

Digital Device Ownership, Digital Literacy and Information Technology Learning Self-Efficacy of Junior High School Students

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ABSTRACT

The study focused on junior high school students' digital ownership, digital literacy, and information technology learning self-efficacy. It employed a descriptive survey research design and selected 70 JHS 3 pupils from Ayifua St. Mary's Anglican Basic School using simple random sampling. Data collection was through questionnaires, and analysis involved descriptive and inferential statistics like frequency counts, percentages, means, standard deviations, multiple regression analysis, and independent samples t-test. Findings indicated a moderately high level of information technology learning self-efficacy among students, limited digital device ownership except for flash drives, moderate digital literacy skills, and a positive but moderate relationship between digital ownership, literacy, and self-efficacy. Recommendations included providing ICT facilities and training for teachers to integrate modern technology effectively

INTRODUCTION

The significant advancement in technology has influenced nearly every aspect of human life. Among the most notable inventions of the twenty-first century are digital gadgets including laptops, smartphones, tablets, and telephones, as well as Internet-enabled devices that include computer software and apps (Foen, Hassan, Nor & Malek, 2017). Digital devices are now a commonplace aspect of daily life for everyone. People all over the world have embraced this innovative and fascinating technology as one of the most essential amenities in their daily lives, and it is now being used to further development initiatives in the fields of business and industry, agriculture, health, military, and, most of all, education (Fawareh & Jusoh, 2017).

This is conceivable since there are a lot of individuals who own digital gadgets all around the world, especially in Ghana and Africa and especially among young people. In her study "Mobile statistic report of 2014-2018," Radicati (2014) projected the number of mobile users worldwide to be 6.08 billion in 2017 and climb to 6.2 billion by 2018. He continued that there will be 10.8 billion mobile devices worldwide in 2017 and that number would climb to 12.1 billion by 2018, (Radicati, 2014).

Due to a number of advantages or benefits connected with digital devices, most individuals, including students, like to use them to complete various development chores, including those relating to academic concerns. Mobile phones, and smart phones in particular, are readily available, manageable, and reasonably priced (Kljunic & Vukovac, 2015). Importantly, digital devices like smartphones have a variety of specialized built-in or downloadable apps like games, web browsers, music and video players, personal organizers and calendars, web services like YouTube and Flickr, productivity apps like word processors, news feeds, email and social networking apps, as well as many other practical and entertaining tools. Google Play (for android devices) and the iTunes App store (for the iPhone) are the two most popular app stores. Many apps are actually available for free or are fully ad-supported, despite the fact that it is labeled a market.

The proliferation of digital gadgets has significantly changed education in industrialized countries, with developing countries being no exception (Tagoe, 2014). The spread of these facilities has altered the way that people learn, so that people are no longer completely dependent on written sources. The development of digital gadgets, which allow learning to occur regardless of place or time, was facilitated by the introduction of the internet.

Due to their perceived usefulness, including their perceived affordability, flexibility, readiness, popularity, and other practical features, the majority of educators have adopted the use of cellphones for teaching (Ismail, Bokhare, Azizan, & Azman, 2013; Pullen, Swabey, Abadoo, & Sing, 2015). The adoption of smartphones has already reached critical mass in developed economies, according to Groupe Speciale Mobile Association (GSMA) (2015), with half of the world's population having a mobile subscription. Although the use of cellphones among students is growing, it is still unclear to what extent this technology has boosted their confidence in using information technology. Students in Malaysia

weren't prepared for mobile learning in this instance (Akkan, Cakirglu, & Güven, 2012). As a result, smartphone is not a learning tool (Collins, 2019). According to research by Woodcock, Valk, Rashid and Elder (2012), students were consistently seen using their phones more for entertainment than for academic purposes.

Over the years, several studies have assessed Bandura's self-efficacy construct (Shunck, 2014; Eccles, 2019; Britner & Pajares, 2016). Self-efficacy, according to Bandura (1986), almost gives the person the feeling that success in a particular field is practically assured even before the act is started. In fact, he believes that there is a significant difference between people who have high self-efficacy and those who have low self-efficacy in terms of how they feel and behave (low self-efficacy). People who doubt their own talents tend to steer clear of demanding and tough tasks. According to Bandura (1989), those who are unsure of their ability are less likely to take on challenging undertakings.

Refreshingly, numerous studies have been carried out to examine and investigate how children's psychosocial functioning is influenced by their level of self-efficacy (Shunck, 2014; Eccles, 2019; Britner & Pajares, 2016). The results show that self-efficacy beliefs have a considerable influence on an individual's performance and motivation. In actuality, people who have high levels of self-efficacy are more likely to carry out tasks successfully. Self-efficacy is one of the most significant factors influencing students' academic achievement, according to social cognitive theorists. Collins (2019) notes that it is crucial to recognize the impact of self-efficacy beliefs and skill use on academic success. According to his research, people may not always perform poorly on assignments because they lack the potential to achieve, but rather because they lack confidence in their talents. Intellectual aptitude and motivation are key influences on academic performance, according to Bandura (1986). Self-efficacy affects a person's decision to choose and commit to an activity, the energy expended in executing it, and the level of performance (Bandura & Schunk, 1981; Bandura, 1986; Hackett & Betz, 1989). Self-efficacy is a significant factor in predicting a person's conduct. Regardless of their mediating effects on self-efficacy beliefs, Bandura (1997) notes that attitude and gender are influential to some degree for some persons. According to Mbathia (2015), strong academic achievement affects students' decisions as well as their admittance to college or university. According to Pajares' (2010) research, girls start to underestimate their abilities in the seventh grade despite though their performance is worse than that of the boys.

Self-efficacy with regard to these digital learning tools seems to be related to how frequently they are used. This was seen in educators who had never integrated technology in their teaching. The more proficient they were, the more eager they were to incorporate that technology into their work. According to Akkan, Cakirglu, and Güven (2012), students may be more likely to use digital technology widely if they receive effective training in using it, as opposed to presuming their fluency. This is similar to the teachers described above. Nevertheless, this discovery raises the question: Does proficiency with a particular device or collection of technologies increase interest, or does the opposite hold true—that is, does interest in a device or set of technologies increase proficiency? In order to examine the impact of web-based instruction

applications on school culture, Akkan et al. (2012) conducted a case study with 31 student participants using qualitative and quantitative approaches. Surveys, interviews, and classroom observations revealed that as students utilized technology and digital devices more frequently, their interest also seemed to rise.

Rovai and Jordan (2014) note that self-motivation is a prerequisite for success in distance education, a branch of contemporary education that is built on the use of digital technology, including powerful learning management systems (LMS) and more compact digital learning tools like social media and other applications. A learner simply won't strive toward overcoming their digital deficiencies if they have a fear of technology, which is frequent among adult learners or even younger learners whose lives are less touched by digital technology (Rovai & Jordan, 2014). When responding to new educational technologies, students and teachers exhibit a range of emotions. These feelings range from exuberance to paralyzing fear, and a wide range of feelings in between (Collins, 2019). Tech-averse or change-averse learners will probably struggle since they might not be motivated to get past their anxieties and discomforts.

Libraries are becoming more automated to offer users electronic information resources (EIRs) and services as a result of the transition from printed to electronic information resources (EIRs). According to Kay and Ahmadpour (2015), students must acquire the abilities necessary to access, assess, manage, and utilize information on digital devices effectively and efficiently as the quantity of digital resources grows. As a result, it is advantageous for students to be technologically literate because it will make finding EIRs easier. This is so that only students who possess an adequate level of digital literacy can access, retrieve, and use the digitized or EIRs. Since electronic resources are a manifestation of works that need the use of digital devices for access, the significance of digital literacy for accessing EIRs cannot be overstated. On digitally linked devices like computers, tablets, smartphones, etc., EIRs can be accessed. Users now primarily use digital devices like smart phones, tablet PCs, and e-readers to access electronic content, according to Song (2012). This shows that without sufficient digital literacy abilities and the self-assurance to use the gained skills, students cannot access and use EIRs wisely. Otokunefor (2015) defined digital literacy as a person's level of digital knowledge and the extent to which that information may be applied to solve problems. Digital literacy, according to Abubakar and Adetimirin (2015), is the ability to use digital tools and apps. Students would be able to access, use, and transmit information with the help of digital literacy skills, which are recognized as a necessary competency for active involvement in our modern world.

LITERATURE REVIEW

Social Cognitive Theory

The social cognitive theory (1977) provides the theoretical underpinning for this study. The social cognitive theory (1977) was developed by Albert Bandura in 1977. This theory emphasizes the interaction between behavior and environment, focusing on behavior patterns the individual develops to deal with the environment instead of instinctual drives. Self-efficacy is a construct which carries so much potency and almost equips the individual with limitless potential in him or herself was forged from Bandura's (1977) social cognitive theory. Self-efficacy symbolizes a strong belief in one's capabilities to organize and execute the courses of action require to produce given attainments. The effects to self-efficacy beliefs on cognitive processes take a variety of forms. It is interesting to note that most human behavior which is purposive is regulated by fore-thought found in organized goals. Personal goal setting is influenced by self-appraisal of capabilities. This means, the stronger the self-efficacy, the higher the goals people set for themselves and the firmer their commitment to such goals (Bandura, 1977).

Conceptual Review

The Concept of Digital Device Ownership

There is a range of digital devices commonly owned and used by students. These devices include laptop and Smartphone or tablets (Sharples et al., 2014); cell phones (Witecki & Nonnecke, 2015). Compelling reasons such as convenience of getting connected to educational resources via portable devices may not be the only reason for device ownership. Other reasons include students' ability to access news, calls, instant messaging, surfing, gambling, social media and data storage (Barry, Murphy & Drew, 2015).

The Concept of Digital Literacy

The digital world is greatly transforming how we learn, communicate and socialise, so it is imperative that technology-rich learning environments are developed and embraced (Groff, 2013). Lai and Hong (2015) enquire whether the integration of mobile technologies and applications can potentially address the digital capability and proficiency levels of the current generation of technology users born after the year 1985. The current generation are not all confident users of new and emerging technologies and do not participate in the creation of personalised communications with others through Web 2.0 activities (Attewell & Hughes, 2010). Digital literacy can pose challenges for the user of Web 2.0 in learning contexts as students need adequate proficiency to effectively and efficiently use the tools (Bower, 2016; Terras & Ramsey, 2012). Valtonen's (2009) study using the theory of reasoned action and planned behaviour (Ajzen, 1991) of 337 Finnish high school students' readiness to adopt online learning highlight students' lack of knowledge about online learning alongside using social media platforms and Web 2.0 technologies

The Concept of Information Communication Technology

Information Communication Technology (ICT) is an interdisciplinary science mainly concerned with the collection, manipulation, classification, storage, retrieval and dissemination of information. According to Ezekoka (2017), ICT is a means of receiving or accessing, transforming, processing, storing and

sending ideas, perception or information through computer and their telecommunication facilities. Abimbade (2016) also viewed ICT as a concept, method, function, process or system of collecting, analyzing, processing and sharing of information using electronic equipment. ICT includes all that is involved in modern communication satellites, television, radio, video, tape recorders, floppy diskettes, compact discs, personal computers and other related equipment so that, the output generated can get to the user in good time and at reasonable cost to the overall benefit of mankind.

Computer Technology usage in Classroom Instruction

Integrating ICT into teaching and learning is the process of determining the kind of products and processes of ICT appropriate for a given teaching and learning situation and problem (Ifegbo, 2015). With regard to the use of ICT for teaching purposes, the lecturer is expected to acquire competencies and expertise on how to utilize ICT for effective lesson delivery. In the teaching and learning process, the student, the teacher, the curricular contents, the methods and the specified objectives all interact in the teaching and learning process to achieve the expected result

According to Ukwungwu (2014), the integration of ICT into the curriculum demands the availability of teachers who are knowledgeable in ICT tools and its application and these teachers are trained teachers with expertise in computer operations and developing of suitable software. The ability of the teacher to set up the ICT tools correctly influences how the teacher uses these ICT tools in the teaching process. When a teacher is able to blend the selection of appropriate tools with the appropriate strategies and activities to teach ICT enhanced lessons, learning also becomes easy to be achieved as explained by Graham (2011).

The Concept of Self-efficacy

The importance of self-efficacy as a key factor among students in achieving academic excellence is becoming increasingly understood. Self-efficacy research explains how and why individuals perform differently at various tasks within a range of complex environments including academic and computing performance domains (Miltiadou & Savenye, 2013). Bandura (1986), credited with introducing the concept of self-efficacy in the area of social psychology defined self-efficacy as a conception that one nurtures about his/her own personal beliefs in one's capabilities to achieve a given level of performance". Similarly, Lee and Mendlinger (2011) defined self-efficacy as a personal perception on the capability to perform a particular task. Self-efficacy can also be seen as the confidences that people have in their ability to perform a particular task. Thus, Sharma and Nasa (2014) defined self-efficacy as an individual's confidence in his or her ability, which may impact the performance of a task. Therefore, self-efficacy is the belief in one's capability to execute the actions required to attain a goal, and, as such, is an attribute of confidence/self confidence. Confidence in one's ability directly affects once performance. It is "simply a self perceived measure of one's belief in one's own abilities, dependent upon contextual background and setting (Leigh, 2008:8).

Conceptual Framework

Independent Variable

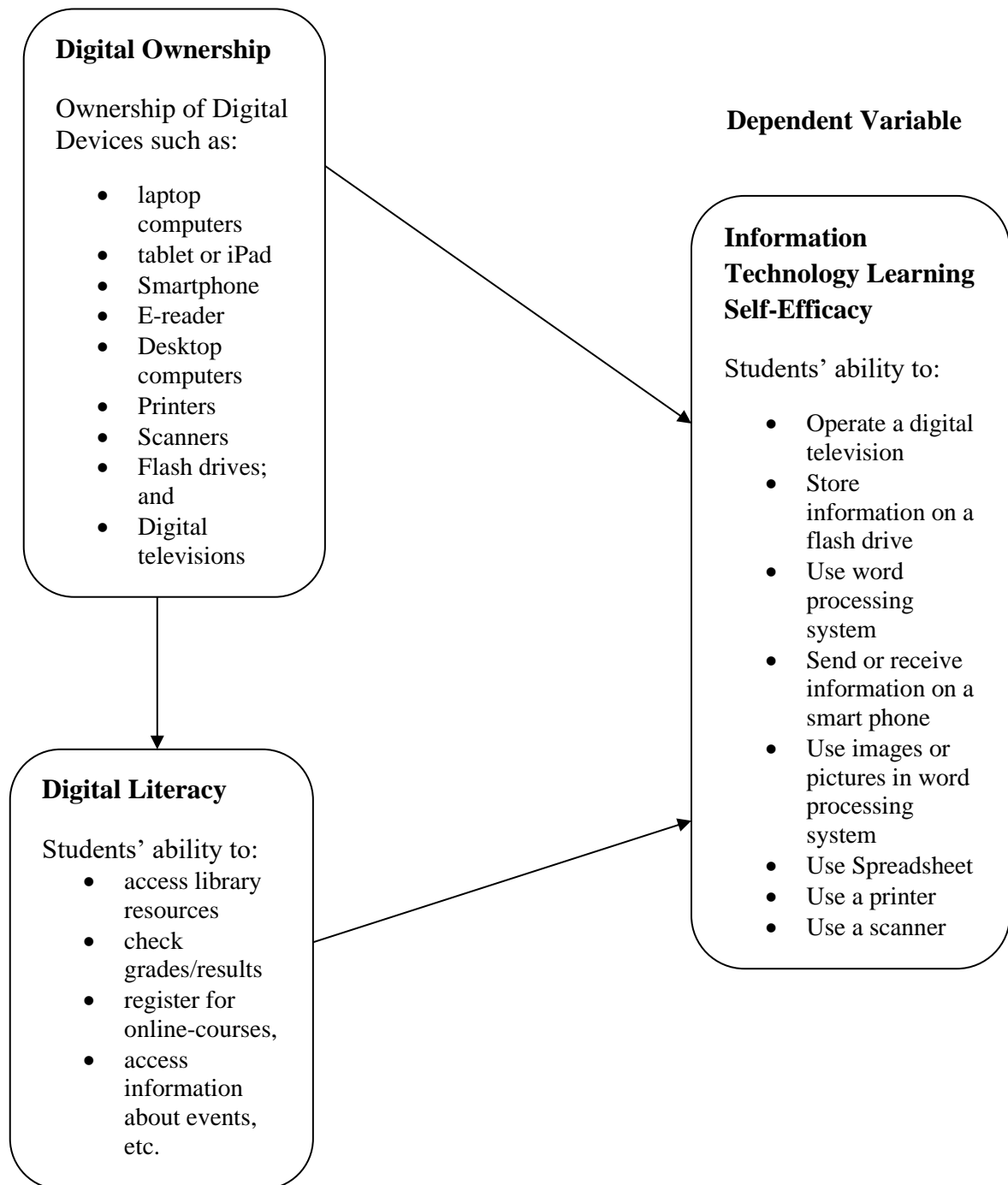


Figure 1. Conceptual framework on digital ownership, digital literacy and information technology learning self-efficacy among students
Source Author's Own Construct (2023)

Conceptual framework represents researcher's synthesis of literature on how to explain a phenomenon. Thus, the researcher's "map" in pursuing the investigation and how the research problem would be explored. According to Imenda (2014) and Regoniel (2015), conceptual framework maps out the actions

required in the course of the research given the researcher's previous knowledge of other researchers' point of view and his observations on the subject of research. Based on the social cognitive theory (1977) by Albert Bandura, a conceptual framework has been developed for the current investigation.

Figure 1 shows the conceptual framework of digital ownership, digital literacy and information technology learning self-efficacy among students. The conceptual framework contains three (3) key variables: Digital Ownership (DO); Digital Literacy; and Information Technology Learning Self-Efficacy (ITLSE). The framework shows how information technology learning self-efficacy is influenced by a number of variables such as: Digital Ownership (D) and Digital Literacy (DL). The independent variables (Digital Ownership (DO) and Digital Literacy (DL) of the study may influence the dependent variable (information technology learning self-efficacy) of the study.

From Figure 1, digital ownership (i.e. ownership of digital devices such as laptop computers, tablet or iPad, Smartphone, E-reader, desktop computers, printers, scanners, flash drives and digital televisions) influences both digital literacy skills of students (i.e. ability to access library resources, check grades/results, register for online-courses, access information about events, student activities and club/organizations, read e-texts, communicate with other students about class related matters outside class, etc) and information technology learning self-efficacy (i.e. students' ability to: operate a digital television, store information on a flash drive, use word processing system, send or receive information on a smart phone, use images or pictures in word processing system, use Spreadsheet, use a printer, use a scanner, etc) among students. Again, digital literacy skills of students (i.e. ability to access library resources, check grades/results, register for online-courses, access information about events, student activities and club/organizations, read e-texts, communicate with other students about class related matters outside class, etc) may also affect the information technology learning self-efficacy (i.e. students' ability to: operate a digital television, store information on a flash drive, use word processing system, send or receive information on a smart phone, use images or pictures in word processing system, use Spreadsheet, use a printer, use a scanner, etc) among students.

METHODOLOGY

Research Design

The study used a descriptive research design to quantitatively investigate the impact of digital device ownership and digital literacy on the information technology learning self-efficacy of junior high school students at Ayifua St. Mary's Anglican Basic School in the Cape Coast Metropolis. Descriptive research involves collecting data to understand the current status of a phenomenon, providing statistics and insights into people's experiences.

Population

The population comprised all junior high school students at Ayifua St. Mary's Anglican Basic School during the 2022/2023 academic year, totaling 84 students.

Sample and Sampling Procedures

A sample size of 70 JHS 3 pupils was determined using Krejcie and Morgan's (1970) table for determining sample size from a given population. Simple random sampling, specifically the lottery method, was used to select participants, ensuring each student had an equal chance of selection.

Data Collection Instrument

Data were collected using a questionnaire comprising 35 close-ended items, structured into four sections (A, B, C, & D). Sections covered background characteristics, information technology learning self-efficacy, digital ownership, and digital literacy skills.

Validity and Reliability of the Instrument

The questionnaire's construct and content validity were assessed through item development from literature, feedback from colleagues and a supervisor, ensuring clear and relevant questions. Reliability was tested via pilot testing and yielded a Cronbach's Alpha value of 0.73, indicating good reliability.

Data Collection Procedures

Permission was obtained from school authorities, and written consent was obtained from participants. Questionnaires were administered personally, with verbal consent, and retrieved on the same day to ensure a high return rate.

Data Processing and Analysis

Data were coded and analyzed using descriptive statistics (frequencies, percentages, means, and standard deviations) and inferential statistics (multiple regression analyses and independent samples t-test) to address research questions regarding the influence of digital device ownership and digital literacy on IT learning self-efficacy.

RESEARCH RESULT

Table 1. Multiple Regression Analysis on the Influence of Digital Device Ownership and Digital Literacy on Information Technology Learning Self Efficacy of Students

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	18.925	5.197		3.641	.001
Digital Ownership	.221	.180	.153	1.227	.224
Digital Literacy Skills of Students	.712	.203	.436	3.509	.001

Source: Field Data, 2023

The multiple correlation coefficients 0.000 measure the degree of relationship between the actual values and the predicted values of information technology learning self-efficacy among students. Because the predicted values are obtained as linear combination of digital device ownership and digital literacy skills among students, the coefficient value of 0.537 indicates that the relationship between digital ownership, digital literacy skills and information technology learning self-efficacy among students is moderate but positive.

The Coefficient of Determination R-square measures the goodness-of-fit of the estimated Sample multiple Regression in terms of the proportion of the variation in the dependent variables explained by the fitted sample multiple regression equation. Thus, the value of R-square is 0.288 means that about 28.8% of the variation in information technology learning self-efficacy among students is explained by the estimated using digital ownership and digital literacy skills as the independent variables and R square value is significant at 5 percent level.

The coefficient of **B1** is .221 which represents the partial effect of teacher involvement in management of curriculum and instruction holding the other variables as constant. The estimated positive sign implies that such effect is positive that information technology learning self-efficacy among students would increase by .221 for every unit increase in digital ownership and this coefficient value is not significant at 5% level. The coefficient of **B2** is .712 which represents the partial effect of digital literacy skills of students, holding the other variables as constant. The estimated positive sign implies that such effect is positive that information technology learning self-efficacy among students score would increase by .712 for every unit increase in digital literacy skills of students and this coefficient value is significant at 5% level.

Analyses of Hypothesis Gender, Digital Literacy and Information Technology Learning Self-Efficacy among Students

H₁: Gender does not significantly influence digital literacy and information technology learning self-efficacy among students.

H₁: Gender significantly influences digital literacy and information technology learning self-efficacy among students.

This research hypothesis sought to find out whether there was a significant difference between gender, digital literacy skills and information technology learning self-efficacy among students. The independent sample T-test was used in the analysis. Table 1 presents the findings on gender and digital literacy skills among students.

Table 2. Gender and Digital Literacy Skills among Students

Gender	Group	N	Mean	Std. Dev.	Df	t-value	p-value
Digital Literacy Skills among Students	Male	34	31.3	3.86	68	1.514	0.135
	Female	36	29.2	7.29			

Source Field Data, 2023

Table 2 shows the results of the independent sample t-test on male and female students in terms of their digital literacy skills at the Ayifua St. Mary's Anglican Basic School in the Cape Coast Metropolis. From Table 2, it was realized that the male students had a mean score of ($M=31.3$; $SD=3.86$) while the female students had a mean score of ($M=29.2$; $SD=7.29$). This means that the male students had more digital literacy skills as compared with their female counterparts. Again, the standard deviation ($SD=7.29$) of the female students indicates that digital literacy skills by the individual female students varied more than that of the male students ($SD=3.86$). However, when the mean scores of the two groups were tested using the independent samples t-test at 5% significant level, two-tailed, the results revealed that there was no statistically significant difference between male and female students in terms of their digital literacy skills at the Ayifua St. Mary's Anglican Basic School in the Cape Coast Metropolis ($t(68)=1.514$, $p = 0.135$). Therefore, the null hypothesis which stated that, gender does not significantly influence digital literacy among students fails to be rejected.

This finding confirms that of Hew and Leong (2011) who conducted a study to find gender difference among pre-university students in Malaysia. The study found no significant gender differences in eight out of nine ICT competencies; however, the male students were slightly higher in mean score in all the ICT competencies except word processing competency where female students had a higher mean score.

Gender and Information Technology Learning Self-Efficacy Among Students

This research hypothesis sought to find out whether there was a significant difference between gender and information technology learning self-efficacy among students. The independent sample T-test was used in the analysis. Findings from the study are presented in Table 3.

Table 3. Gender and Information Technology Learning Self-Efficacy among Students

Gender	Group	N	Mean	Std. Dev.	Df	t-value	p-value
Information Technology Learning Self-Efficacy among Students	Male	34	50.1	10.30	54.349	4.574	0.000
	Female	36	40.6	6.35			

Source Field Data, 2023

Table 3 shows the results of the independent sample t-test on male and female students in terms of their information technology learning self-efficacy at the Ayifua St. Mary's Anglican Basic School in the Cape Coast Metropolis. From Table 10, it was realized that the male students had a mean score of ($M=50.1$; $SD=10.30$) while the female students had a mean score of ($M=40.6$; $SD=6.35$). This means that the male students had more information technology learning self-efficacy as compared with their female counterparts. Again, the standard deviation ($SD=10.30$) of the male students indicates that information technology learning self-efficacy by the individual male students varied more than that of the female students ($SD=6.35$). However, when the mean scores of the two groups were tested using the independent samples t-test at 5% significant level, two-tailed, the results revealed that there was a statistically significant difference between male and female students in terms of their information technology learning self-efficacy at the Ayifua St. Mary's Anglican Basic School in the Cape Coast Metropolis ($t(54.349)=4.574$, $p = 0.000$). Therefore, the null hypothesis which stated that, gender does not significantly influence information technology learning self-efficacy among students is rejected.

This finding resonates with that of Jones et al. (2019) who conducted a survey study of 40 U.S. education institutions to learn about whether race and gender made a difference in internet usage among college students. The findings of the study suggested that, male college student Internet users spend more time online than female college student Internet users. The male college students spend greater amounts of their time pursuing a wide variety of leisure activities online including listening to and downloading music, watching and downloading videos as well as playing games than females. This finding according to Jones et al. (2019), corroborate numerous other studies that have all suggested that digital devices are boys' toys and therefore seems to favour boys than girls.

DISCUSSION

1. Concerning the level of information technology learning self-efficacy among students, it was realised that, the level of information technology learning self-efficacy among students was to a moderately high extent. This hinges on the findings that, to a moderately high extent, the students knew how to use computers in creating music; knew how to use Microsoft PowerPoint Presentation; knew how to use images or pictures in word processing system; and knew how to store information on a flash drive. However, to a low extent, the students: knew how to format a disk; knew how to use a scanner; and knew a little coding.
2. In relation to the ownership of digital devices among students, it was realised that, the students did not have/own most of the digital devices. With the exception of flash drives, which was the only digital device most of the students indicated that they had/owned, most of the students did not have/own the other digital devices such as: laptop computers; tablet or iPads; smartphones; E-readers; desktop computers; printers; scanners; and digital televisions.
3. On the level of students' digital literacy skills, it was realised that, to a moderately high extent, the students were competent with digital literacy skills. This is because, to a moderately high extent, the students can use digital devices to: access library resources; register for online-courses; and access information about events, student activities, and clubs/organisations. However, the students could not use the digital devices to: check grades/results; capture statistic images of in-class activities or resources; nor record their teacher's lesson or in-class activities (audio, visual, or both).
4. Regarding the influence of digital device ownership and digital literacy on information technology learning self-efficacy of students, it was realised that, the relationship between digital ownership, digital literacy skills and information technology learning self-efficacy among students was moderate but positive. Again, digital device ownership and digital literacy skills of students were statistically significant factors that influence information technology learning self-efficacy among students. However, digital device ownership did not significantly influence technology learning self-efficacy.
5. In terms gender, digital literacy and information technology learning self-efficacy among students, it was realised that, there was no statistically significant difference between male and female students in terms of their digital literacy skills. Therefore, the null hypothesis which stated that, gender does not significantly influence digital literacy among students failed to be rejected. Again, there was a statistically significant difference between male and female students in terms of their information technology learning self-efficacy. Hence, the null hypothesis which stated that, gender does not significantly influence information technology learning self-efficacy among students was rejected.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The following conclusions could be drawn from the findings of the study. It can be concluded that, the level of information technology learning self-efficacy among students was to a moderately high extent. However, the students did not know how to format a disk; did not know how to use a scanner; and knew a little coding. It is surprising that, although the students had learnt about coding, because it is part of the topics treated at the junior high school level, they did not know how to code or knew very little about coding. Perhaps, the teachers did not use a practical-oriented approach in teaching ICT lessons. Also, the fact students did not know how to format a disk or how to use a scanner raises a lot of questions. Perhaps, these resources were not available for use in the schools or at home.

It can be concluded that, the students did not have/own most of the digital devices. With the exception of flash drives, which was the only digital device most of the students indicated that they had/owned, most of the students did not have/own the other digital devices such as: laptop computers; tablet or iPads; smartphones; E-readers; desktop computers; printers; scanners; and digital televisions. Taking cognizance of the fact mentioned earlier that the level of information technology learning self-efficacy among students was to a moderately high extent, it would suffice to say that the availability of these technological resources to the students would enhance their the level of information technology learning self-efficacy.

Also, it can be concluded that, to a moderately high extent, the students were competent with digital literacy skills. However, the students could not use the digital devices to: check grades/results; capture statistic images of in-class activities or resources; nor record their teacher's lesson or in-class activities (audio, visual, or both). Perhaps, teachers do not communicate or encourage the use of technology in uploading students' grades/results or recording lessons and uploading them on-line for students to learn and perform assignments while at home. It could also be that the teachers lack the expertise to do them.

Again, it can be concluded that, the relationship between digital ownership, digital literacy skills and information technology learning self-efficacy among students was moderate but positive. Again, digital device ownership and digital literacy skills of students were statistically significant factors that influence information technology learning self-efficacy among students. Perhaps, both parents and teachers have roles to play in ensuring that the information technology learning self-efficacy among students is enhanced.

It can be concluded that, the self-efficacy of male teachers in terms of information technology learning was more as compared with their female students. Thus, there was a statistically significant difference between male and female students in terms of their information technology learning self-efficacy. Further investigations need to be carried out to ascertain why the self-efficacy of female students towards the use of information technology was low as compared to their male colleagues. However, the male students need to do more in terms of assisting the female students on digital literacy skills and improving upon their information technology learning self-efficacy.

Recommendations

Based on the findings and conclusions drawn from the study, the following recommendations have been made:

1. It is recommended that; the Government of Ghana through the Ministry of Education and the Ghana Education Service should make ICT facilities and tools available to the various basic schools so that students can familiarize themselves with their use.
2. In as much as government is being urged to provide the necessary funds to make these ICT resources available for use in schools, it is recommended that, the various schools through their PTA's should contribute to make some of these ICT resources available in their schools especially when help is not forthcoming from government. This will make students conversant with the use of digital devices such as: laptop computers; tablet or iPads; smartphones; E-readers; desktop computers; printers; scanners; and digital televisions even if they do not own/have them at home.
3. It is recommended that, the Ministry of Education and the Ghana Education Service should provide in-service training and frequent workshops for teachers on how to use modern technology to: upload students' grades/results; capture statistic images of in-class activities or resources; and record lesson or in-class activities (audio, visual, or both) for students to learn and perform assignments while at home and get themselves acquainted with the use of these digital devices, especially for academic purposes.
4. It is recommended that the male students should assist the female students in order to improve upon their self-efficacy in terms of information technology learning and digital literacy skills.

ADVANCED RESEARCH

This study investigated digital ownership, digital literacy and information technology learning self-efficacy of junior high school students at the Ayifua St. Mary's Anglican Basic School in the Cape Coast Metropolis. The study could be replicated in other schools and in other regions in the country to find out what persists there. Future studies may consider further investigations in order to ascertain why the self-efficacy of female students towards the use of information technology was low as compared to their male colleagues

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