

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

Winter 1-28-2021

Influence of Self-Concept on Undergraduates' Computer Literacy Skills in Selected Federal Universities in Southwestern Nigeria

Rachael Oyeranti Oyedapo

Obafemi Awolowo University, Ile-Ife Osun State Nigeria, rooyedapo@yahoo.com

Samson Oyeniyi AKANDE Dr.

Department of School Library and Media Technology, Faculty of Education, University of Ibadan., nyakand@yahoo.com

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

Oyedapo, Rachael Oyeranti and AKANDE, Samson Oyeniyi Dr., "Influence of Self-Concept on Undergraduates' Computer Literacy Skills in Selected Federal Universities in Southwestern Nigeria" (2021). *Library Philosophy and Practice (e-journal)*. 5035.
<https://digitalcommons.unl.edu/libphilprac/5035>

Influence of Self-Concept on Undergraduates' Computer Literacy Skills in Selected Federal Universities in Southwestern Nigeria

INTRODUCTION

In recent times, computer technologies have influenced all facets of human life ranging from education and leisure to work related activities. Computer literacy skills are indispensable to all undergraduates irrespective of their disciplines. It is an essential set of skills needed by undergraduates in order to cope effectively in the complex technological world of the 21st century. Hence acquisition of adequate computer literacy skills among undergraduates cannot be compromised. Computer literacy skills are capable of broadening the information horizon of undergraduates through access to information in diverse formats especially electronic sources. Aside from accessing information via Internet, computer literacy skills could extend the boundaries of human action through the abilities to use computer applications to enhance academic pursuit.

Paraskevava, Boutaa and Papagiannib (2017) affirmed that having prior experience in computer use can affect undergraduates' computer literacy skills. Prior experience could be interpreted as the amount of time an individual spent working with computers and the different applications. This submission corroborates the Sandbox theory of computer literacy by Pierce (2001) which states that an individual has to be regularly in contact with computers in order to acquire adequate computer literacy skills. On this premise, the theory recommended that individuals should spend at least ten to fifteen minutes of every hour exploring computer in order to be proficient in the use of computer applications.

Twenty first century undergraduates are digital natives which implies that, they grew up alongside computer technologies and as such ought to have attained some level of computer literacy skills. However, there could be some undergraduates who could not explore computer

technologies as expected due to the lack of confidence to tackle the challenges of using computer technologies.

Dincer (2016) defined computer literacy as the level of knowledge and skill regarding the effective use of computer technologies for achieving an individuals' aims. Similarly, Basel (2017) recognised computer literacy as the ability of an individual to efficiently use and work quickly on computer programmes. He further stated that computer programmes comprise fundamental programmes like Microsoft Word, Excel, to more complex engineering computer programmes like Auto Desk CAD. It is obvious from this definition that a positive self-concept is inevitable for undergraduates to be computer literate, hence, they should make frantic efforts to overcome any challenge on the way of acquiring adequate computer literacy skills.

Odede (2015) submitted that undergraduates' computer literacy skills are inadequate and stressed that undergraduates need computer literacy skills in order to be successful in academic and general life endeavours. Akpovire, Olawoyin, Adebayo and Esse (2019) emphasised that undergraduates should be computer literate in order to function efficiently in an environment that is technologically infused. Thus, it is important for undergraduates to acquire adequate computer literacy skills that would be adequate to empower them to work productively in their search for information.

As computer-based learning is becoming increasingly important in school, a positive computer-related self-concept (CSC) might help to enhance cognitive achievement (Langheinrich, Schönfelder, Bogner, 2015). This implies that undergraduates with positive self-concept are expected to possess adequate computer literacy skills. Positive self-concept is an essential factor needed in order to cope effectively in the complex technological world of the 21st century when computer technologies come in different formats and applications.

Without positive self-concept an individual could not be able to maximise the avalanche of opportunities computer technologies afford the 21st undergraduates. Self-concept refers to the cognitive perception about one's skills, ability and knowledge (Wright, 2011). Gupta, Raina, Kumar Verma and Mengi (2015) stated self-concept stressed that it influences undergraduate's identity, self-worth, body image and role in society. Self-concept is learned, organised and dynamic (Marsh and Martin, 2011).

It is assumed that what one impresses in his or her mind is what he or she will express outwardly; undergraduates with positive self-concept would demonstrate self-confidence always in every life endeavour, especially computer literacy skills which is the most crucial need for undergraduates in order to be relevant in the information society. Okonedo and Popoola (2012) acknowledged that if a person has positive self-concept he would estimate himself positively and would likely make favourable inferences about himself. Ackerman (2019) surmised that self-concept is based on belief rather than fact. This explains why undergraduates need to have positive self-concept in order to overcome such problems that they could encounter in using computer technologies.

Laryea, Sanni and Dawson-Brew (2014) opined that self-concept was the best predictor of skill proficiency such as computer literacy skills. In a study of Nigerian undergraduates in Uyo, Iroegbu (2016) found that undergraduates with a high level of positive self-concept often achieve a higher level of academic success. While those with low self-concept achieve lower success rates. Positive self-concept therefore could enhance the acquisition of computer literacy skills. Although there have been various studies on computer literacy skills, most of these studies focused more on elementary and intermediary rather than advanced computer literacy skills. While the 21st century undergraduates need to acquire adequate computer literacy skills that cut across elementary, intermediate and advanced computer literacy skills.

There is an observed paucity of studies on influence of self-concept on computer literacy skills of undergraduates in federal universities in southwestern Nigeria. This study therefore, attempted to bridge the gap by investigating the influence of self-concept on computer literacy skills of undergraduates in federal universities in southwestern Nigeria.

Objectives of the study

Objectives of the study are to:

1. ascertain the level of computer literacy skills possessed by undergraduates in federal universities in southwestern Nigeria;
2. find out the level of undergraduates' self-concept in federal universities in southwestern Nigeria.

Hypotheses

A null hypothesis was tested at 0.05 level of significance:

There is no significant relationship between self-concept and computer literacy skills in federal universities in southwestern Nigeria.

METHODOLOGY

Study area

The study was conducted in three first generation federal universities in southwestern Nigeria which were purposively selected for the study based on year of establishment and well established academic programmes. They were the University of Lagos, Lagos, University of Ibadan, Ibadan and Obafemi Awolowo University Ile-Ife. First generation universities are the first five universities established by the Nigerian government in quick succession in 1962 which are: University of Nigeria, Nsukka, University of Ife, Ile-Ife (now Obafemi Awolowo University), Ahmadu Bello University, Zaria, University of Lagos and University of Ibadan).

Study design

A mixed method was employed for this study involving both quantitative and qualitative aspects. The study was a descriptive survey of the correlational type. To obtain quantitative data, self-administered semi structured questionnaire, while the focus group discussion (FGD) was employed for the qualitative data. The study population included all 300 level undergraduates in the selected universities totalled 14,440. At the first stage, the three first generation federal universities in southwestern Nigeria were purposively selected; they were the University of Lagos, Lagos, University of Ibadan, Ibadan and Obafemi Awolowo University Ile-Ife. At the second stage of the sampling procedure, three faculties were randomly selected out of all the faculties that were commonly available in the three universities selected for the study using simple random sampling. This is to ensure that the same faculties were selected in all the selected universities for the study. Thus, the faculties of Science, Social Sciences and Education were selected for the study. At the third stage, nine (9) departments out of all the departments that were commonly available in the faculties selected were randomly selected using balloting system from each of the university selected for the study. Therefore, a total of (27) department were involved in the study. At the fourth stage, the sample size was determined using 60% sampling fraction of the 300L undergraduates to ensure wide generalisation. . The sample size for the study was 1,318 being 60% of the population which was 2,202.

Measures

The Computer literacy Sub-Scale ($\alpha=0.86$) was adapted from the “Companion to the Maryland Technology Literacy Standards for Students” (CMTLSS) scale (2016). It consisted of 25 items which elicited information on undergraduate’s ability to use computers, use and create databases, use digital imaging tools, use and create web pages, use word processing and desktop publishing. The Self-concept Sub-Scale ($\alpha=0.70$) (SCS) was adapted from Aboyade

(2014). It was a 15 item sub-scale which elicited information on social, personal and identity aspects of self-concept. Qualitative data was obtained through focus group discussions (FGDs). The instrument was given to four educational media professionals and a psychologist for the face and content validity.

Inclusion and exclusion criteria

All 300 level undergraduates in the selected universities who gave consent and were in school on the day of data collection were included in the study. All 300L who did not voluntarily give their consent to partake in the study or who were absent at the time of data collection were excluded from the study.

Procedure for Data collection

Permission was obtained from all Heads of department in the three universities selected for administration of the questionnaire and for the selection of discussants for focus group discussions. Three research assistants were involved in the study along with the researchers, one assistant in each university. Out of the 1,318 copies of questionnaire administered, 1,169 were properly filled and analysed giving a response rate of 88.7% which was considered to be adequate for the study. Data collected through the questionnaire was analysed using the Statistical Package for Social Sciences (SPSS) version 21. Twenty-four (24) participants were involved in the FGDs. FGD analysis was based on the major themes identified in the study (computer literacy skills and self-concept).

Ethical considerations

Participation in the study was voluntary, however, authorisation for the study was duly obtained from departmental heads. The purpose of the study was explained to the respondents. Only those who gave informed consent and were willing were involved in the study.

RESULTS

Table 1: Level of computer literacy skills possessed by undergraduates in federal universities in southwestern Nigeria

S/N	Computer Literacy skills indicators	SD	D	A	SA	Mean	S.D
Computer use							
Ability to							
1.	Log on /off the computer	23 2.0%	74 6.3%	223 19.1%	849 72.6%	3.62	.69
2.	Recognise and use icons to perform computer functions	14 1.2%	103 8.8%	319 27.3%	733 62.7%	3.51	.71
3.	Locate and retrieve files in various directories	16 1.4%	119 10.2%	357 30.5%	677 57.9%	3.45	.73
4.	Locate and use accessibility features as needed	18 1.5%	140 12.0%	420 35.9%	591 50.6%	3.36	.75
5.	Attach and use peripheral devices such as scanners, digital cameras, media storage (e.g. flash drive) and projection devices	24 2.1%	162 13.9%	363 31.1%	620 53.0%	3.35	.79
Criterion Mean = 2.50 Weighted Mean = 3.46							
Create databases							
6.	Search for specific data/information by field	24 2.1%	156 13.3%	405 34.6%	584 50.0%	3.33	.78
7.	Add and delete records	30 2.6%	180 15.4%	385 32.9%	574 49.1%	3.29	.82
8.	Edit data in existing database records	24 2.1%	179 15.3%	416 35.6%	550 47.0%	3.28	.79
9.	Open an existing database file	22 1.9%	163 13.9%	399 34.1%	585 50.0%	3.20	.78
10.	Insert graphics/digital files, etc., into field type	46 3.9%	245 21.0%	409 35.0%	469 40.1%	3.11	.87
Criterion Mean = 2.50 Weighted Mean = 3.26							
Use digital imaging tools							
11.	Create original or edit existing images	45 3.8%	220 18.8%	424 36.3%	480 41.1%	3.15	.86
12.	Import a digital image into a document or presentation	44 3.8%	225 19.2%	409 35.0%	491 42.0%	3.15	.86
13.	Edit photos and images	61 5.2%	210 18.0%	396 33.9%	502 42.9%	3.15	.89
14.	Change image colours and patterns	49 4.2%	218 18.6%	434 37.1%	468 40.0%	3.13	.86
15.	Use tools to create original image	46 3.9%	255 21.8%	422 36.1%	446 38.2%	3.08	.87
Criterion Mean = 2.50 Weighted Mean = 3.13							
Use and create web pages							
16.	Create web/hypertext links	49 4.2%	229 19.6%	311 26.6%	580 49.6%	3.22	.90
17.	Access a web page from bookmarks or by typing in the URL	54 4.6%	218 18.6%	347 29.7%	550 47.0%	3.19	.90
18.	Locate and use bookmarks	51 4.4%	234 20.0%	378 32.3%	506 43.3%	3.15	.89
19.	Copy images or documents from a website	58 5.0%	240 20.5%	396 33.9%	475 40.6%	3.10	.89
20.	Preview and print datasheet	68 5.8%	253 21.6%	367 31.4%	481 41.1%	3.08	.92
Criterion Mean = 2.50 Weighted Mean = 3.15							
Use word processing and desktop publishing							
21.	Save a document	22 1.9%	131 11.2%	246 21.0%	770 65.9%	3.51	.77
22.	Start a new document	39 3.3%	143 12.2%	250 21.4%	737 63.0%	3.44	.83
23.	Insert graphics and clip art	28 2.4%	151 12.9%	270 23.1%	720 61.6%	3.44	.81
24.	Insert and edit tables and table layout (borders, shading, column width, etc.)	37 3.2%	173 14.8%	278 23.8%	681 58.3%	3.37	.85
25.	Insert text boxes	38 3.3%	171 14.6%	312 26.7%	648 55.4%	3.34	.84
Criterion Mean = 2.50 Weighted Mean = 3.42							
Overall weighted mean =3.28							

Table 1: Presents the level of computer literacy skills possessed by the undergraduates based on five key indicators which are: computer use; using and creating databases; using digital imaging, using and creating webpages; using word processing and desktop publishing. The results revealed that the ability to use computer ($\bar{x} = 3.46$) ranked highest. This was closely followed by the ability to use word processing and desktop publishing ($\bar{x} = 3.42$). The least indicator was the ability to use digital imaging tools ($\bar{x} = 3.13$). It can therefore be deduced that the undergraduates in federal universities in southwestern Nigeria possessed a relatively high level of computer literacy skills, since the overall weighted mean ($\bar{x} = 3.28$) is greater than the criterion mean ($\bar{x} = 2.50$).

FOCUS GROUP DISCUSSION (FGD)

Using the FGD to further elucidate upon the level of computer literacy skills of the respondents, the discussants' of the FGDs were asked to rate their level of computer literacy skills. The discussants rated their computer literacy skills to be high. FGD participants claimed that they possessed high level of computer literacy skills and have knowledge of computer applications. Discussants from Unilag stated,

“I have been supporting myself from using my computer literacy skills. It helps me a lot and I also help my classmates with doing some work on the computer. I also like to devise new methods to use software which is different from what others are doing. For instance, some tasks on the computer that will take other people an hour, takes me approximately 30 minutes to carry out. I will therefore rate my level of computer literacy skill to be as high as 90% because I am quite advanced and very vast on computer applications.” (23-year-old 300L UNILAG male discussant)).

Another participant from OAU claimed that he possessed high level of computer literacy skills and have knowledge of computer applications

“I use my computer literacy skills for video editing, use different softwares...” (23-year-old 300L OAU male discussant)

It could be deduced from the responses of the FGD discussants that the undergraduates possessed relatively high levels of computer literacy skills.

Table 2 Level of self-concept of undergraduates in federal universities in southwestern, Nigeria

S/N	Self –concept Indicators	CF	MF	PFPT	MT	CT	Mean	S.D
Personal								
1.	I take a positive attitude toward myself	156 13.3%	140 12.0%	89 7.6%	229 19.6%	555 47.5%	3.76	1.47
2.	I think I am as good as other student	106 9.1%	159 13.6%	177 15.1%	309 26.4%	418 35.8%	3.66	1.33
3.	I am friendly person in and outside the campus	125 10.7%	158 13.5%	214 18.3%	257 22.0%	415 35.5%	3.58	1.37
4.	I always express my feelings freely	101 8.6%	164 14.0%	239 20.4%	328 28.1%	337 28.8%	3.54	1.27
5.	I am used to talking rational decision	99 8.5%	183 15.7%	243 20.8%	333 28.5%	311 26.6%	3.49	1.27
Criterion mean = 3.00 Weighted mean = 3.61								
Social								
6.	“I feel I am a person of worth”	130 11.1%	178 15.2%	147 12.6%	217 18.6%	497 42.5%	3.66	1.43
7.	“I ought to get along better with other people”	110 9.4%	207 17.7%	258 22.1%	307 26.3%	287 24.6%	3.39	1.29
8.	I have warm social attractions for others	100 8.6%	195 16.7%	287 24.6%	331 28.3%	256 21.9%	3.38	1.23
9.	I am not concerned about what other people think about me	100 8.6%	216 18.5%	313 26.8%	281 24.0%	259 22.2%	3.33	1.24
10.	I often feel withdrawn to my self	169 14.5%	233 19.9%	265 22.7%	286 24.5%	216 18.5%	3.13	1.32
Criterion mean = 3.00 Weighted mean = 3.38								
Identity								
11.	I express my feelings freely	106 9.1%	155 13.3%	248 21.2%	268 22.9%	392 33.5%	3.59	1.31
12.	I can face any difficulty in life	113 9.7%	205 17.5%	227 19.4%	292 25.0%	332 28.4%	3.45	1.32
13.	I am ambitious on attaining and mastering of things	163 13.9%	181 15.5%	209 17.9%	246 21.0%	370 31.7%	3.41	1.42
14.	“ I feel I do not have much to be proud of”	285 24.4%	236 20.2%	256 21.9%	213 18.2%	179 15.3%	2.80	1.39
15.	I often face experience a feeling of worthlessness and helplessness in life	284 24.3%	236 20.2%	270 23.1%	215 18.4%	164 14.0%	2.78	1.37
Criterion mean = 3.00 Weighted Mean = 3.20								
Overall weighted mean =3.40								

Table 2: presents information on self-concept of the respondents using the weighted mean as benchmark. In determining the level of self-concept of the respondents, three indicators: social factors, personal factors and identity of the respondents were investigated. The personal indicator of self-concept was ranked highest (\bar{x} =3.61). While the identity indicator was ranked lowest among the three indicators. The weighted mean (\bar{x} =3.20) was higher than the

criterion mean ($\bar{x} = 3.00$). Thus, it can be inferred from this result that the level of self-concept of undergraduates in federal universities in southwestern Nigeria is high.

Focus group discussion (FGD)

How would you rate your level of self-concept?

Discussants of the focus group discussions in the three universities selected for the study rated their self-concept level as high, when asked to rate their level of self-concept using percentages,

FGD discussants stated that:

An OAU discussant stated,

“I rate myself 80% because as long as I conceive an idea I pursue it to the end”.
(22-year-old 300L OAU male discussant)

Another discussant from Unilag stated that:

“I have a very high level of self-concept I seldom depend solely on my point of view and knowledge, I seek knowledge and advice before I finally decide what to take care of. With my knowledge of myself and abilities I can say boldly that the level of my self-concept is 90%”.
(23-year-old 300L Unilag male discussant)

It is evident from the responses that the undergraduates possessed high levels of self-concept”

Testing of Hypothesis:

Hypothesis: There is no significant relationship between self-concept and computer literacy skills in federal universities in southwestern Nigeria.

Table3: Pearson Product Moment Correlation (PPMC) showing the relationship between self-concept and computer literacy skills of undergraduates

Variables	Mean	Std. Dev.	n	r	p-value	Remarks
Self-concept	50.9435	12.5167	1169	.138*	.000	Sig.
Computer literacy skills	82.1129	13.8283				

* Sig. at 0.05 level

Table: 3 shows that there is a significant relationship between self-concept and computer literacy skills of undergraduates ($r = .138, n=1169, p(.000)<.05$). Hence, it could be deduced that self-concept enhanced undergraduates' computer literacy skills in the study.

The hypothesis is therefore rejected.

Discussion of findings

The study revealed that the respondents possessed a relatively high level of computer literacy skills. The finding is in concordance with Ogbuiyi, Ogbuiyi and Oriogu (2014) who found that the level of computer literacy skills of Nigerian undergraduates is high. The FGD discussants corroborated the findings of the questionnaire survey. Discussants of the FGDs from all the institutions surveyed expressed similar views by stating categorically that they possessed relatively high levels of computer literacy skills in their own assessment.

The findings of the study is the evidence that Nigerian undergraduates' computer literacy skills is dynamic, and that there has been an improvement on what Emwanta and Nwalo (2012) found that (83.9%) of undergraduates lack necessary skills to use e-resources. Omona and Ikoja – Odonga (2015) found that about half Nigerian undergraduates did not possess adequate computer-literacy skills. Okokon and Ohwahwa (2016) found that only 10% of undergraduates were computer literate and 90% were not literate in use of computer and lacked a functional computer literacy foundation upon which to build new technology skills. Clearly, Nigerian undergraduates are progressing steadily in the quest for acquiring computer literacy skills. This findings clearly substantiate the sandbox theory of computer literacy (Pierce, 1998), which states that an individual's computer literacy skills level could be enhanced by constant interaction with computers and exploration in an unstructured manner in order to become proficient with the use of the computers. Computer literacy skills have become essential skills for all university admission seekers which could account for the high level of computer literacy skills possessed by the respondents.

The findings of the study revealed that the respondents possessed a high level of self-concept. Evidently, universities had imparted great qualities such as self-confidence, self-reliance among other virtues in the respondents which enhanced positive self-concept in undergraduates. Therefore, the respondents' self-concept improved as they are in the university environment which is all encompassing where undergraduates could acquire experiences that could foster their self-concept. The findings of the focus group discussion further elucidated the quantitative findings as the discussants of the FGDs rated their self-concept level as high. The findings of the study supports Cherry (2018) who asserted that self-concept is the foundation upon which personality is built. This implies that possessing a positive self-concept by undergraduates can enhance computer literacy skills. Thus, a positive self-concept cannot be undermined, if undergraduates' computer literacy skills should be sustained.

The study corroborates the view of Okonedo and Popoola (2012) who affirmed that individuals with positive self-concept evaluate themselves positively and are likely to make inferences about themselves and be accepting of their identity. Positive self-concept cannot be undermined by undergraduates who want to be self-actualised. It is evident that individuals who have evaluated themselves positively, would have the requisite to embark on any task such as acquisition of computer literacy skills. The findings of the study also show that the relationship between self-concept and computer literacy skills of undergraduates in federal universities in southwestern Nigeria is significantly positive. Consequently, self-concept is positively correlated with computer literacy skills of undergraduates.

Conclusion

The study investigated the influence of self-concept on computer literacy skills of undergraduates in federal universities in southwestern Nigeria. The study revealed that

undergraduates possessed a relatively high level of computer literacy skills. This is encouraging and it gives hope for the future career of undergraduates. Positive self-concept influences the acquisition of computer literacy skills which, are very germane to undergraduates' all-around development. Self-concept should therefore not be undermined by all stakeholders, because a positive self-concept could have far reaching implications in skills acquisition by undergraduates in federal universities in southwestern Nigeria.

Recommendations

The following recommendations are proffered based on the findings of the study:

1. University administrators should not relent efforts in providing an enabling environment that would sustain the high level of computer literacy skills possessed by the undergraduates.
2. There should be regular training on computer applications to enable undergraduates maintain high proficiency in the use of computers.
3. Undergraduates should acknowledge positive self-concept as cardinal to all life endeavours as such make frantic efforts to sustain the high level of self-concept.

REFERENCE

- Ackerman, C. (2019). What is self-concept theory? A Psychologist explains. *Positive psychology studies* Retrieved Mar. 17, 2019 from Positive Psychology.com.
- Akpovire, E., Olawoyin, O.R., Adebayo, O. and Esse, Ugwunwa C. (2019). Role of information literacy skills on use of information resources by medical students in Lagos state. *Library Philosophy and Practice (e-journal)* Retrieved July 13, 2019, from <http://digitalcommons.unl.edu/libphilprac/2148>.
- Basel, D. (2017). Importance of computer skills. Retrieved July 20, 2018, from <http://educonnet.co.za/importance-of-computer>.
- Cherry, K. 2018. What is self-concept and how does it form? Very well mind. Retrieved Sept. 4, 2018 from <https://www.verywellmind>.

- Dinçer, S. (2016). Assessing the computer literacy of university graduates The Third International Conference on Open and Flexible Education (ICOFE 2016) Retrieved Nov 13, 2020 from <https://www.researchgate.net/publication/308349331>.
- Emwanta, M. & Nwalo, K. I. N. (2013). Influence of computer literacy and subject background on use of electronic resources by undergraduate students in universities in South-western Nigeria. *International Journal of Library and Information Science*, 5. 2: 29-42. Retrieved June 2018, from <http://www.academicjournals.org/IJLIS>.
- Gupta, R. K., Raina, S. K., Kumari, R., Verma, A. K. & Mengi, V. (2015). Assessment of “self-concept” among undergraduate medical students of a medical college in North-West India. *Public Health Research*, 5. 3: 79-82. Retrieved June 4, 2017, from article.sapub.org/10.5923.j.phr.20150503.03.html
- Iroegbu, M. N. (2016). Influence of self-concept and anxiety on the academic excellence of undergraduates students. Retrieved Feb 6, 2017, from <http://www.sciencedomain.org>
- Langheinrich, J. Schönfelder, M., Bogner, F.X. (2015). Measuring the Computer-Related Self-Concept. <https://journals.sagepub.com/doi/abs/10.1177/0735633115621066>
- Laryea, J. E., Sanni, A and Dawson-Brew, E. (2014). Influence of students -concept on their academic performance in the eliminaship, township. *European Journal of Research and Reflection in Educational Sciences* 2. 4: 1-10. Retrieved April 14, 2016, <http://www.idpublications.Org/>
- Marsh, H. W. and Martin, A. J. (2011) Academic self-concept and academic achievement: relations and causal ordering. *British Journal of Educational Psychology* 81. 59-77. Retrieved Apr.18, 2016, from www.ncbi.nlm.nih.gov/pubmed/21391964
- Odede, I. (2015). Undergraduates’ computer skills and the use of online information resources: a case study of library and information science students of Delta state university, Nigeria *International research: Journal of library and information science* 5.4. Retrieved Mar. 5, 2017, from Proquest.com
- Ogbuiyi, D. C., Ogbuiyi, S. U. & Oriogu, C. D.(2014). Influence of computer literacy skill and online searching on undergraduates’ use of academic materials in Babcock University library. *Journal of Humanities and Social Science* 19. 7: 49-53. Retrieved Feb. 28, 2017. from <https://www.wiosrjournals.org>
- Okokon, G. E.& Ohwahwa, O. C. (2016). Factors responsible for the gap between computer literate and computer illiterate members of ctutech community. Retrieved July 13, 2017, from <http://www.crtech247.com>.
- Okonedo, S & Popoola, S. O. (2012). Effect of self-concept, knowledge sharing and utilization on research productivity among librarians in public universities in South-West, Nigeria. *Library Philosophy and Practice (e-journal)* 865. Retrieved Nov. 17, 2015, from digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2040&context.
- Omona, W. & Ikoja-Odonga, R. (2015). Application of ICT in health information access and dissemination. *Journal of Librarianship and information science* 38.45.

Paraskevaa, F., Boutaa, I. H. & Papagiannib, A. (2017). Individual characteristics and computer self-efficacy in secondary education teachers to integrate technology in educational practice.

Pierce, B. (2001). Theory of computer literacy. Retrieved Jan. 20, 2017, from <http://www.frigatezine.com/essay/view/evi02bil.html>.

Wright, A. (2011). What impact does the learning environment have on self-concept? Retrieved July 14, 2016, from <https://theses.ncl.ac.uk/>