quality teaching.
2. School management should ensure proper maintenance of the available material resources, most especially mathematics and English, which are moderately adequate. At the same time, urgent investment is required to procure materials, especially core subject textbooks in civic and biology. The government should partner with NGOs, the private sector, and donor agencies to bridge the gap. Additionally, digital learning resources should be introduced where possible to complement physical materials.
3. Targeted interventions such as remedial programmes, counselling, and monitoring of students' progress should be introduced to reduce dropout rates and improve completion.
4. Education policymakers should adopt a balanced resource allocation model where the focus is not just on quantity but on strategic deployment to areas that directly enhance learning outcomes. Focusing heavily on improving material resources may not yield a proportionate improvement in internal efficiency. Continuous monitoring and evaluation should guide resource provision to ensure that investments translate to better internal efficiency and reduced wastage in the system.

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