



Influence of Digital Skills on Adoption of Digital Learning of English Language During COVID-19 Pandemic in Kapseret Sub-County, Kenya

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Abstract

The COVID-19 pandemic brought unparalleled disruptions to education systems worldwide, compelling a rapid shift from traditional classroom-based learning to digital learning platforms. In Kenya, the adoption of digital learning, particularly for English language instruction, faced unique challenges and opportunities influenced by the digital skills of both students and teachers. This study therefore assessed the influence of digital skills on the adoption of digital learning of the English language during COVID-19 pandemic in Kapseret Subcounty, Kenya. Social Cognitive Theory and Diffusion Innovation theory guided the study. The study utilized a descriptive research design, targeting a total of 2,173 respondents from the 32 high schools in Kapseret Subcounty. Using Nassiuma's (2000) formula, 11 schools were selected for the study. A stratified random sampling procedure was employed to choose 7 public secondary schools and 4 private secondary schools. Krejcie and Morgan's (1970) formula was used to determine a sample size of 327 Form three students, English teachers and headteachers from 7 public secondary schools and 4 private secondary schools. Students and teachers were selected using simple random sampling. Data was collected using questionnaires while semi-structured interview schedule was used to collect information from the head teachers. Collected data was analyzed using descriptive and inferential statistics. The study found that 70.1% of students rated their digital skills as fair to very good, while 29.9% rated them as poor



or very poor. Most students (86.9%) acquired these skills through interactions with friends and personal effort, 7.8% through trial and error, and 5.3% from computer lessons at school, primarily among those studying computer science. Among English teachers, 71.5% reported lacking competence in using digital tools for teaching, with 85.7% having received no formal training. Additionally, 76.5% of students indicated they had not undergone any training for remote learning. The study revealed a significant relationship between digital skills and the adoption of digital learning for English during the COVID-19 pandemic in Kapseret Subcounty, Kenya ($\chi^2=0.042$, $N=196$, $p<0.05$). The findings highlighted a significant relationship between digital skills and the adoption of digital learning for English during the COVID-19 pandemic. The study recommends that both students and teachers should receive formal training to enhance their digital skills, focusing on the effective use of educational technologies for teaching and learning. Further, Ministry of Education should ensure that schools should ensure equitable access to digital devices and reliable internet connectivity to support all students and teachers in adopting digital learning methods.

Keywords: Digital Devices, Equitable Access, Digital Skills, English, Adoption

Introduction

English language learning and instruction a core part of the Kenyan curriculum relies heavily on interactive activities such as discussions, debates, and collaborative projects, which are challenging to replicate in a digital format without adequate digital skills (Njagi, 2020; Mbithe, 2014; Wekesa, 2020). However, the integration of digital tools also presented opportunities to enhance English language instruction. Digital platforms provided access to a wide range of resources, including e-books, online exercises, and interactive language games, which could enrich the learning experience if utilized effectively (Ikpeze, 2018; Asim et al., 2020). However, digital literacy and skills are key for the successful adoption and implementation of digital learning (Fleaca & Stanciu, 2019).

Digital literacy refers to the skills and capabilities needed to live, learn and work with technologies like computers, tablets, smart phones and associated internet platforms, social media, portals and learning management systems (Maphosa & Bhebhe, 2019; Ibrahim, Shariman & Woods, 2013; Liu et al., 2020). Digital literacy enables an individual to find, evaluate digital resources and make proper use of them (Ozdamar-Keskin et al., 2015; Ukwoma, Iwundu & Iwundu, 2016). According to Sutter and Kihara (2019), digital literacy is key for both instructors and learners for any meaningful



digital engagement. Simply put, both the learners and the instructors must be digitally literate. According to Yu, Lin and Liao (2017) knowledge and skills influence adoption of technology and that ICT adoption behavior is pegged on and also moderated by information literacy and digital skills. They conclude that knowledge and skills are necessary for proper access to and embrace of technology.

Even prior to COVID-19 many developed countries had adopted distance learning as a viable option and students continued to engage with educators in formal schooling taking advantage of digital learning portals. Indeed, distance learning has been part of American culture for over 100 years and in the last two years over 6 million enrolments were recorded (Cohen, 2020). Following suit, distance learning awareness had been initiated by governments for parents, teachers, administrators and students.

Many countries were trying to keep their children learning by transitioning from physical to virtual classrooms (Nyariki, 2020). Some schools in Seychelles, Egypt, Morocco, Rwanda and Kenya offered online classes attended by some learners amidst difficulties of clarity, connectivity. However, many schools in Africa did not offer online classes due to challenges of access to radios, television, computers, internet, data and electricity leaving many students unable to engage in remote learning. (William, 2020).

The outbreak of the novel corona virus pandemic disrupted school programs in an unprecedented manner (Orville, 2020) way beyond the experience of other infectious diseases like Ebola and Sars. The global pandemic indeed surpassed all other socio-economic and environmental disasters in disrupting school programs leaving schools closed for extended periods, with teachers and learners observing the 'stay-home-stay-safe' advisory by several governments (WHO, 2020). According to Garcia, Franchino and Muñiz, (2020), the abrupt and indefinite closure of schools left many unknowns about how to ensure continuity of learning for students. It is notable that most schools had rolled out their annual calendar of events for the academic year and were already implementing the same when the sudden disruption emerged.

Extended closure of educational institutions during pandemic saw schools suspend physical learning and all other school activities and operations forcing learners and their teachers out of schools, presumably to continue to engage remotely (Sweney, 2020). But issues of access to the alternative mode of operation in terms of educational technologies and the ability of teachers and students to utilize them in an inclusive and equitable manner to mitigate the negative impact of the pandemic may not be wished away. While the pandemic has exposed the digital divide across nations, institutions and households, it has also made urgent the need to fully embrace



digital technologies to facilitate learning beyond the traditional classroom (Bhamani, 2020).

Key to successful learning, is constant access to relevant digital devices, appropriate content, possession of digital skills and access to technical support coupled with an enabling environment that supports interaction between instructors and learners, and between learners and their peers (British Council, 2020). Despite the availability of creative, and innovative technologies, meaningful learning stops with school closure for most students. Specifically, language learning calls for spontaneity, consistency, persistence and practice for proper mastery, fluency and accuracy; something that may not be available to majority of learners shut out of school. Garcia, Franchino and Muñiz (2020) think the challenges may be exacerbated for English learners especially in addressing all the four domains of language development: reading, writing, speaking, and listening.

Whereas digital learning, exalted as fun, more captivating and less time consuming, has been available for long, the adoption is yet to be optimized globally despite the tremendous developments in educational technologies and allied software solutions for learners and teachers. A survey by KNBS (2020) shows that in one out of every six households no learning took place at all during COVID-19 induced school closure, yet in March 2020 the Kenya government directed that learners undertake online learning or technology mediated learning on TV, radio, ed-apps and mobile phones.

Tonder (2019) has observed that Kenya is encountering difficulties in incorporating technology into its secondary schools. The challenges identified include inadequate access to electricity, insufficient infrastructure, poor connectivity, and a lack of skills required to comprehend the interplay between technology, its application in teaching, and content development. With nearly all schools currently connected to the national electricity grid (Ministry of Education, 2020) and many having invested in computer labs and other digital equipment, it is expected that efforts should be geared to equip both teachers and learners with appropriate skills to enable digital learning. This study therefore sought to assess the influence of digital skills on the adoption of digital learning of the English language during COVID-19 pandemic in Kapseret Subcounty, Kenya.

Theoretical Framework

Diffusion Innovation Theory

The Diffusion Innovation Theory (DIT), formulated by E. M. Rogers in 1962, elucidates how ideas or products permeate and spread throughout a given population or social system over time (Nguyen, 2020; García-Avilés, 2020; Shiels, 2018). Adoption of innovation, marked by individuals embracing



novel ideas or products, hinges on their perception of novelty and innovativeness (Morgan, Obal & Anokhin, 2018). This process unfolds gradually, with certain individuals exhibiting a propensity to adopt innovations earlier than others. The theory categorizes individuals into five adopter groups—Innovators, Early Adopters, Early Majority, Late Majority, and Laggards—each with distinct characteristics and adoption behaviors (García-Avilés, 2020). This theory was relevant in examining the influence of digital skills on the adoption of digital learning for the English language during the COVID-19 pandemic in Kapseret Subcounty, Kenya.

Social Cognitive Theory

The study was also based on social cognitive theory by Albert Bandura (2009). The theory proposes that learning continually occurs through social interactions and influences from the community, media and the Internet. Numerous opportunities exist for people to enhance their learning through social interactions online. They include global networking, educational games, innovative apps and ebooks. Continual technological advancements enhance social learning in exciting and motivating ways. Experiments have proven that social influences including the media and internet have adverse effects on people because learning and meaning construction occur continually through one's lifetime.

The social cognitive theory was deemed relevant to this study due to the fact that it drew on both cognitive and behavior influences and benefits from technology. Indeed, the theory thrives on the advancement of new technologies because of their ability to provide new and innovative methods to create social learning environments whether immediate or distant. The rapid pace of informational, social, and technological change is placing a premium on personal efficacy for self-development and self-renewal throughout the life course (Bandura, 2001; 2009)

The theory acknowledges the presence and ongoing advancement of various technological tools, commonly known as educational technologies, such as digital devices and related applications, which have an impact on distance learning activities. The dynamic nature of the educational, technological, and social environment necessitates the acquisition of appropriate competencies and expertise, reinforced by ongoing training, to ensure that users remain current and competitive. The COVID-19 pandemic has resulted in the development of various technological products aimed at facilitating the continuation of academic activities for both educators and students. Therefore, possessing adequate skills is of utmost importance in facilitating optimal resource utilization and mitigating any negative attitudes that may impede the effective implementation of digital English language learning.



Methodology

This study employed a descriptive research design, targeting 2,173 respondents in Kapseret Subcounty, including 2,092 Form Three students, 49 English teachers, and 32 head teachers from 32 high schools (13 private and 19 public). Using Nassiuma's (2000) formula, 7 public and 4 private schools were sampled through stratified random sampling. Krejcie and Morgan's (1970) formula determined a sample size of 327 respondents. Students were selected via simple random sampling, while teachers and head teachers were chosen using purposive sampling. Data was collected using closed-ended questionnaires for students and English teachers, and semi-structured interviews for head teachers. A pilot study was conducted in Kesses, a neighboring subcounty, to test the reliability of the research instruments using the test-retest technique. The Pearson Product-Moment Correlation Coefficient yielded an r value of 0.74, indicating strong reliability. Data analysis included descriptive statistics and correlation analysis to determine the relationship between dependent and independent variables, with a 95% confidence level and a significance threshold of 5%.

Results and Discussion

Demographics of the respondents

The majority of responders 281(94.0%) were form three pupils, compared to 7(2.3%) English teachers and 11(3.7) head teachers, some of whom were also English instructors. In terms of gender, male students outnumbered females by 134(47.7%), but male teachers surpassed females by 3(43.9%) to 4(57.1%). The head teachers were made up of 6 (54.5%) males and 5 (45.5%) females. In general, there were more female students and female English teachers in Kapseret Sub County than male counterparts. In the Sub County, however, there were more male head teachers than females. The majority of the students in the study, 272 (96.8%), were between the ages of 16 and 18, with 7 (2.5%) between the ages of 13 and 15. The teachers' ages ranged from 21 to 60, with the majority, 9 (50%) being between 41 and 50.

Digital Skills and Adoption of DLEL in Kapseret Subcounty, Kenya

This study assessed various factors pertaining to teachers and their students, including digital skills, digital skills acquisition, teacher competence in working with digital devices, training for remote learning, technical support for remote learning and digital training sponsorship. The findings are presented in Table 1.



The study sought to establish the level of skills the respondents had for effective use to facilitate learning. Table 1 above shows that majority of the student respondents considered their digital skills as fair, good and very good at 93 (33.1%), 76 (27%) and 28 (10%) respectively while another 56 (19.9%) and 28 (10%) indicated that their digital skills were poor and very poor respectively. the results were in agreement with the general knowledge that today's youth are indeed 'digital natives' who can easily work with any devices and apps with little or no prior experience. The researcher believed that though the respondents had the skills, such were only very basic and needed to be sharpened and made relevant by proper training. According to Yu, Lin and Liao (2017) knowledge and skills influence adoption of technology and that ICT adoption behavior is pegged on and also moderated by information literacy and digital skills. They posit that knowledge and skills are necessary for proper access to and embrace of technology.

Table 1: Digital Skills and adoption of DLEL in Kapseret Subcounty, Kenya

Questions	Respondents	Response	Frequency	Percentage
Digital Skills	Students	Very good	28	10.0
		Good	76	27.0
		Fair	93	33.1
		Poor	56	19.9
		Very Poor	28	10.0
		Total	281	100.0
Digital Skills acquisition	Students	Trial and Error	22	7.8
		Interaction with friends	141	50.2
		School lessons	15	5.3
		Personal Effort	103	36.7
		Total	281	100.0
Teacher Competence in working with digital devices	Teacher	Strongly Agree	1	14.3
		Agree	1	14.3
		Disagree	2	28.6
		Strongly Disagree	3	42.9
		Total	7	100.0



Training for remote learning	Students	Yes	66	23.5
		No	215	76.5
		Total	281	100.0
Technical Support for remote learning	Students	Yes	12	4.3
		No	269	95.7
		Total	281	100.0
	Teachers	Yes	1	14.3
		No	6	85.7
		Total	7	100.0
Digital Training Sponsorship	Teachers	School	0	0.0
		Government	0	0.0
		Self	1	14.3
		None	6	85.7
		Total	7	100.0

The student respondents were further asked to indicate how they acquired the digital skills. Table 1 above shows that majority of the respondents acquired digital skills through interaction with friends, 141 (50.2%) and personal effort 103 (36.7%). The rest, 22 (7.8%) acquired the skills through trial and error and only a marginal 15 (5.3%) did so through lessons offered in schools. The study concurred with Wan (2012) who found out that the younger, 'dot.com' generation was capable of learning and making use of unfamiliar technologies.

The teachers were asked to indicate the extent to which they agreed with the statement that they were competent to use digital devices to prepare, teach and evaluate students. Table 1 above shows that majority of the teachers 3(42.9%) were not competent in using digital devices to prepare, teach and evaluate students. The responses indicate the need for a concerted effort to ensure teachers and students and competent to make the best of the digital devices to facilitate learning. The findings agree with McCallum and Jeffrey (2014) that digital knowledge and skills were a necessary prerequisite for teachers' adoption of digital learning.

The respondents were further asked whether they had undergone any training to formally prepare them for remote learning. Table 1 above shows that only 66 (23.5%) of the student respondents had undergone training for digital learning whereas 215 (76.5%) had not. This implies that though some students had good digital skills, such would not be very useful in remote learning unless made contextually relevant.

The student respondents were again asked whether they had access to any technical support while learning from home. Table 1 above indicates



that only 4.3% (12) of the students had access to technical support facilitating remote learning while 95.7% (269) had no access to any technical support. It was noted that only those students whose schools had subscribed to Learning Management systems accessed technical support. The responses resonated well with those of teachers of English of whom only one indicated that they had access to technical support.

The teacher respondents were asked whether they had undergone training on digital teaching of English Language and the findings in 1 above indicted that an overwhelming 85.7% of the teachers had not undergone any training on digital teaching of English Language thereby raising concerns on their ability to facilitate digital learning of the English Language efficiently and effectively. The results exposed the urgent need to train the teachers use technology and incorporate digital tools in their learning plans.

Further, the study sought to know who had sponsored the teachers who responded as having undergone training on digital teaching of English Language. Table 1 above shows that neither the school nor the government had provided sponsorship and that the single respondent had undergone the training through self-sponsorship. The responses were in agreement with Nuemeyer and Santos (2020) who opine that proper skills, knowledge and experience help to overcome barriers to technology. They point out that where users lack requisite knowledge and skills, they shy away from and are reluctant to adopt new technology.

Relationship Between Digital Skills and its Adoption in Learning English Language

Table 2 below present Pearson Chi-Square results on the relationship between digital skills and adoption of digital learning of the English language during COVID-19 pandemic

Table 2: Chi Square Tests on relationship between digital skills and adoption of digital learning of the English language during COVID-19 pandemic

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.45a	2	.006
Likelihood ration	9.16	2	.013
Linear-by-linear association	.623	1	.024
N of Valid cases	196		

The findings presented in Table 2 indicate a significant relationship between digital skills and the adoption of digital learning for the English



language during the COVID-19 pandemic ($\chi^2=0.006$, $N=196$, $p<0.05$). This suggests that students and teachers with higher levels of digital proficiency were more likely to effectively engage with digital learning platforms. As digital learning became a necessity during the pandemic, those with better digital skills could navigate online resources, participate in virtual classes, and utilize educational technologies more effectively, thereby ensuring continuity and quality of education amidst the disruptions.

Conclusion and Recommendation

Majority of students, comprising 70.1%, reported possessing fair to very good digital skills, while 29.9% rated their skills as poor or very poor. Conversely, a significant proportion of English teachers, representing 71.5%, expressed a lack of competence in utilizing digital devices and apps for teaching purposes, with 85.7% having not received formal training in this regard. Similarly, 76.5% of student respondents affirmed their lack of training in facilitating remote learning. The study also identified a significant relationship between digital skills and the adoption of digital learning for the English language by both students and teachers. This finding emphasizes the importance of enhancing digital literacy among both students and educators to facilitate the transition to digital learning environments and improve educational outcomes during similar future disruptions. The study recommends that both students and teachers should receive formal training to enhance their digital skills, focusing on the effective use of educational technologies for teaching and learning. Further, Ministry of Education should ensure that schools should ensure equitable access to digital devices and reliable internet connectivity to support all students and teachers in adopting digital learning methods.

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