

## APPRAISAL OF STUDENTS' LEVEL OF COMPUTER ANXIETY, SELF-EFFICACY AND ATTITUDE TOWARDS COMPUTER AND INTERNET BASED ON DAILY APPLICATION

**Iniobong F. Akpan**

Department of Science Education  
Akwa Ibom State University  
Ikot Akpaden, Mkpato Enin LGA  
Email: iniobongakpan@aksu.edu.ng

### Abstract

*The study was to appraise students' level of computer anxiety, self-efficacy and attitude towards computer and internet based on daily application. Three research questions and three hypotheses were formulated to guide the study. A descriptive survey design was adopted in the study. The population of the study was all SS2 students in the 230 public Secondary Schools in Akwa Ibom State. A total of 20 Secondary Schools with computer and internet based facilities were randomly selected for the study, 25 students each which gave a sample size of 500. A questionnaire titled "Computer anxiety, Self-efficacy and Attitude towards Computer and Internet based on daily application (CASACI) was used to gather information for data analysis. A reliability index of 0.89 was obtained using Cronbach Alpha Reliability Coefficient. Data was analysed using Regression and Pearson Product Moment Correlation (PPMC) statistics. The findings revealed that there was a weak but positive relationship between students level of Computer Anxiety and Internet usage on daily applications. There was a weak positive relationship between students level of Computer Self-efficacy and Internet usage on daily application and there was a weak positive relationship between students' attitude towards Computer and Internet usage on daily application. It was therefore concluded that there is a significant relationship between students' level of computer anxiety, Computer Self-efficacy and Internet usage on daily application. Based on the findings of the study it was recommended that Ministry of Education, school principals and teachers should join hands to organize more training programmes that would expose the students to the use of computers and internet on daily applications.*

**Keywords:** Appraisal, Computer Anxiety, Computer Self-Efficacy, Attitude, Internet, Daily Applications.

### Introduction

Computer is a technological innovation under the control of stored programme that can perform some of the intellectual roles of man even beyond human capability. Computers are used not only to manage information and to enhance productivity, but also used in education. Computer consist of hardware and software, as well as networks and other multimedia devices like video, audio, phone, and camera, which convert information into text, sound, and motion which can be used in teaching and learning. Eden, et al., (2023) reiterated that computer provides students with the opportunity to develop and use higher-level thinking skills to solve problems that are relevant to their daily lives. Experienced computer users are said to have lower computer anxiety while those that briefly use computers will have a higher computer anxiety (Celik & Yesilyurt, 2013).

Anxiety can be described as feelings of frustration, possibility of shame, dissatisfaction and the dread of the unknown. Kannan et al., (2016) refer to computer anxiety as when a student is afraid, uneasy to use computer. When a person has a feeling of being uncomfortable during

the use of computer such a person is said to have computer anxiety (Awofala, et al., 2017). An individual is said to be computer anxious when the person's state of emotion during interaction with computer decreases the advantages which one can get as a result of using computer (Oribhabor, 2020). Akpan, Uko and Ekanem (2013) maintained that teachers have to take steps to reduce anxiety in students and enhance their computer self- efficacy in order to improve their competence in internet use.

Resistance to change is a major contributor of anxiety and this can have negative effects on the individual's use of computer and internet on daily applications. This may come in three dimensions: Psychological, operational and sociological. In the Psychological dimension the person's attitudes toward computers, self-efficacy, personality types and self-perceptions are affected. Operational dimensions of anxiety usually results from computer courses, teachers, nature of computers, the extent of experiences with the computer and whether one owns a personal computer or not. While the sociological dimension is related to factors of age, gender, nationality, socio-economic status and the field of study.

Research has found that computer anxiety has a strong negative influence on computer-related activities such as computing skills, intention to use computers, attitudes toward computer and perceived usefulness of computers (Aktağ 2015; Fatemi, et al., 2017). A study by Oribhabor (2020) on influence of computer anxiety on the academic performance of junior secondary school students showed that most of the students used in the study were mildly anxious when dealing with computer. The level of computer anxiety which is also described as fear may affect a person's behaviour in terms of a person's self-efficacy. However, Akpan (2011) noted that recent advances in computer technology and the diffusion of personal computers, productivity software, media and network resources over the last decade heralded of the development and implementation of new and innovative teaching strategies. Many prepare course assignment, make study notes, and tutor themselves with specialized multi-media and process data for research projects.

Self-efficacy is not a static or stable trait, but rather a situation-specific, dynamic judgement that changes with acquired information, such as the change of environmental setting or the change of tasks conditions and feedback. It refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1997) . Self-efficacy reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment. According to Akpan (2018) computer self-efficacy represents a comprehensive judgement of one's ability to perform a task. Balogun & Olanrewaju (2016) observed that computer self-efficacy increases performance and reduces computer induced anxiety.

Aktağ and Tuzcuoğlu (2016) found that computer self-efficacy has a significantly positive influence on an individual's expectations towards using computers. Akpan (2018b) in a study on relationship between students' computer self-efficacy and their attitude towards computers and internet in selected private secondary schools revealed that there was a significant positive relationship between students' computer self-efficacy and attitude towards computer and internet. Akpan (2018a) found that there was a very high positive and significant relationships between computer self-efficacy skills and attitude towards computer and internet. It is therefore a fact that individual students even in a competitive environment would not use a technology if they do not develop a positive attitude to it and see the benefits relative to such technology and therefore will lack self-efficacy skills in such a technology. Itighise and Akpan (2022) found in their study that science education students' level of literacy skills acquisition through handheld devices was high. This finding showed that mobile handheld devices successfully developed high level meaningful skills, educational content, lessons and scaffolding.

The use of computer also depends on students' attitude. Attitude is said to be a characteristic behaviour of a person towards an issue or event (Eden & Mbuk, 2019) in this case computers.

Kenyon (2018) believed that attitude is a complex word but the feelings can be reflected through their reactions and characteristics. Awofala et al., (2019) in a study to investigate attitudes toward computer, computer anxiety and gender as determinants of pre-service science, technology, and mathematics teachers' computer self-efficacy revealed significant correlations between computer attitudes, computer anxiety and computer self-efficacy. Right students' attitude with the right learning technique can enhance performances (Eden & Mbuk, 2019). Akpan and Itighise (2019) in their study found that there is a significant low utilization of ICT tools in instructional delivery for science education lecturers in Akwa Ibom State University as perceived by the students. Akpan and Itighise (2019) observed that the use of ICT tools provided opportunities for remarkable change and transformation in teachers' education due to their ability to draw learning closer to the learner and make teaching easier and simple to the lecturers. Akpan (2016) noted that the general attitude to the computer may be influenced by the students' level of self-efficacy skills. Individuals who perceived themselves as capable of performing certain task or activities using computers may be regarded as having a positive attitude and are likely to attempt and execute these tasks and activities.

In one notable example, science teachers encountered challenges when using computers in their teaching (Nielsen et al., 2015). Although both teachers and students were prepared and enthusiastic, they struggled with the practical use of the computer and this resulted in students losing interest in the lesson and instead of paying attention, they browsed the internet and played games while the teacher returned to traditional method of teaching. This experience has great impact on both teachers and students attitude toward computer usage on daily bases. The self-efficacy of the individual is bruised, attitude becomes negative and anxiety which is associated with fear of computer is most likely to set in. Akpan (2022) maintained that the best part about the digitalization of education in the 21st century is that it is combined with the aspects of both; classroom learning and online learning methods. Working hand in hand both acts as support to each other, which gives a stronghold to our modern students. Akpan (2010) noted that the apparent problem and limitation with conventional teaching method is that students have little or no control over what material is covered and the pace at which it is presented. One way of overcoming these problems is by use of computer which is the core essential requirement for ICT. Through their interacting terminals, ICT have created an interactive teaching/learning environment where a student can choose what type of learning modules he wants to cover. Based on the above discussion it is imperative to make an appraisal of students' level of computer anxiety, self-efficacy and attitude towards computer and internet based on daily application.

### **Statement of the problem**

Globally, there has been an appeal for a re-orientation of teaching and learning in schools towards the adoption of the use of computer and internet based facilities. The success of this appeal is a function of the level of anxiety, self-efficacy, willingness, attitude and level of knowledge of computer as controlled by teachers and its actual usage in schools and at home in daily applications. In this information age, education in Nigeria is bedevilled with a lot of challenges whereby using the computer and internet facilities is a problem as many students are not computer literate and the teachers themselves were not fully taught how to integrate the use of computers and internet in teaching, learning and daily applications. It is shameful to observe that less than 10% of the teachers in Nigerian primary and secondary schools are computer literate (Owolabi, et al., 2013) as many teachers in Nigeria are not using computer and internet facilities in teaching and learning. Could this be due to computer anxiety, computer self-efficacy or their attitude towards computer and internet usage in daily applications? Hence, the need for an appraisal of students level of computer anxiety, self-efficacy and attitude towards computer and internet based on daily application.

**Purpose of the study**

The purpose of this study was to appraise students' level of computer anxiety, self-efficacy and attitudes toward computer and internet based on daily application. Specifically, the study sought to:

1. Determine the relationship between students' level of computer anxiety and internet usage on daily application
2. Determine the relationship between students' level of computer self-efficacy and internet usage on daily application
3. Determine the relationship between students' level of attitude towards computer and internet usage on daily application

**Research questions**

1. What is the relationship between students' level of computer anxiety and internet usage on daily application?
2. What is the relationship between students' level of computer self-efficacy and internet usage on daily application?
3. What is the relationship between students' attitude toward computer and internet usage on daily application?

**Hypotheses**

1. There is no significant relationship between students' level of computer anxiety and internet usage on daily application
2. There is no significant relationship between students' level of computer self-efficacy and internet usage on daily application
3. There is no significant relationship between students' attitude toward computer and internet usage on daily application

**Method**

The design adopted for this study was a descriptive survey research design. The population of the study consist of all the SS 2 students in the 230 public secondary schools in Akwa Ibom State (Ministry of Education, Akwa Ibom State, 2024). A total of 20 secondary schools with computer and internet based facilities were selected using purposeful randomly selectedsampling technique.. In each of the 20 schools, 25 students were randomly selected. Therefore, the sample for the study was 500 students.

The instrument for the study was a questionnaire titled 'Computer Anxiety, Self-Efficacy and Attitude toward Computer and Internet' based on daily application (CASACI). The questionnaire was divided into two sections. The Section A sought information on students name and school. Section B, on students' level of computer anxiety, computer self-efficacy, computer attitude and internet usage based on daily application.

The reliability was ascertained by administering the instruments to a group of 20 students in a school not used in the study. The data obtained was analysed using Cronbach alpha reliability coefficients and was found to be between 0.72 - 0.89 for computer anxiety, self-efficacy, computer attitude and internet usage on daily application respectively. This was adjourned reliable to be used for the study.

The instrument was administered to students in the sampled schools after obtaining permission from the respective principals and collected back immediately after completion to obtain high return rate. Data was analysed using Regression analysis to answer research questions while Pearson Product Moment Correlation (PPMC) statistics was used to test the hypotheses at 0.05 level of significance using SPSS version 20.

## Results and Discussion

The results are presented in tables as follows

Research Question 1: What is the relationship between students' level of computer anxiety and internet usage on daily application?

**Table 1:** Regression coefficients for students' level of computer anxiety and internet usage on daily application

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	17.31	8.91		.00
Computer anxiety	.020	.030	.030	.50
R = .030	R2 =.001			

Table 1 shows unstandardized coefficient (B) of .020 for influence of students' level of computer anxiety on internet usage on daily application. This indicates that, with students' level of computer anxiety, there is an increase of only 2% in internet usage on daily application. Also, coefficient of determination (R2) value of .001 indicates that computer anxiety has only 1% influence on internet usage on daily application. While Regression coefficient(R) value of .030(3%) indicates a low level of prediction of internet use by computer anxiety.

From Table 1, the correlation coefficient, r between students' level of computer Anxiety and Internet usage on daily application was 0.03. This indicated that there is a weak positive relationship between students' level of computer Anxiety and Internet usage on daily application.

**Research Question Two:** What is the relationship between students' level of computer self-efficacy and internet usage on daily application?

**Table 2:** Regression coefficients for students' level of computer self-efficacy and internet usage on daily application

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	16.19	.843		.00
Computer anxiety	.098	.047	.090	.037
R = .023	R2 =.001			

Table 2 shows unstandardized coefficient (B) of .098 for influence of students' level of computer self-efficacy on internet usage on daily application. This indicates that, with students' level of computer self-efficacy, there is an increase of 9.8% in internet usage on daily application. Also, coefficient of determination (R2) value of .001 indicates that computer self-efficacy has only 1% influence on internet usage on daily application. While Regression coefficient(R) value of .023(2.3%) indicates a low level of prediction of internet use by computer self-efficacy.

From Table 2, the correlation coefficient, r between students' level of computer self-efficacy and internet usage on daily application was 0.09. This indicated that there is a weak positive relationship between students' level of computer self-efficacy and Internet usage on daily application.

Research Question Three: What is the relationship between students' level of attitude toward computer and internet usage on daily application?

**Table 3:** Regression coefficients for students' level of attitudes toward computer and internet usage on daily application

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	17.35	1.09		.00
Attitude	.032	.063	.023	.61
R = .023	R2 =.001			

Table 3 shows unstandardized coefficient (B) of .032 for influence of students' level of attitude towards computer on internet usage on daily application. This indicates that, with students' level of attitude towards computer, there is an increase of only 3.2% in internet usage on daily application. Also, coefficient of determination (R2) value of .001 indicates that computer anxiety has only 1% influence on internet usage on daily application. While Regression coefficient(R) value of .023(2.3%) indicates a low level of prediction of internet use by attitude towards computer.

**Table 3:** Pearson r on students' attitude towards computer and internet usage on daily application

Variables	N	r-value for Students' level of attitude toward computer	r-value for Internet usage on daily application	Remark
Students' level of attitude toward computer	500	1.00	0.02	Weak Positive Relationship
Internet usage on daily application	500	0.02	1.00	

From Table 3, the correlation coefficient, r between students' attitude toward computer and Internet usage on daily application was 0.02. This indicated that there is weak positive relationship between students' attitude toward computer and Internet usage on daily application.

### Testing of Null Hypotheses

**H01:** There is no significant relationship between students' level of computer anxiety and internet usage on daily application

**Table 4:** Test of Significance of Pearson Correlation, r between students' level of computer anxiety and internet usage on daily application

Variables	Students' level of computer anxiety	Internet usage on daily application	Sig. (P-Value)	Alpha Level $\alpha$	Decision
Students' level of computer anxiety	500	1	0.03	.05	Not Significant
Internet usage on daily application	500	0.03	1		

As shown on Table 4, alpha level,  $\alpha = .05$ , which is less than the .508 for P-Value. This shows that there is a significant relationship between students' level of computer anxiety and internet usage on daily application. Hence, the null hypothesis is retained.

H02: There is no significant relationship between students' level of computer self-efficacy and internet usage on daily application

Table 5: Test of Significance of Pearson Correlation,  $r$  between students' level of computer self-efficacy and internet usage on daily application

Variables	Students' level of computer self-efficacy	Internet usage on daily application	Sig. (P-Value)	Alpha Level $\alpha$	Decision
Students' level of computer self-efficacy	500	1	0.093		
Internet usage on daily application	500	0.093	.037	.05	Significant

A shown on Table 5, alpha level,  $\alpha = .05$ , which is greater than the .037 for P-Value. This shows that there is a significant relationship between students' level of computer self-efficacy and internet usage on daily application. Hence, the null hypothesis is rejected.

H03: There is no significant relationship between students' attitude toward computer and internet usage on daily application

Table 6: Test of Significance of Pearson Correlation,  $r$  between students' attitude toward computer and internet usage on daily application.

Variables	Students' level of computer self-efficacy	Internet usage on daily application	Sig. (P-Value)	Alpha Level $\alpha$	Decision
Students' level of computer self-efficacy	500	1	0.093		
Internet usage on daily application	500	0.093	.613	.05	Not Significant

A shown on table 6, alpha level,  $\alpha = .05$ , which is less than the .613 for P-Value. This shows that there is no significant relationship between students' attitude toward computer and internet usage on daily application. Hence, the null hypothesis is retained.

## Discussion of the Findings

The findings in table 1 indicated that there is a low level of weak and positive relationship between students' level of computer anxiety on and internet usage on daily application. This could be attributed to the fact that when students experience the fear of computer, they tend to be less enthusiastic towards internet usage on daily application. This is in line with Fatemi, et al., (2017), whose study reported among other findings that computer anxiety has a strong negative influence on computer-related activities such as computing skills, intention to use computers, attitudes toward computer and perceived usefulness of computers. The finding is also in agreement with Oribhabor (2020) on influence of computer anxiety on the academic performance of junior secondary school students which showed that most of the students used in the study were mildly anxious when dealing with computer. The similarity of findings of the three studies could be because they were carried out in secondary schools. Finding on hypothesis also showed that there is a significant relationship between students' level of computer anxiety and internet usage on daily application.

Results in table 2 on the relationship between students' level of computer self-efficacy and internet usage on daily application indicated that there is a low and weak positive relationship between students' level of computer self-efficacy and internet usage on daily application. This is in contrast with Aktağ & Tuzcuoğlu (2016) who found that computer self-efficacy has a significantly positive influence on an individual's expectations towards using computers. This finding is also in contrast with Akpan (2018) in a study whose findings revealed that there was a significant positive relationship between students' computer self-efficacy and attitude towards computer and internet. Findings on hypothesis also showed that there is a significant relationship between students' level of computer self-efficacy and internet usage on daily application.

In table 3, the finding on the relationship between students' level of attitude toward computer and internet usage on daily application indicated that there is also a low and weak positive relationship between students' attitude toward computer and internet usage on daily application. This implies that the lower the students' level of computer attitude, the lower their level of internet usage on daily application. This could be attributed to the fact the when students' interest toward computer is low their attitude towards computer is negative, hence, the lower their internet usage on daily application. This is in agreement with Kenyon (2018) and Awofala et al., (2019) that attitude correlates other non-cognitive variables like anxiety and self-efficacy.

Findings showed that there is no significant relationship between students' attitude toward computer and internet usage on daily application. This is in contrast with Akpan (2018) in a study on relationship between students' computer self-efficacy and their attitude towards computers and internet in selected private secondary schools which revealed that there was a significant positive relationship between students' computer self-efficacy and attitude towards computer and internet.

## Conclusion

In conclusion, there is a significant relationship between students' level of computer anxiety, computer self-efficacy and internet usage on daily application. The students' attitude toward computer does not correlate with internet usage on daily application. Thus, the weaker the level of computer anxiety and self-efficacy of the students, the more the level of internet usage on daily application



## Recommendations

Based on the findings, the following recommendations are made:

1. The Ministry of Education, school principals and teachers should join hands to organize more training programmes that would expose the students to the use of computers and internet on daily applications. This will aid them to improve in their academic work and unlearn computer anxiety, build computer self-efficacy and establish a positive attitude towards computer and internet usage on daily applications.
2. The Ministry of Education should give top most priority to providing computers and internet facilities for use in schools for teaching and learning. This will help to build computer self-efficacy of the students.
3. Teachers should engage indulge the students in constantly and frequently using computers for assignments and web-browsing so as to enhance their confidence and reduce computer anxiety in teaching and learning.

## References

- Akpan, I. F & Itighise, A. E (2019). Students' perception of lecturers' utilization of Information and Communication Technology (ICT) tools for instructional delivery in science education programme. *Journal of Education and Development*, 3(2), 35-41.
- Akpan, I. F. (2011). Strategies for successful integration of ICT in the teaching and Learning of Science. *Knowledge Review*, 23(1), 112-116.
- Akpan, I. F. (2016). Computer anxiety, Computer self-efficacy and attitude towards computer based on gender and subject of interest. *Journal of Educational Realities*, 1(1), 38-49.
- Akpan, I. F. (2018). Computer anxiety, computer self-efficacy and attitude towards internet among secondary school students in Akwa Ibom State, Nigeria. *American Journal of Educational Research*, 6(11), 1455-1459.
- Akpan, I. F. (2018). Computer self-efficacy and students' attitude towards computer and internet in selected private schools in Akwa Ibom State, Nigeria. *International Journal of Recent Research in Social Science and Humanities*, 5(2), 1-6.
- Akpan, I. F. (2022). Curriculum restructuring for sustainable development: Towards digitalized basic science and technology education for relevance in Nigeria. Proceedings of the 36th annual conference of the Nigerian Academy of Education held at the university of Calabar, Calabar, Cross River State from 8th – 12th November, 2022.
- Akpan, I. F. (2010). Information and Communication Technology (ICT): Problems and prospects on the teaching and learning of science in Nigeria. *Journal of Qualitative Education*, 6(3), 67-74.
- Akpan, I. F., Uko, P. & Ekanem, T. (2013). Computer anxiety, computer self-efficacy and attitude towards internet among secondary schools students in Akwa Ibom State, Nigeria. Proceedings of the 8th International Conference on e-learning, held at cape peninsula University of Technology, Cape Town, South Africa from 27-28 June, 2013, pp193-198.
- Aktağ, I. (2015). Computer self-efficacy, computer anxiety, performance and personal outcomes of Turkish physical education teachers. *Educational Research and Reviews*, 10(3), 328-337.
- Aktağ, I., & Tuzcuoğlu, S. (2016). Turkish students' computer self-efficacy from colleges of physical education and sports. *International Journal of Human Sciences*, 13(1), 1770-1779.
- Awofala, A. O. A., Akinoso, S. O. & Fatade, A. O. (2017). Attitudes towards computer and computer self-efficacy as predictors of pre-service mathematics teachers' computer anxiety. *Acta Didactica Napocensia*, 10(2), 91-108.

- Balogun, A. G. & Olanrewaju, A. S. (2016). Role of computer self-efficacy and gender in computer-based test anxiety among undergraduates in Nigeria. *Psychological Thought*, 9 (1), 58–66.
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. W.H. Freeman.
- Celik, V., and Yesiyurt, E. (2013). “Attitudes to technology, perceived computer self-efficacy and computer anxiety as predictors of computer supported education.” *Computers and Education*, 60 (1), 148–158
- Eden, M. I. & Mbuk, W. (2019). Students’ attitude towards Chemistry and their academic performance in selected concepts in Chemistry among secondary school students in Ibiono Ibom Local Government Area, Nigeria. *International Journal of Innovative Research and Advanced Studies*, 6 (12), 19-26.
- Eden, M. I., Etiubon, R. A., Ekong, A. M., Sampson, E. M., Umoetuk, E. U. (2023). Digital tools utilization and chemistry students’ academic achievement in the teaching of soap production in secondary schools in Akwa Ibom State, Nigeria. *Unizik Journal of STM Education*, 6(1), 73-81.
- Fatemi Jahromi, S. A., Forouzan, A. & Gholaminejad, R. (2017). Computer anxiety and computer self-efficacy as predictors of Iranian EFL learners’ performance on the reading section of the TOEFL iBT. *Higher Education of Social Science*, 11(6), 55-65.
- Itighise, A. E & Akpan, I. F. (2022). Acquisition of literacy skills using mobile handheld devices and science education students’ academic performance in Universities in Akwa Ibom State, Nigeria. *KIU Journal of Humanities*, 7(21), 101-108.
- Kannan, B., Muthumanickam, A., & Chandrasekaran, S. (2016). Computer anxiety among higher secondary students. *International Journal of Development Research*, 2(4), 1008-1011.
- Nielsen, W., Miller, K. A., & Hoban, G. (2015). Science teachers’ response to the digital education revolution. *Journal of Science Education and Technology*, 24(4), 417–431.
- Oribhabor, C. B. (2020). Investigating the influence of computer anxiety on the academic performance of junior secondary school students in computer studies in Nigeria. *International Journal of Computing Sciences Research*, 4(4), 370-382.
- Owolabi, T. O., Oyewole, B. K. & Oke, J. O. (2013). Teacher education, information and communication technology: Prospects and challenges of e-teaching profession in Nigeria. *American Journal of Humanities and Social Sciences*, 1(2), 87-91.