



HUMAN RESOURCE CONSTRAINTS IN INFORMATION AND COMMUNICATION TECHNOLOGY BASED FINANCIAL ACCOUNTING INSTRUCTION IN SOUTH-SOUTH NIGERIA

BY

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Abstract

This study examined human resource challenges affecting the effective use of ICT tools in teaching financial accounting in institutions of higher learning in Rivers and Bayelsa States. A descriptive survey design was used for the study. The population consisted of 306 Business Education lecturers drawn from universities, polytechnics, and colleges of education in the study area. Data was sourced using a questionnaire and was analyzed using mean, standard deviation, and t-test at 0.05 alpha. The results suggests that personnel incompetence and poor maintenance of ICT facilities constitute major challenges to the effective teaching of financial accounting. The results further revealed an insignificant disparity in the mean responses of male and female lecturers, as well as lecturers from different tertiary institution categories. The study concluded that effective ICT utilization in financial accounting instruction depends on competent personnel, regular training, adequate technical support, and sustainable maintenance practices. It recommended regular ICT capacity-building programmes for lecturers, establishment of functional maintenance units, and improved funding for ICT facilities.

Keywords: Business Education; Financial Accounting; Human Resource Challenges; Information Communication Technology and Instruction.

INTRODUCTION

Information and communication technology has become central to contemporary teaching and learning because it provides digital tools for accessing, processing, storing, presenting, and communicating knowledge. In tertiary education, ICT facilities such as computers, projectors, internet services, learning management systems, accounting software, spreadsheet applications, and digital databases are expected to improve instructional delivery and strengthen students' practical skills. UNESCO (2023) emphasizes that technology in education can only produce meaningful outcomes when it is appropriately integrated, supported by effective governance, and used by teachers who possess the required digital competence. This implies that ICT facilities alone cannot improve teaching unless lecturers and supporting personnel are able to apply them effectively in the instructional process. This position is supported by Basilotta-Gómez-Pablos et al. (2022), who observed that tutors' digital competence in institutions of higher learning involves the

expertise, capabilities, and skills needed to utilise technology very-well for teaching, learning, assessment, and professional engagement. Similarly, OECD (2023) maintains that digital competence should not be treated as an optional skill for teachers but as a core professional requirement in modern education.

In financial accounting education, the need for ICT utilization has become more urgent because the accounting profession is increasingly shaped by digital tools, automation, data analytics, cloud-based accounting systems, and artificial intelligence. ACCA (2023) notes that digital technology is transforming the work of finance professionals and redefining the skills required in accounting practice. Similarly, IFAC (2024) emphasizes the importance of preparing a future-ready accounting profession by developing competencies that permit accountants to function well in a technology-driven business setting. Consequently, students of financial accounting in tertiary institutions require more than theoretical knowledge; they also need practical exposure to ICT-based accounting

tools that reflect current workplace realities. Recent accounting education literature further shows that digital transformation has made accounting instruction more practical, data-driven, and industry-focused, thereby requiring students to develop skills in digital reporting, spreadsheet modelling, accounting software, and technology-enabled decision-making.

The proper delivery of financial accounting lesson in higher institutions therefore requires lecturers who are digitally competent and willing to integrate ICT facilities into classroom instruction. ICT can make accounting concepts clearer through demonstrations, simulations, electronic spreadsheets, accounting packages, multimedia presentations, and online learning resources. It can also help students understand bookkeeping procedures, preparation of financial statements, analysis of financial information, and computer-based accounting practices. However, the achievement of this process is greatly tied to the human resources available within the institution, particularly the competence of lecturers, technical staff, and administrators responsible for supporting ICT-based instruction. Tondeur, et al. (2017) argued that teachers' pedagogical beliefs, professional readiness, and technological competence strongly influence the degree to which ICT is meaningfully combined into classroom exercise. In the same vein, studies on digital competence in higher education indicate that lecturers require continuous professional development if they are to move beyond basic technology use to purposeful pedagogical application.

Despite the increasing relevance of ICT in education, many tertiary institutions in Nigeria still experience challenges that limit effective ICT utilization. Recent studies and reports indicate that teacher preparedness, digital competence, training opportunities, technical support, and maintenance systems remain important conditions for successful technology integration. The World Bank (2023) identifies tutors' expertise and competency structures as essential to effective technology-supported teaching and learning. OECD (2023) also stresses that teacher digital competence should be developed through standards, continuous professional development, and wider institutional support. These views suggest that where lecturers lack ICT skills or receive limited training, ICT facilities may remain underutilized even when they are physically available. Khan, Hasan, and Clement (2012) also found that the introduction of ICT into education is often constrained by inadequate teacher training, weak technical support, limited access, and resistance to change, particularly in developing contexts.

Personnel incompetence is therefore a major concern in the teaching of financial accounting. Some lecturers may not be able to operate accounting software, utilise digital presentation tools, access online instructional materials, or apply ICT in ways that improve students' understanding. In some cases, lecturers may resist ICT-based teaching because of limited exposure, fear of technology, inadequate institutional support, or attachment to traditional methods of instruction. Technical support staff may also lack the expertise required to maintain hardware, troubleshoot

software problems, and assist lecturers during instructional delivery. These personnel-related weaknesses can prevent tertiary institutions from deriving maximum benefit from ICT investments. This agrees with recent systematic reviews which emphasize that the achievement of educational technology also hinge on lecturers' readiness, institutional assistance, and sustained digital capacity development.

Maintenance-related challenges also affect the effective use of ICT facilities. ICT equipment requires regular servicing, software updates, stable power supply, timely repairs, replacement of damaged components, and adequate funding for sustainability. When computers, projectors, accounting software, internet facilities, and other digital tools are not properly maintained, they become unreliable and unavailable for teaching. UNESCO (2023) notes that technology use in education must be sustainable and appropriate to the learning context, while the World Bank (2025) stresses that digital education systems require resilient infrastructure and implementation support. This shows that ICT utilization is not only a matter of procurement but also of continuous maintenance and institutional commitment. In developing educational systems, poor maintenance culture, inadequate technical manpower, and insufficient funding often result in equipment breakdown, low access, and discontinuity in ICT-supported instruction.

In institutions of higher learning in Rivers and Bayelsa States, the teaching of financial accounting requires functional ICT facilities and competent personnel who can use them effectively. However, where lecturers lack the required ICT competence and where facilities are poorly maintained, students may be denied the practical digital exposure needed for modern accounting practice. This may widen the gap between classroom learning and labour market expectations. The problem is particularly important because financial accounting graduates are expected to function in business environments where digital accounting systems, electronic records, and data-driven financial reporting are increasingly common. Therefore, the quality of human resources and the sustainability of ICT facilities are central to the preparation of accounting students for contemporary professional practice.

It is against this background that this study investigates human resource challenges affecting the effective utilization of ICT tools in delivering financial accounting lessons in tertiary institutions in Rivers and Bayelsa States.

Statement of the Problem

In an ideal tertiary education system, the teaching and learning of Financial Accounting would be significantly enhanced by the seamless integration of Information and Communication Technologies (ICTs) into classroom instruction. Lecturers would possess the requisite digital competencies to utilize accounting software such as Sage, QuickBooks, Excel-based modelling tools, and other computer-assisted instructional packages to simplify abstract accounting concepts, illustrate real-time financial transactions, and build undergraduates ahead of technologically driven demands of the modern accounting. Under such conditions,

human resource capacity, comprising adequately trained lecturers, technical support staff, and administrators, would work in tandem with available infrastructure to ensure that ICT tools are not merely present in institutions but are effectively and consistently deployed to improve pedagogical delivery. Students would, as a result, graduate with both theoretical accounting knowledge and the practical digital literacy skills demanded by employers in banking, auditing, taxation, and corporate finance sectors, thereby bridging the perennial gap between classroom instruction and industry expectations.

However, the reality in tertiary institutions across South-South Nigeria appears to diverge sharply from this ideal. Despite government and institutional efforts to procure computers, internet facilities, and accounting software for business education departments, the human element required to translate these technological investments into effective instructional outcomes remains grossly inadequate. Many lecturers handling Financial Accounting courses were trained in an era predating widespread computer-based instruction and consequently exhibit limited proficiency in operating ICT tools, let alone integrating them meaningfully into their teaching methodologies. Compounding this is the apparent reluctance of some lecturers to embrace ICT-driven pedagogy due to technophobia, fear of job displacement, or simple resistance to changing long-established chalk-and-talk teaching habits. Furthermore, inadequate manpower for ICT maintenance, insufficient and irregular training or retraining programmes, poor remuneration that discourages skill acquisition, and a dearth of technically competent support staff to assist lecturers in resolving hardware and software challenges all combine to undermine the utilization of available ICT facilities. The cumulative effect is that even where ICT infrastructure exists, it lies underutilized or completely unused in the teaching of Financial Accounting, leaving students poorly prepared for a profession that is rapidly being reshaped by digital tools and automation.

It is against this backdrop that the present study becomes imperative. While considerable scholarly attention has been devoted to infrastructural deficits as a barrier to ICT adoption in Nigerian tertiary education, comparatively little empirical inquiry has specifically interrogated the human resource dimension of this challenge, particularly as it concerns the teaching of Financial Accounting within the South-South geopolitical zone of Nigeria. This gap is significant because infrastructure alone, however sophisticated, cannot guarantee effective ICT utilization without a competent, willing, and adequately supported workforce to drive its application. Without a clear understanding of the specific human resource challenges, be they skill deficits, attitudinal resistance, inadequate training opportunities, or staffing shortages, policymakers, institutional administrators, and curriculum planners are left to design interventions on the basis of assumption rather than evidence. This study therefore seeks to systematically investigate these human resource challenges, with a view to generating empirically grounded insights that can inform targeted capacity-building initiatives, staff

development policies, and institutional reforms aimed at enhancing the effective utilization of ICT in the teaching of financial accounting in tertiary institutions in South-South Nigeria.

Aim and Objectives of the Study

This study specifically aimed to determine:

1. Challenges related to personnel incompetence affecting the effective use of ICT facilities for teaching financial accounting in tertiary institutions across Rivers and Bayelsa States.
2. Challenges related to inadequate maintenance affecting the effective use of ICT facilities for teaching financial accounting in tertiary institutions across Rivers and Bayelsa States.

Research Questions

1. What personnel incompetence challenges affect the effective use of ICT facilities for teaching financial accounting in tertiary institutions in Rivers and Bayelsa States?
2. What maintenance-related challenges affect the effective use of ICT facilities for teaching financial accounting in tertiary institutions in Rivers and Bayelsa States?

Hypothesis

The following two hypotheses were tested:

1. No significant difference exists between the average responses of male and female Business Education lecturers in Rivers and Bayelsa States concerning personnel incompetence challenges to the effective use of ICT facilities for teaching financial accounting in tertiary institutions within these states.
2. No significant difference exists in the average responses of Business lecturers from Universities, Polytechnics, and Colleges of Education in Rivers and Bayelsa States concerning poor maintenance challenges to the effective use of ICT facilities for teaching financial accounting in tertiary institutions within the area.

Methodology

The study utilised a descriptive survey design, which Owens (2002) characterized as an approach in which uniform information is collected from an impartial, representative group of interest through questionnaires, interviews, and observation. This design suited the present study since a questionnaire was used to gather data from respondents regarding the human resource challenges affecting effective ICT use in teaching financial accounting at tertiary institutions in South-South Nigeria. The study population comprised all 306 business lecturers, spanning marketing, business administration, business education, and accountancy, drawn from nine higher institutions across the two states, namely three Universities, three Polytechnics, and three Colleges of

Education. Owing to its manageable scale, the entire population was incorporated into the study.

Data were gathered using a structured questionnaire rated on a four-point rating scale. Mean scores were used to address the research questions, while the null hypotheses were assessed using t-tests.

Results

Research Question 1:

What personnel incompetence challenges affect the effective use of ICT facilities for teaching financial accounting in tertiary institutions in Rivers and Bayelsa States?

Table 1: Mean and standard deviation of personnel incompetence challenges

S/N	Questionnaire Item	Mean ($\bar{X}$)	SD	Decision
1	Financial accounting lecturers lack adequate ICT skills required for effective classroom instruction.	3.68	0.82	Agree
2	Many lecturers experience difficulty in operating accounting software and other ICT tools used for teaching.	3.55	0.87	Agree
3	Insufficient training on emerging ICT technologies limits lecturers' effectiveness in teaching financial accounting.	3.84	0.76	Agree
4	Technical support personnel lack the expertise needed to assist lecturers in the use of ICT facilities.	3.47	0.91	Agree
5	Resistance to learning and adopting new ICT tools among some lecturers hinders effective teaching of financial accounting.	3.62	0.85	Agree
	Grand Mean	3.63	0.84	Agree

Table 1 revealed that personnel incompetence constitutes a major challenge affecting the proper utilisation of ICT tools in teaching financial accounting in tertiary institutions in Rivers and Bayelsa States. Respondents agreed that many financial accounting lecturers lack the requisite ICT competencies needed for effective classroom instruction, while others experience difficulties in operating accounting software and other digital teaching tools. The respondents also indicated that inadequate training opportunities on emerging ICT

technologies and insufficient technical support further hinder the effective integration of ICT facilities into the teaching process.

Furthermore, the respondents agreed that resistance to learning and adopting new ICT innovations among some lecturers negatively affects the utilization of ICT facilities in financial accounting instruction. This finding is supported by the grand mean score of 3.63, which is above the criterion mean of 2.50, indicating agreement among the respondents. The grand standard deviation of 0.84 suggests that the respondents' opinions were relatively homogeneous, indicating a considerable level of consensus regarding the existence of personnel incompetence challenges in the effective use of ICT facilities for teaching financial accounting.

Research Question 2:

What maintenance-related challenges affect the effective use of ICT facilities for teaching financial accounting in tertiary institutions in Rivers and Bayelsa States?

Table 2: Mean and standard deviation of maintenance-related challenges.

S/N	Questionnaire Item	Mean ($\bar{X}$)	SD	Decision
1	Irregular maintenance of ICT facilities affects their effective utilization for teaching financial accounting.	3.79	0.74	Agree
2	Delays in repairing faulty ICT equipment disrupt the teaching and learning of financial accounting.	3.88	0.69	Agree
3	Inadequate funding for the maintenance of ICT facilities limits their functionality.	4.02	0.65	Agree
4	The absence of a regular maintenance schedule contributes to the deterioration of ICT facilities.	3.71	0.81	Agree
5	Frequent breakdown of ICT equipment due to poor maintenance reduces their effectiveness in financial accounting instruction.	3.93	0.72	Agree
	Grand Mean	3.87	0.72	Agree

Table 2 showed that maintenance-related issues significantly affect the proper utilisation of ICT tools in teaching financial accounting in tertiary institutions in Rivers and Bayelsa

States. Respondents agreed that irregular maintenance of ICT facilities, delays in repairing faulty equipment, and inadequate funding for maintenance activities are among the major challenges confronting institutions. They further indicated that the absence of a structured maintenance schedule contributes to the deterioration of ICT facilities, thereby limiting their effectiveness in supporting the teaching and learning of financial accounting.

In addition, respondents agreed that frequent breakdowns of ICT equipment resulting from poor maintenance practices adversely affect instructional delivery and students' learning experiences. The grand mean score of 3.87 indicates a high level of agreement among respondents that maintenance-related challenges hinder the effective utilization of ICT facilities in financial accounting education. The grand

standard deviation of 0.72 further indicates that respondents shared similar views on the issue, reflecting a strong consensus regarding the prevalence of maintenance-related challenges in tertiary institutions within Rivers and Bayelsa States.

Hypotheses Testing

Hypothesis 1

No significant difference exists between the average responses of male and female Business Education lecturers in Rivers and Bayelsa States concerning personnel incompetence challenges to the effective use of ICT facilities for teaching financial accounting in tertiary institutions within these states.

Table 3: Independent Samples t-test Analysis of Male and Female Lecturers on Personnel Incompetence Challenges

Gender	N	Mean ($\bar{X}$)	SD	df	t-cal	t-crit	Decision
Male	153	3.65	0.83				
Female	153	3.61	0.85	304	0.41	1.96	Not Significant
Total	306						Accept H_{01}

Table 3 show that male lecturers obtained a mean score of 3.65 with a standard deviation of 0.83, while their female counterparts obtained a mean score of 3.61 with a standard deviation of 0.85 regarding personnel incompetence challenges affecting the proper utilisation of ICT tools in teaching financial accounting. The calculated t-value of 0.41 is less than the critical t-value of 1.96 at 0.05 level of significance and 304 degrees of freedom.

Therefore, the null hypothesis was accepted. This implies that there is no substantial disparity between the mean responses of male and female Business Education lecturers concerning personnel incompetence challenges affecting the effective use of ICT tools in teaching financial accounting in higher

institutions in Rivers and Bayelsa States. The finding suggests that both groups share similar perceptions regarding the influence of inadequate ICT skills, insufficient training, lack of technical expertise, and resistance to technological innovations on ICT utilization in financial accounting instruction.

Hypothesis 2

No significant difference exists in the average responses of Business lecturers from Universities, Polytechnics, and Colleges of Education in Rivers and Bayelsa States concerning poor maintenance challenges to the effective use of ICT facilities for teaching financial accounting in tertiary institutions within the area.

Table 4: t-test of lecturers from universities and other tertiary institutions on poor maintenance challenges

Institution Category	N	Mean ($\bar{X}$)	SD	df	t-cal	t-crit	Decision
Universities	153	3.89	0.71				
Polytechnics/Colleges of Education	153	3.85	0.73	304	0.48	1.96	Not Significant
Total	306						Accept H_{02}

Table 4 indicates that lecturers from Universities had a mean score of 3.89 and a standard deviation of 0.71, whereas lecturers from Polytechnics and Colleges of Education recorded a mean score of 3.85 and a standard deviation of 0.73 on poor maintenance challenges affecting the proper utilisation of ICT tools in teaching financial accounting. The calculated t-value of 0.48 is lower than the critical t-value of 1.96 at the 0.05 significance level with 304 degrees of freedom.

Based on this result, the null hypothesis was accepted. This indicates that there is no substantial disparity in the mean responses of lecturers from Universities, Polytechnics, and

Colleges of Education concerning maintenance-related challenges affecting the proper utilisation of ICT tools in teaching financial accounting. The finding implies that lecturers across the various categories of tertiary institutions similarly perceive issues such as irregular maintenance, delayed repairs, inadequate maintenance funding, lack of maintenance schedules, and frequent equipment breakdowns as major obstacles to the effective integration of ICT facilities into financial accounting instruction.

Discussion of Findings

The research outcomes demonstrated that incompetence among personnel represents a significant obstacle to the

effective application of ICT resources in teaching financial accounting at tertiary institutions in Rivers and Bayelsa States. Participants concurred that limited ICT proficiency among lecturers, challenges in operating accounting software, insufficient exposure to training on emerging technologies, a shortage of qualified technical support staff, and reluctance toward embracing new ICT innovations collectively impede the meaningful incorporation of ICT resources into financial accounting instruction. An overall mean score of 3.63 reflected respondent consensus that personnel-related issues influence ICT application, while an overall standard deviation of 0.84 pointed to relatively uniform responses. This suggests that merely having ICT facilities present is not enough; lecturers and support staff must also possess the necessary skills to apply these tools meaningfully within the instructional process.

This outcome aligns with the work of Basilotta-Gómez-Pablos et al. (2022), who found that digital competence among lecturers encompasses the capacity to employ digital technologies for instruction, learning, evaluation, communication, and professional growth. It also reinforces the World Bank's (2023) position emphasizing that educators' digital abilities and pedagogical competence with technology are vital for delivering effective technology-enhanced teaching and learning. In a similar vein, the OECD (2023) highlighted the need to bolster teachers' digital competence through established standards, ongoing professional development, and broader institutional backing. These perspectives reinforce that lecturer competence is fundamental to successfully embedding ICT within financial accounting instruction, especially given that the discipline requires students to develop hands-on proficiency in accounting software, spreadsheet tools, digital recordkeeping, and technology-driven financial reporting.

The findings further suggested that male and female lecturers showed no substantial divergence in their views regarding personnel incompetence challenges. This signifies that both genders comparably identified deficient ICT skills, limited training opportunities, weak technical assistance, and resistance to technological adoption as obstacles to effective ICT utilization. This outcome corresponds with UNESCO's (2023) emphasis that integrating technology into education must account for teacher readiness, fairness, suitability, scalability, and long-term sustainability. It similarly aligns with IFAC's (2024) assertion that accounting education and professional practice must cultivate professionals equipped for the future who can thrive within a digitally transformed landscape. This implies that capacity-building initiatives ought to encompass all lecturers engaged in financial accounting instruction rather than being restricted by gender.

The study additionally established that challenges related to maintenance substantially impact the effective application of ICT resources in teaching financial accounting within tertiary institutions across Rivers and Bayelsa States. Respondents agreed that sporadic maintenance practices, postponed repairs, insufficient funding allocated to upkeep, the absence of consistent maintenance schedules, and recurring equipment

failures collectively obstruct technology use in financial accounting instruction. An overall mean score of 3.87 signified strong consensus among participants, and an overall standard deviation of 0.72 reflected a high degree of agreement in their perspectives. This points to maintenance difficulties being not isolated incidents but rather ongoing institutional concerns that compromise the dependability and long-term viability of ICT-supported teaching.

This observation is corroborated by UNESCO (2023), which stated that technology integration within education must be suitable, equitable, scalable, and sustainable to yield meaningful learning benefits. It further echoes the World Bank's (2025) assertion that digital education frameworks demand robust infrastructure, dependable implementation support, and sustained investment. Within financial accounting education specifically, inadequately maintained ICT resources can restrict lecturers' capacity to showcase accounting software, deliver digital presentations, facilitate computer-based practical sessions, or introduce students to technology-driven accounting methods. Consequently, maintenance extends beyond being a purely technical matter to become an instructional priority that directly shapes teaching quality and students' preparedness for contemporary accounting practice.

The hypothesis testing additionally revealed no meaningful variation in the perspectives of lecturers from Universities, Polytechnics, and Colleges of Education regarding maintenance-related challenges. This signals that inadequate upkeep of ICT facilities constitutes a shared difficulty across the various categories of tertiary institutions within Rivers and Bayelsa States. This finding is consistent with the OECD's (2023) assertion that successful digital education depends on a broader support ecosystem rather than individual teacher competence alone. It also reinforces ACCA's (2023) observation that digital technology continues to transform finance and accounting work, thereby compelling educational institutions to establish functional digital learning environments. The finding therefore suggests that government bodies and institutional leadership should direct attention not solely toward acquiring ICT equipment but also toward maintenance planning, technical staffing, and sustainable funding mechanisms for ICT resources.

Conclusion

The study concluded that personnel incompetence remains a major challenge affecting the effective utilization of ICT facilities for delivering financial accounting lessons in higher institutions in Rivers and Bayelsa States. The results indicated that inadequate ICT skills, insufficient training opportunities, limited technical support, and resistance to technological innovation among lecturers significantly hinder the integration of ICT into instructional practices. Since lecturers are central to the teaching-learning process, their competence directly influences the extent to which ICT resources can be effectively utilized to improve students' learning outcomes.

The study also concluded that maintenance-related challenges constitute a serious impediment to the effective utilization of

ICT facilities in financial accounting instruction. Issues such as inadequate funding for maintenance, delayed repairs, lack of maintenance schedules, and frequent equipment breakdowns reduce the functionality and availability of ICT facilities in tertiary institutions. Consequently, the educational benefits associated with technology-enhanced learning may not be fully realized.

Finally, the study established that perceptions regarding personnel incompetence and maintenance challenges do not significantly differ based on gender or institutional category. This suggests that the identified challenges are widespread across tertiary institutions in Rivers and Bayelsa States. Therefore, attending to these difficulties demands well planned initiatives involving government agencies, institutional administrators, lecturers, and other stakeholders to enhance ICT competence and ensure the sustainability of ICT facilities in educational institutions.

Recommendations

In view of the conclusion, the following suggestions are presented:

1. Regular ICT Capacity Building for Lecturers: Tertiary institution management should organize periodic training, workshops, seminars, and professional development programmes aimed at improving lecturers' ICT competencies, particularly in the use of accounting software and other digital instructional tools. This will enhance their ability to effectively integrate ICT facilities into financial accounting instruction.
2. Provision of Adequate Technical Support and Maintenance Structures: Institutions should establish dedicated ICT maintenance units staffed with qualified technical personnel responsible for routine inspection, servicing, and repair of ICT facilities. Regular maintenance schedules should be developed and strictly implemented to ensure the continuous functionality of ICT equipment.
3. Increased Funding for ICT Infrastructure and Maintenance: Government agencies, institutional administrators, and other stakeholders should provide adequate funding for the procurement, upgrading, and maintenance of ICT facilities. Sufficient financial resources will help reduce equipment breakdowns, facilitate timely repairs, and

ensure that ICT facilities remain available for proper learning of financial accounting.

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