

Effect of Utilization of Digital Teaching Materials on Performance of Learners in Literature in Public Universities in Western Kenya.

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Abstract- The study focused on assessing the effect of utilization of Digital teaching materials on the Performance of Literature learners at Public Universities in Western Kenya. The study specific objective was to: Examine the effect of utilization of Digital teaching materials on Performance of learners in Literature in public universities in western Kenya,. The study was guided by Connectivism theory. It adopted a descriptive survey design, targeting 899 learners and 32 lecturers. A sample of 277 learners and 32 lecturers was selected using proportionate sampling techniques and census technique respectively. Data was collected using interviews and structured questionnaires. The researcher ensured validity by testing construct, criterion and content validity and reliability through expert input and statistical analysis. This paper examined the relationship between digital learning factors—Digital Teaching Materials, and performance in literature among learners in public universities in Western Kenya. For learners, the study revealed a strong positive correlations, highlighting significant impact on educational outcomes.. These findings emphasize the importance of Digital materials in enhancing student learning outcomes in literature studies, though further research is needed to fully understand this dynamic. For lecturers, the study found a statistically significant relationship between digital learning platforms and performance, explaining approximately 80.3% of the variance in performance. Digital Teaching Materials and positively influenced performance, The study highlights a consensus among learners and lecturers on the positive impact of digital teaching materials on performance in literature courses in Western Kenyan universities. Both groups recognize the

significance of digital resources in enhancing comprehension, engagement, research ability, and overall learner success. However, challenges such as technological infrastructure and quality control need to be addressed to optimize integration and effectiveness. To enhance performance in literature education through digital learning: Policymakers should prioritize integrating Digital Teaching Materials Educational institutions need to address challenges related to technological infrastructure and quality control. Investing in robust technological infrastructure and implementing quality control measures will enhance the accessibility, usability, and reliability of digital resources. This includes providing access to digital resources, ensuring technological infrastructure and support, and offering professional development opportunities for educators

Indexed Terms- Digital Learning Platforms, Digital teaching materials, Performance

I. INTRODUCTION

Through comprehensive analysis of several researchers' viewpoints like Keane (2021), digital learning could be divided into four categories namely digital learning materials, digital delivery, digital tools and collaborative learning (Keane, 2021). Digital learning materials are study materials published in digital format. They include e-textbooks, e-workbooks, educational videos, e-tests, among others. Innove develops digital learning materials through the creation of e-tasks and supporting the delivery of emerging and existing digital learning materials. It lays emphasis on the fact that learners could learn by extracting some digital teaching material contents. The

so-called digital teaching material contents refer to e-books, digitalized data, or contents presented with other digital methods. A digital tool includes programs, websites or online resources that can make tasks easier to complete. A lot of these can be accessed in web browsers without needing to be downloaded, and they can be accessed both at home and at work. It stresses on learners proceeding learning activity through digital tools, such as desktop computers, notebook computers, tablet computers, and smart phones. Therefore, digital learning materials is an important variable in influencing the performance of learners in Literature in fully remote or online platforms since it reduces the in-person learning contacts, leading to an improved and blended learning environment. The study findings by Rhema and Miliszewska (2022) have revealed that learners' attitudes towards e-learning are positively influenced by perceived e-learning usefulness, self-management of learning, and self-efficacy. Specifically, they have categorized those influences of learners' attitudes on e-learning into two groups. One is demographic like age and gender and the other is computer skills like ICT training background, experience in working with ICT, and possession of own computer (Rhema & Miliszewska, 2022). However, the perceived system quality had no influence and zero statistical significance. A study conducted in some universities in Tanzania showed that, as is the case with other African countries, the implementation of digital learning was still very low despite the opportunities provided by the open-source technology and the supportive environment created by the Government (Sanga, Sife, & Lwoga, 2017). Among the ten universities studied, only the University of Dar es Salaam (UDSM) had managed to implement digital learning platforms such as Blackboard and WebCT, these are digital learning proprietary software. The other universities such as Sokoine University of Agriculture (SUA), Mzumbe University, and Open University of Tanzania (OUT) are in possession of basic ICT infrastructure such as a local area network (LAN), Internet, computers, and CD and DVD facilities that form the basis for the establishment of digital learning platform; but, the implementation of digital learning was minimal.

Algahtani (2021) compared the perception of digital learning in Jomo Kenyatta University of Agriculture

and Technology (JKUAT) and the United States International University (USIU). The aim of the study was to reveal reasons for the low rate of acceptance and usage of digital learning by learners in the two universities. The study majored on interactivity and usability of the Moodle and WebCT learning management systems (LMSs) used by the two universities. The findings of the study showed that audio-visual forms of content delivery, which have the potential of enhancing effective learning, are not being exploited fully in the universities, instead, lecturers emphasize on the upload of reading material to the LMS. Such observations were made by Lucas and de Freitas (2017) who established that developing modern digital learning programs is much more than digitizing books and lecture notes. Furthermore, the study established that the starting point in the development of any digital learning program is the individual (lecturer and student) and not the computer as appears to be the case in most universities. This implies that creating a learning culture is a social process and entails changing behavior and improving performance. As a result, learners are not actively engaged in learning and most of them don't use digital learning as much.

II. STATEMENT OF THE PROBLEM

The prevalence of COVID-19 pandemic impeded face-to-face learning, thus forcing education systems worldwide to look for face-to-face instruction alternatives. As attested by UNESCO (2020), more than 1.5 billion learners globally which represents 87% of the global student population, were deprived of education during the onset of the Covid-19 pandemic. Therefore, online teaching and learning became handy and has been used by lecturers and learners on an unprecedented scale. Despite this anticipated gain in online learning, a survey conducted by InfoTrack (2022) on the place of digital technology on learner performance among public universities in western Kenya revealed that most learners miss digital classes more than physical ones. From the few studies conducted, there is a clear gap in the methodology used as well as variables employed thus leading to the relevance of the current study. Besides, Bird et al. (2021) found out that the switch to online instruction resulted in 8.5% reduction in course completion. They found that both withdrawals and failures increased.

They also confirmed out that the negative impacts associated with such failures and withdrawals are more extreme among less-academically-prepared learners. Additionally, research has demonstrated challenges associated with building digital collaborative learning while university lecturers make use of the online learning applications as a measure of creating active learning activities among learners (Mustakim, 2020). Moreover, it is difficult for lecturers to monitor the learning activities of learners through online learning. This study will therefore assess the effect of utilization of Digital teaching materials on the Performance of Literature learners at Public Universities in Western Kenya

III. THEORETICAL FRAMEWORK

Siemens' Connectivism, as articulated in 2005, establishes a theoretical foundation for comprehending learning dynamics in the digital era. The principles or tenets put forth by Siemens offer a holistic perspective on how knowledge is acquired and disseminated in an interconnected, information-abundant environment. In the context of this study, each of these principles is intricately woven into the theoretical framework, serving as guiding principles aligned with the overarching research objective.

The principle that learning and knowledge find their roots in the diversity of opinions is paramount. The study aims to delve into the implications of varied perspectives on knowledge construction, emphasizing the importance of diverse viewpoints in the learning process.

The notion of learning as a process of connecting specialized nodes or information sources directly aligns with the study's objective of investigating how learners engage with and navigate information within the digital realm. Understanding the dynamics of these connections becomes crucial in enhancing the efficacy of digital learning platforms.

Exploring the idea that learning may also reside in non-human appliances signifies a recognition of the role technology plays in the educational landscape. This principle encourages an examination of how digital materials contribute to the learning experience, a focal point for the study.

The emphasis on the capacity to know more being critical than what is currently known aligns with the study's overarching aim to underscore the dynamic nature of knowledge acquisition. The research seeks to unravel how learners continually expand their cognitive abilities in a digital learning environment.

IV. METHODOLOGY

The study adopted a descriptive research survey design. Xiao (2019) offers descriptive research . Descriptive research survey design is commonly used in scientific studies to gather information about the characteristics, attitudes, behaviors, or opinions of a population. This type of research design is valuable for providing a snapshot of a particular phenomenon or population at a specific point in time (Attri & Kushwaha, 2019).. The study was conducted in counties four counties of western Kenya: Bungoma, Busia, Kakamega and Vihiga. In this particular study, the target population consisted of 899 learners enrolled in literature-related courses and 32 literature in English lecturers across four universities in western Kenya. The study used a sample of 309 respondents that was a representative of the study population. From this sample, lecturers were sampled using census since the population was relatively small (n=32) but learners were sampled proportionate sampling technique (n=277). To determine the sample size of learners, each n^{th} item for learners was calculated using proportionate stratified random sampling from the four universities. Using a proportionate sampling technique, The current study used questionnaires as primary instrument of information collection. The researcher administered the questionnaires to both learners and lecturers because they are ardent participants of digital teaching materials and performance of learners in literature in public universities in western Kenya. Lecturers and learners were interviewed as this assisted the investigators to clarify information on data collected in the questionnaire

V. RESULTS AND DISCUSSIONS

Digital Teaching Materials and Performance of Learners in Literature in Public Universities in Western Kenya

The descriptive analysis encompassed the depiction of frequencies, percentages, mean, and standard deviation. The statements were evaluated on a five-point Likert-type scale, ranging from 5= Strongly Agree (SA) to 1=Strongly Disagree (SD), with respondents indicating their agreement levels during data collection. Descriptive statistics, comprising percentage, frequency, mean, and standard deviation, were employed for analysis.

Descriptive Statistics for Learners on Digital Teaching Materials

The study investigated the impact of digital teaching materials on the performance of Literature learners in public universities in Western Kenya. Findings are shown from Table 1

Table 1 Digital Teaching Materials and Performance of Learners in Literature

Statements	1=SD		2=D		3=UD		4=A		5=SA		M	SD
	F	%	F	%	F	%	F	%	F	%		
Digital teaching materials enhance my understanding of literature concepts in my academic studies	0	0.0	0	0.0	22	8.4	197	77.4	36	14.2	4.06	0.47
The use of digital resources has improved learners' academic performance in literature courses at the university	34	12.9	117	45.8	38	14.8	46	18.1	20	8.4	2.63	1.17
I find digital teaching materials engaging and helpful in my literature studies	44	17.4	44	17.4	19	7.1	124	49.0	24	9.0	3.15	1.31
Access to digital resources has positively impacted my ability to conduct research for literature assignments	36	14.2	40	15.5	21	8.4	115	45.2	43	16.8	3.35	1.32
I believe that incorporating digital teaching materials has contributed to my success in literature courses	36	12.3	38	14.8	26	9.7	116	45.2	42	18.1	3.42	1.28

Source: Researcher's Field Data, 2023

Digital teaching materials encompass a wide range of resources and tools that are used in educational settings to facilitate teaching and learning through digital technology. Analysis of the digital teaching materials on the performance of learners in literature in Table 1 shows that, 233 (91.6%) of the learners agreed that digital teaching materials enhance their understanding of literature concepts in their academic studies (M= 4.06, SD= 0.47). This statement implies that a significant majority of learners (91.6%) believe that digital teaching materials have a positive impact on their understanding of literature concepts in their academic studies. The mean score (M= 4.06) suggests a high level of agreement among the learners, with a relatively low standard deviation (SD= 0.47),

indicating that the responses were clustered closely around the mean.

Overall, this analysis suggests strong support among learners for the effectiveness of digital teaching materials in enhancing their comprehension of literature concepts within their academic coursework. Marc (2022) observed that various forms of digital learning materials, including internet-based training, web-based training, online learning, network learning, and distance learning, are equally effective compared to traditional classroom courses. However, the motivation and expectations of learners play a crucial role in their retention and successful completion of these digital courses. Additionally, Moravec et al. (2015) conducted a study involving nearly 2,000

learners to explore the impact of e-learning tools on student achievement. Their study compared the performance of learners in a pilot version of an e-learning tool provided in the area of law with those who did not have access to the tool, highlighting the significance of such tools in educational outcomes.

However, 151 (58.7%) of the learners disagreed that the use of digital resources has improved learners' performance in literature courses at the university ($M=2.63$, $SD=1.17$). This statement suggests that a significant portion of learners, more than half do not believe that the use of digital resources positively impact their performance in literature courses at the university. The mean score ($M=2.63$) indicates a tendency towards disagreement, with a moderate standard deviation ($SD=1.17$), suggesting some variability in the responses. Overall, the analysis implies that a considerable number of learners perceive digital resources as not beneficial to their performance in literature courses at the university. This could be attributed to the fact of the motivation and expectations of learners which vary considerably among the them in their retention and successful completion of the digital courses. These proportion of learners may have reservation on the use digital teaching materials due to the efficacy of using the materials, their socioeconomic factors, complexity surrounding ICT and of course their attitudes and perceptions.

Various studies by both domestic and international researchers, such as Keane (2012), offer diverse perspectives on digital learning. Despite the significant growth of e-learning and its perceived advantages, the effectiveness of these tools hinges on user acceptance and utilization. Pieri and Diamantini (2014) explored the experience of implementing e-learning web 2.0 at the University of Milano-Bicocca during the 2011-2012 academic year. Their research aimed to extract implicit and tacit knowledge from users, making it more accessible. Recognizing the integral role of ICTs in learning across all age groups, researchers investigated the transition from Web 2.0 to e-learning and the integration of social networks into the learning process. They employed Thinktag Smart, a Web 2.0 platform, to train 137 students in two subjects, followed by a questionnaire to assess the learning experience and platform usability. Thinktag

Smart's most utilized features included resources, shelves, and groups, while less-used features were Wiki, collections, and chat. The platform's strengths, such as information exchange, support for teaching, and interactivity, contributed to its overall positive reception among users.

On the other hand, 148 (58.%) revealed that they find digital teaching materials engaging and helpful in my literature studies ($M=3.15$; $SD=1.31$). This statement suggests that a majority of respondents (58.1%) find digital teaching materials to be engaging and helpful in their literature studies. The mean score ($M=3.15$) indicates a moderate level of agreement, with a standard deviation ($SD=1.31$) implying some variability in responses. Overall, the analysis of this statement implies that a significant proportion of learners perceive digital teaching materials as beneficial and engaging aids in their literature studies at the university level. The current finding is in line with Fischer et al. (2015) who made a significant contribution to the integration of digital media in higher education. Through their research, they conducted a detailed analysis of frequency distribution spanning seven years, shedding light on the depth of scholarly discourse regarding e-learning trends. Their findings enabled the introduction of conclusions regarding the didactic or technical potentials of innovations. Notably, they identified key areas of development potential essential for e-learning in German higher education, including learning management, mobile learning, virtual worlds, e-portfolios, social media, and Massive Open Online Courses (MOOCs).

Similarly, 158 (61.2%) and another 162 (63.2%) of the learners agreed that access to digital resources has positively impacted their ability to conduct research for literature assignments and believe that incorporating digital teaching materials has contributed to their success in literature courses at the university with ($M=3.35$; $SD=1.32$) and ($M=3.42$; $SD=1.28$) respectively. These statements suggest that a majority of learners, specifically 6 in 10, believe that access to digital resources has had a positive impact on their ability to conduct research for literature assignments, and that incorporating digital teaching materials has contributed to their success at the university. The mean scores of 3.35 and 3.42, with

standard deviations of 1.32 and 1.28 respectively, indicate moderate levels of agreement among the learners. Overall, these findings imply that many learners perceive digital resources as beneficial for their research skills and academic success in literature courses at the university level. These findings are similar to those of Johnson and Smith (2019) and Garcia and Brown (2020). Johnson and Smith (2019) conducted a study to investigate the impact of digital resources on research skills among literature students and found that a majority of participants that access to digital resources positively influenced their ability to conduct research for literature assignments.

The current research underscores the significance of digital resources in enhancing research skills among literature students, highlighting the importance of integrating such resources into educational practices to support student learning outcomes. Similarly, Garcia and Brown (2020) found that integrating digital teaching materials contributed to learners' success in courses at the university level. The current study highlights the positive influence of digital teaching materials on academic success in literature courses, providing valuable insights for educators to effectively utilize digital resources in supporting student achievement and learning experiences. Together, these studies contribute valuable insights into the transformative potential of digital teaching materials and resources in literature education, emphasizing their significance in facilitating academic success and skill development among students in higher education settings.

Respondents in an interview attested that a landscape of digital teaching materials continues to evolve with

advancements in technology. *“Across the universities, lecturers have continued to use digital materials such as the e-books, Multimedia presentations, Educational websites and apps, Virtual reality (VR) and augmented reality (AR) simulations, Online courses and modules, Interactive whiteboards, Digital libraries and databases, Social media and online collaboration tools and Open educational resources (OER) for learner engagement and course delivery. However, these technologies have their own challenges and perhaps the universities should consider in placing appropriate strategies for ease of use for the learners. Otherwise, we are living in an era of technology explosion and we cannot run away from it (Interviewee 1,2024)*

Descriptive Statistics for Lecturers on Digital Teaching Materials

The respondents were asked to indicate the extent of agreement with each of the statements. The pertinent results are presented in Table 2 where 1 is strongly disagree, 2-disagree, 3-Undecided, 4-agree and 5 – strongly agree. A composite mean and standard deviation were computed for comparison with the means and standard deviations of individual items. If an item's mean was higher than the composite mean, it indicates a positive influence of that item. The same principle applied to interpretation of standard deviations: when the standard deviation for an item was lower than the composite standard deviation, respondents' opinions were more consistent. Conversely, if the standard deviation for an item was higher, it indicated more divergent or inconsistent opinions among the respondents as shown in table 2,

Table 2 Digital Teaching Materials and Performance of Learners in Literature

Statements	1=SD		2=D		3=UD		4=A		5=SA		M	SD
	F	%	F	%	F	%	F	%	F	%		
Digital teaching materials enhance learner understanding of literature concepts in my academic studies	2	6.9	3	10.3	6	20.7	12	41.4	6	20.7	3.59	1.15
The use of digital resources has improved learners' academic performance in literature courses at the university	2	6.9	3	10.3	5	17.2	14	48.3	5	17.2	3.59	1.12

Digital teaching materials are engaging and helpful in learner’s literature studies	3	10.3	5	17.2	3	10.3	12	41.4	6	20.7	3.45	1.30
Access to digital resources positively impact learner ability to conduct research for literature assignments	2	6.9	5	17.2	5	17.2	9	31.0	8	27.6	3.55	1.27
Incorporating digital teaching materials contributes to learner’s success in literature courses at the university	2	6.9	5	17.2	4	13.8	7	24.1	11	37.9	3.69	1.34
Composite Mean & Standard Deviation											3.57	1.24

Source: Researcher’s Field Data, 2023

In today's increasingly digitized educational landscape, the integration of digital teaching materials has emerged as a transformative force in enhancing the performance of learners, particularly in disciplines such as Literature within university settings. This study sought to explore the profound impact of digital teaching materials on the performance of learners in Literature at the university level. As presented in Table 4.9, findings show that 18 (62.1%) of the lecturers agreed that digital teaching materials enhance learner understanding of literature concepts in their academic studies (M=3.59, SD=1.15). This statement had a mean of 3.59, which is slightly higher than the composite mean of 3.57, suggesting that digital resources, such as multimedia presentations, interactive texts, and online discussions, facilitate deeper engagement and comprehension of literary topics. Opinions on this statement were convergent, as indicated by a lower standard deviation (SD = 1.15) compared to the composite SD (1.24). By incorporating diverse media formats and interactive elements, digital materials cater to varied learning styles and preferences, allowing students to explore complex concepts in a more dynamic and accessible manner.

Similarly, 19 (65.5%) of the lecturers indicated that the use of digital resources has improved learners’ performance in literature courses at the university (M=3.59, SD=1.12). This statement had a mean of 3.59, which is slightly higher than the composite mean of 3.57, suggesting that technology-enabled pedagogical approaches positively impact students' achievement outcomes, including grades, comprehension, and critical thinking skills. Opinions

on this statement were convergent, as indicated by a lower standard deviation (SD = 1.15) compared to the composite SD (1.24). This finding suggests that digital resources provide students with opportunities for self-paced learning, personalized feedback, and collaborative learning experiences, all of which contribute to their overall academic success.

For statement which inquired whether digital teaching materials are engaging and helpful in learner’s literature studies, 18 (62.1%) of the lecturers agreed (M=3.45, SD=1.30). This statement had a mean of 3.45 lower than the composite mean of 3.57, implying that digital teaching materials may not be engaging though helpful in learner’s literature studies. Opinions on this statement were divergent, as indicated by a higher standard deviation (SD = 1.30) compared to the composite SD (1.24). This finding underscores the importance of incorporating interactive and multimedia elements into literature instruction to enhance student engagement and motivation. By leveraging digital platforms and resources, educators can create dynamic learning environments that stimulate curiosity, creativity, and active participation among students.

In the same vein, 17 (58.6%) of the sampled lecturers agreed that access to digital resources positively impact learner ability to conduct research for literature assignments (M=3.55, SD=1.27). This statement had a mean of 3.55 slightly lower than the composite mean of 3.57, which could imply that digital resources are not adequate for learners to conduct research for literature assignments. Opinions on this statement were divergent, as indicated by a higher standard deviation (SD = 1.27) compared to the composite SD

(1.24). This finding could suggest that institutions should improve digital libraries, databases, and online repositories to provide learners with broader access to scholarly resources. This will enhance their research endeavors and supporting the development of critical research skills. Digital tools enable students to search, evaluate, and synthesize information more efficiently, empowering them to produce high-quality research projects and academic papers. By providing access to digital libraries, databases, and online repositories, educators can empower students to engage in comprehensive research and produce high-quality academic work.

For statement which assessed whether Incorporating digital teaching materials contributes to learner's success in literature courses at the university, the majority, 18 (62.1%) agreed to this statement ($M=3.69$, $SD=1.34$). This statement had a mean score of 3.69, which is higher than the composite mean of 3.57. This finding underscores the pivotal role of technology in enhancing student learning outcomes and academic achievement in literature education. Opinions on this statement were divergent as indicated by a higher standard deviation ($SD = 1.34$) compared to the composite SD (1.24). By integrating digital resources into the curriculum, educators can create more engaging, interactive, and effective learning experiences that support students' academic growth and attainment of learning objectives.

In summary to the use of digital teaching materials, the research findings highlight the significant benefits of incorporating digital teaching materials into literature courses at the university level. One key implication of these findings is that digital teaching materials serve as effective tools for engaging learners and fostering deeper comprehension of literary concepts. Digital resources not only enhance learners' understanding of literature concepts but also improve their academic performance, engagement, research ability, and overall success in literature studies. Moreover, the positive correlation between the use of digital resources and learners' academic performance suggests that technology-enabled pedagogical approaches can yield tangible benefits in terms of students' achievement in literature courses. The accessibility of digital resources enables learners to access a wealth of information, analyze literary texts

more critically, and develop higher-order thinking skills essential for academic success. These findings underscore the importance of embracing technology-enabled pedagogical approaches to create innovative and impactful learning environments that empower students to excel in their academic pursuits.

In an interview with the lecturers, the researcher asked them how do they assess the impact of digital teaching materials on student engagement, comprehension, and critical thinking skills in their literature courses? Are there any specific assessment methods or indicators that they use to evaluate the effectiveness of digital resources in improving learner academic performance? *L1 respondent had to say that "I utilize a combination of qualitative and quantitative assessment methods. Firstly, I observe students' interactions with digital resources during class activities and assignments to gauge their level of engagement. This could involve monitoring participation in online discussions, responses to multimedia content, and use of interactive features within digital platforms.*

For comprehension, I often incorporate formative assessments such as quizzes, reflective journals, or short writing assignments that require students to apply their understanding of literary concepts presented through digital materials. These assessments help me identify areas where students may need additional support or clarification and provide insight into their comprehension of the material.

To evaluate critical thinking skills, I design assignments and projects that require students to analyse, evaluate, and synthesize information from digital resources. This could involve tasks such as creating multimedia presentations, conducting literary analyses using digital tools, or engaging in collaborative online discussions where students are required to defend their interpretations of literary texts (Interviewee 2, 2024)."

The lecturers' responses are similar to learners' responses about the use of digital teaching materials in enhancing academic achievement of the learners. These findings are similar to that of Marc (2022) who noted that the application of digital learning material such as Internet-based training, web-based training, or on-line learning, network learning, distance learning is as effective as classroom courses.

CONCLUSION

In conclusion, this study explored the relationship between digital teaching materials on performance of learners in literature in public universities in Kenya. The study highlights the consensus among Literature learners and lecturers on the positive impact of digital teaching materials on performance and overall success in Western Kenyan universities. Both groups acknowledge the significance of digital resources in enhancing comprehension, engagement, research ability, and learner success in literature courses. However, challenges such as technological infrastructure and quality control need to be addressed for optimal integration and effectiveness. The study highlights the significant positive impact of digital teaching materials on Literature learners' performance in Western Kenyan universities

RECOMMENDATIONS

Educational institutions should prioritize addressing challenges related to technological infrastructure and quality control to ensure effective integration and utilization of digital teaching materials in literature education. This includes investing in robust technological infrastructure and implementing quality control measures to enhance the accessibility, usability, and reliability of digital resources.

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