

## **PERCEPTIONS OF SENIOR HIGH SCHOOL STUDENTS TOWARDS E-LEARNING PLATFORM IN SOME SELECTED SENIOR HIGH SCHOOLS IN CAPE COAST METROPOLIS**

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### **ABSTRACT**

With the emergence of the internet, e-learning have enhanced and improve the quality of education delivery on equitable basis in second cycle institutions. This change in the learning experience could not have come at a better time. This has made it imperative that students not only need to use e-learning platform, but they need to become comfortable and competent in it use.

This paper examines the perception of Senior High Schools students towards the use of e-learning platform in selected Senior High Schools in Cape Coast Metropolis. Probability sampling technique was used to select 600 respondents from three mixed Senior High Schools. Questionnaire was used in collecting data. SPSS version 20.0 was the software used. Frequency tables and chi-square were used in presenting the data.

The study revealed that majority of the students has heard of e-learning platform. Challenges in the use of e-learning platform include irregular internet access, lack of technical know-how and lack of feedback from peers and teachers. However, there were significant relationship between students' perceived ease of use and perception towards e-learning platform and a significant relationship between technology accessibility and computer ownership. We recommend that classrooms and laboratories in Senior High Schools should be fully equipped to support patronage of e-learning.

**Keywords:** Perception, E-Learning platforms

### **Background to the Study**

The ascendancy and expeditious development of Information and Communication Technology (ICT) has transformed society to information age where innovation is constantly changing the way things are done and improving on the previous ways of doing things. It is widely acknowledged that ICT can be used to improve the quantity (access) and quality of teaching and learning at any level of education. This was vividly captured by Allis (2013) who stated that

We are going to go from a world in which 24% of the population finishes secondary school to a world in which 46% of population finishes secondary school. It's a disturbing statistic: only one in four human beings today finish secondary schooling. But fortunately that's going to nearly double over the next 40 years. In terms of college completion, globally it's around 7% today. But the percentage of people with college degrees over the next 40 years is going to triple to over 20% of the population.

The above is possible through electronic learning (E-learning). E-learning, which is a form of education technology, has changed the ways teaching and learning is done at all levels of education. E-learning is pedagogy empowered by digital technology (Nichols, 2008). Thus, e-learning occurs when teaching and learning is mediated through ICT.

Achievement of universal primary education, which is one of the Millennium Development Goals ((MDG 2A)), can be facilitated by access to ICT (MDG 8F) like the use of e-learning platforms. This has made it imperative that students not only need to use e-learning platforms, but they need to become comfortable and competent in it use.

Regarding the use of e-learning within the school curriculum, Karon (2000) commented on its capability to improved accessibility of courses online that can be self-paced and tailored to the learner, as compared with conventional distance learning delivery agents. While Urdan and Weggen (2000), suggest that e-learning can result in a higher retention rate due to materials being personalized and reflecting different learning styles.

Student's confidence in e-learning can be explained through the attitude and behaviours of their teachers. Teachers' behaviour is a critical influence on students' confidence, and perception towards e-learning platforms as they provide important role model to their students (Derbyshire, 2003).

Ghana has developed a national framework on which the deployment of ICT in the education sector is to be based. This framework is contained in the Information Communications Technology for Accelerated Development (ICT4AD) document (Republic of Ghana, 2003). Ghana government's ICT4AD stated that ICT in general and e-learning specifically would be used to expand secondary and tertiary education to Ghanaians. It is on these premises that the government of Ghana is committed to the transformation of the economy of Ghana into information rich and knowledge based economy using the tools of ICT.

The government has acknowledged the need for ICT training in schools. The development of ICT in education will result in the creation of new possibilities for learners and teachers to engage in new ways of information acquisition and analysis. E-learning platforms however will enhance and improve the quality of education delivery on equitable basis in the second cycle institutions.

The quest of Governments all over the world is tuned toward strategies that increase access to innovative, inexpensive and quality education for their citizenry. Hence the introduction and integration of e-learning platforms into the teaching and learning process in the Ghanaian educational sector can be considered as the silver bullet to increase access education, enhances acquisition of 21<sup>st</sup> century skills, autonomous and lifelong learning. In spite of these laudable efforts, nothing substantial has changed at the pre-tertiary level of education in Ghana as schools are still following the traditional ways of teaching and learning that doesn't fit the information age.

Although technology has enabled online education in many countries, the situation is virtually not the same in Ghana. Secondary schools in Ghana have made little progress in building net-working infrastructure with acquisition of computers, but the integration of the technology into the teaching and learning process has been a challenge (Coleman, 2011). This has made the instructional delivery being instructor-led with a limited or absence of electronic collaboration among senior high students.

The use of e-learning depends on accessibility of ICT (hardware, software and Internet), perceived affordance, perceived usefulness and technological capability of its users and level of its integration into regular curriculum of the institution. Most e-learning researches have been done in the developed economies at all levels of education however, in Ghana, no study have been done at SHS level. It is against this background that this paper sought to find out the perception of SHS students towards the use of e-learning platform in their school. A study of students' perceptions towards e-learning is necessary so as to evaluate student's receptiveness towards e-learning (Rinaldi, 2013).

### Research Questions

This paper is to investigate the perception of students towards the use of e-learning platform in some selected SHS in Cape Coast Metropolis. Specifically, the research will investigate into:

1. What is the perception of students towards the use of e-learning platforms?
2. What are the perceived benefits derived from using e-learning platform?
3. What are the perceived challenges student's encounters when using e-learning platform?

The following hypotheses were formulated to be tested:

H<sub>0</sub> 1: There is no significant relationship between perceived ease of use and perception of students towards using e-learning platform.

H<sub>0</sub> 2: There is no significant relationship between student's perceived benefits and perception towards e-learning platform.

H<sub>0</sub> 3: There is no significant relationship between technology accessibility and computer ownership.

### Methodology

A multistage random sampling method was used as follows: All Senior High Schools in Cape Coast Metropolis formed the primary sampling frame and were clustered according day and boarding school. The researchers purposively selected mixed (co-educational) schools and a total of 3 schools were sampled. The schools were Aggrey Memorial Senior High School, Ghana National College and University Practice Senior High School. Two Hundred students were selected from each school. Individual students were selected or recruited into the study using systematic random sampling, whereby every stream in a school formed a secondary sampling frame.

Thereafter, the sampling interval was calculated based on a 10% of the school population. The result was then divided by the number of streams in the school to determine the sample size per class. The sampling interval (n) was then calculated by dividing the number of students in a stream by the sample size. The first student was selected blindly using a table of random numbers after which the remaining students were selected at regular

intervals (10) from the secondary sampling frame. This process was continued per stream until the required school sample size of 200 students was achieved from each school.

Questionnaire was used as research instrument in collecting the data and SPSS version 20.0 was used for the analysis. All respondents were given serial numbers to facilitate coding and analysis. Frequency tables and chi-square were also used in presenting the data. Conclusions from relevant related literature were captured along to authenticate the findings of the study.

**Results and Discussion**

Out of the 600 respondents, 348 (58.0%) were in the 15 – 17 age group. Female respondents were 300 (50.0%) of the total respondents with 225 (75.0%) in the age range of 15 – 19, 45 (15.0%) representing the age 18 - 20, and the rest 30 (10.0%) fell into the above 21 years. The sampled male were 300 (50.0%) with 193 (64.3%) in the below 15 age group, 66 (22.0%) were between 15 – 17 years, 29 (9.7%) for the age range of 18 – 20, 12 (4.0%) in the above 21 age group.

**Awareness of e-learning platform**

Table 1: Students awareness on e-learning platforms

	Heard of e-learning before training		Use of before training		Correct example cited	
	n	%	n	%	n	%
Yes	436	72.7	189	31.5	400	66.7
No	164	27.3	411	68.5	200	33.3
Total	600	100	600	100	600	100

Field survey, 2015.

Table 1 showed that, 436 (72.7%) answered in the affirmative that, they have heard of e-learning platform and 164 (27.3%) answered in the negative. It can be concluded that majority of the respondents have heard of e-learning platform. This result supports the findings of Gamal and Aziz (2011), who concluded that majority (80.0%) of the students are aware of e-learning.

Again, 189 (31.5%) of the respondents had received training in e-learning platforms whilst 411 (68.5%) had received no training in e-learning platforms. It can be concluded that majority of the respondents had no training in the use of e-learning platforms. However, this result contradicts the findings of Carter (2013), who concluded that majority (86.7%) of the students have received adequate orientation with the use of e-learning platform.

Respondents were further asked to give examples of e-learning platforms, and majority 400 (66.7%) did give examples of e-learning platforms whilst only 200 (33.3%) were not able to give correct examples of e-learning platforms. The finding did agree with the work done by Tagoe (2013), who concluded that students know examples of e-learning platforms.

**Perceived ease of e-learning platform**

Furthermore, respondents were asked to give their responses on the perceived ease of e-learning platform. The details of their responses are represented in Table 2.

Table 2: Perceived ease of use of E-learning platform

Statement	SA		A		D		SD	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
E-learning is user friendly	234	39.0	170	28.3	99	16.5	97	16.2
Easier to become skillful with it	201	33.5	194	32.3	107	17.8	98	16.3
Easy to enjoy lesson on e-learning	219	36.5	193	32.2	88	14.7	100	16.7
Ease sharing ideas with colleagues	199	33.2	242	40.3	85	14.2	74	12.3

Field survey, 2015.

On perceived ease of use, a higher percentage of students agreed with the four statements specified as shown in Table 2. The finding support the work of Park (2009), who concluded that majority of the student’s agreed that it is easy to use e-learning platform.

On the first hypothesis H<sub>0</sub> 1, there was a significant relationship between student’s perceived ease of use and perception towards e-learning platform ( $\chi^2 (2) = 16.09; p < .05$ ). This result supports the findings of Tagoe (2013) in Ghana who concluded that there is significant relationship between student’s perceived ease of use and

perception of incorporating e-learning into teaching and learning. Furthermore, the results of this study are also supported by results of the investigation made by Liu, Chen, Sun, Wible, & Kuo (2008).

Perceived usefulness of e-learning platform

Respondents were further asked to give responses on their perceived usefulness of e-learning platform. The details are represented in Table 3.

Table 3: Perceived usefulness of using e-learning platform

Statement	SA		A		D		SD	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Has improved my performance	236	39.3	189	31.5	97	16.2	78	13.0
Enable me to accomplish task fast	199	33.2	208	34.7	98	16.3	95	15.8
I find e-learning system easy to use	209	34.8	198	33.0	96	16.0	97	16.2
Are simple and easy to use	189	31.5	223	37.2	99	16.5	89	14.8
Can get feedback from others	198	33.0	215	35.8	90	15.0	97	16.2

Field survey, 2015.

On the perceived benefits of e-learning platform, a higher percentage of students indicated their agreement with all the statements. The indication is that students recognize the benefit of e-learning. This observation agrees with the findings of Ocaik (2010), who concluded that students have good perception towards e-learning platform. Adamson, Murie, and Weyers (2004) also reported similar positive perception in student perception on e-learning survey report of students of University of Dundee. Another study by Spiceland and Hawkins (2002), also confirmed this research as the findings of the study reflected that students have positive perception toward e-learning platform.

On the first hypothesis H<sub>0</sub> 2, a significant relationship was also found between student's perceived benefits and perception towards e-learning platform ( $\chi^2 (2) = 29.37; p < .05$ ). Martins and Kellermanns (2004) also found that perceived benefits of e-learning platform is positively and significantly related to the perceived usefulness.

Perceived challenges

Respondents were asked to state or give the challenges they face when using e-learning platform and the details of their responses are represented in Table 4.

Table 4: Perceived challenges in using e-learning platform

Challenges	Frequency	Percent
Irregular Internet access	262	43.7
Low participation of other students	62	10.0
Lack of feedback from the instructor	53	8.8
Lack of feedback from peers	75	12.5
Single students dominating	54	9.0
Lack of group mentor	50	8.3
Lack of technical know-how	44	7.3
<b>Total</b>	<b>600</b>	<b>100</b>

Field survey, 2015.

The findings in Table 4 reveals that majority 262 (43.7%) of the respondents indicated that irregular Internet access serve as a challenge for them when using the e-learning platform. A deduction from Table 4 is that the three major factors that affect respondent's non-use of e-learning platform are irregular Internet access, lack of feedback from peers and instructors. These barriers were quite similar to the reasons given by Sphamandla (2015) as the major barriers affecting student's participation on e-learning platform. This is also confirmed Neo (2014) assertion of challenges that prevents students from using e-learning platforms.

Access to Technology

Student levels of access to technologies represent an initial factor that would shape their perception towards using e-learning platform. The details of their responses are represented in Table 5.

Table 5: Distribution of Access to Technology

Technology access	Yes		No	
	Frequency	%	Frequency	%
Ownership of computers	204	34.0	396	66.0
Internet access	227	36.0	373	64.0

Field survey, 2015.

The data in Table 5 reveals that as many as 396 (66.0%) of the respondents claimed they did not own a computer. The remaining 204 (34.0%) responded in the affirmative. The study again revealed that 227 (37.8%) of the respondents indicated that they have access to the Internet and the majority 373 (62.2%) also stated that they do not have access to the Internet. A deduction from the above is that the majority of the respondents did not own their own computers and do not have Internet access. This outcome is consistent with the studies that revealed that most students do not own personal computers (Edumadze & Annor-Frempong, 2009, p.367) and also do not have Internet (Annor-Frempong & Edumadze, 2009, p.389). This is because of the policy of the Ghana Education Service that does not allow SHS students to bring computers/tablets/mobile phones to schools and the high cost of Internet connectivity that most schools cannot afford it.

The study found a significant relationship between technology accessibility and computer ownership ( $\chi^2 (12) = 16.78; p > 0.002$ ). This means student's who have computers or electronic devices for browsing and also have Internet services makes it easy for them to use the e-learning platform. In other way, students who do not personally have computers and have bad Internet services are reluctant in using e-learning platform. Thus, in general, accessibility of technology tends to affect student perception and correlates positively with the level of technology use (Agyei & Voogt, 2011). This result supports the findings of Dadzie (2009), who stated a significant relationship between computer ownership, usefulness and access to the Internet.

### Recommendations

1. Ghana Education Service (GES) should mainstream e-learning into the curriculum of SHS to supplement the traditional face-to-face course delivery.
2. Systematic training on e-learning should be organized for students to enhance the adoption and regular patronage of e-learning platforms in order to improve their educational output and motivate those who are doubtful or skeptical in its usage.
3. Classrooms, dormitories, libraries and laboratories in SHS should be fully equipped to support the patronage of e-learning.
4. Eduvid Ghana limited should be encouraged to spread their e-learning platform in other SHS in other regions.
5. Modeled e-learning platforms should be done to engage users in interactive tasks and in collaborative learning not reading materials or notes to students to encourage others.
6. The Ministry of Education and the Curriculum for Research and Development Division (CRDD) in Ghana should encourage e-learning platforms, which use appropriate local teaching and learning styles that are user friendly, simple and easy to use in secondary schools.
7. Updated educational material with interesting animations should be uploaded in e-learning platforms in order to draw student's attention.
8. Ghana Education Service should allow students to use mobile devices that support e-learning platforms to motivate students to explore this technology in their studies. By doing this, teachers should monitor the usage of the mobile devices so that they will not misuse it.

### Implications

The use of e-learning platforms seems to be the upcoming trend. It has been spreading worldwide. However, secondary schools in Ghana have not really begun to take advantage of the e-learning medium. The adaptation of e-learning platform in Ghana can provide more suitable solution in secondary schools education by filling in the gap in effective teaching delivery between teachers and students.

Better understanding of the negative factors contributing to disparities about student's perception towards e-learning platform was identified. The findings of the study indicated that secondary school students have positive attitude towards e-learning platform. However, major challenges in the usage of e-learning platforms, which include irregular Internet access, lack of technical know-how and lack of immediate feedback responses from peers and instructors should be

However, there are important tasks that require attention and effort from Ghana government to ensure the development of e-learning platforms for student's patronage.

## References

- Adamson, M., Murie, D., & Weyers, J. (2004). *Student e-learning Survey Report*. Dundee: University of Dundee.
- Agyei, D. D., & Voogt, J. M. (2011). Exploring the potential of the will, skill, tool model in Ghana: Predicting prospective and practicing teachers' use of technology. *Computers & Education*, 56(2011), 91–100.
- Allis, R. (2013). *The Startup Guide: Creating a better world through Entrepreneurship*. Retrieved from <http://startupguide.com/world/the-innovation-age/>
- Annor-Frempong, F. & Edumadze, J. K. E. (2009). The use of the Internet among Agricultural Students at University of Cape Coast in Ghana. In K. Opuku-Agyemang (Eds), *Culture, Science and Sustainable Development in Africa*. (pp. 377-387). Cape Coast: University Press.
- Carter, M. A. (2013). A study of student's perceptions of the online component of a hybrid course. *Procedia Social and Behavioral Science (3<sup>rd</sup> World Conference on Psychology, Counseling and Guidance)*, 84, 562.
- Dadzie, P. (2009). E-learning and e-library services at the University of Ghana: prospects and challenges. *Information Development*, 25(3), 207-217.
- Derbyshire, H. (2003). *Gender issues in the use of computers in education in Africa*. Washington, DC: American Psychological Association.
- Gamal, S. E., & Aziz, R. A. (2011). The perception of students regarding E-learning implementation in Egyptian Universities: The case of Arab Academy for Science and Technology. *The Third International Conference on Mobile, Hybrid, and Online Learning*, 2(5), 3.
- Karimi, L., & Tunku, B. (2013). Perceived learning and satisfaction in a blended teacher education program: An experience of Malaysia teacher trainees. *Contemporary Education Technology*, 4(3), 197-211.
- Karon, R. (2000). Bankers Go Online: Illinois banking company learns benefits of e-training. *E-Learning 1*(1), 38-40.
- Liu, I., F., Chen, M., C., Sun, Y., Wible, D., & Kuo, C., H. (2008). Assessment of an online learning community from Technology Acceptance Model in Education. *Eighth IEEE International Conference on Advanced Learning Technologies*, 8, 222-224.
- Martins, L. L., & Kellermanns, F. W. (2004). A model of business school students' acceptance of a web-based course management system. *Academy of Management Learning and Education*, 3(1), 7-26. doi:dx.doi.org/10.5465/AMLE.2004.12436815
- Nicholas, S. (2008). Critical success factors for e-learning acceptance: Confirmatory factor models. *International Journal of Technology Marketing* 2(2): 157-182.
- Neo, M. (2014). Developing a collaborative learning environment using a web-based design. *Journal of Computer Assisted Learning* 19: 462-473.
- Ocak, M. A. (2010). Blend or not to blend: a study investigating faculty members' perceptions of blended teaching. *World Journal on Educational Technology*, 2(3), 196 – 199.
- Park, S. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning Educational *Technology & Society*, 12(3), 150-162.
- Republic of Ghana, (2003). *The Ghana ICT for Accelerated Development (ICT4AD) policy*. Accra, Ghana: Graphic Communications Group Limited.
- Sphamandla, L. (2015). Examining the perception of information science students towards e-learning. Unpublished thesis submitted to Department of Information Science in partial fulfillment for the degree of Master of Information Science: University of South Africa.
- Spiceland, J. D., & Hawkins, P. C. (2002). The impact on learning of an asynchronous active learning course format. *Journal of Asynchronous Learning Networks*, 6(1), 68-75.
- Tagoe, M. (2013). Students' perceptions on incorporating e-learning into teaching and learning at the University of Ghana. *International Journal of Education and Development using Information and Communication Technology* 8(1): 91-103.
- Urduan, T., & Weggen, C. (2000). *Corporate E-Learning: Exploring a new frontier*, Washington: Hambrecht and Co.