Full Length Research Article

THE DEGREE OF UTILIZATION OF CLOUD COMPUTING APPLICATION AMONG HEALTH EDUCATORS IN TERTIARY INSTITUTIONS IN SOUTHEAST NIGERIA

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ABSTRACT

Background: Cloud computing application is a necessity in service delivery particularly in education sector.
Aim: To determine the degree of utilization of cloud computing applications among health educators in tertiary institutions in Southeast Nigeria and to verify the null hypotheses of no significant differences.
Methods and Materials: A descriptive survey research was conducted on 250 health educators in tertiary institutions in Southeast Nigeria. Both purposive and simple random techniques were employed. Data was collected through interview method and questionnaire. Descriptive statistics was adopted for data analysis. All the analyses were done using SPSS version 18.
Results: The result indicated that the degree of utilization of cloud computing applications among health educators in tertiary institutions in Southeast Nigeria is high. Statistically, significant differences existed on the variables of gender; years of teaching experience; location and marital status while no significant differences were shown on religious affiliation and educational qualification.
Conclusion: The degree of utilization of cloud computing applications among health educators in tertiary institutions in Southeast Nigeria is high. This finding is quite encouraging as it reflects the quality of service delivery in teaching profession in universities.

INTRODUCTION

The use of cloud computing application by health educators in tertiary institutions is a necessity with multiple benefits in education sector. The concept of cloud computing application signifies an innovation in the world of technology that enables migration and desktop use to web-based applications such as Gmail, Google calendar, Face book, Skype, and Blog. Contextually, Sivakumar and Singaravelu (2016) see cloud computing application as a new paradigm of the technology world that provides long term mailing services and web based applications which are accessible with a variety of computer and mobile platforms. However, in addition to professional standards well spelt out by Teachers' Registration Council of Nigeria (2010), to guide teachers on their duties as teaching professionals, the use of cloud computing application is very important. This is because the educational institutions worldwide have embraced the recent trend in the use of information and communication technology –ICT, computer software and cloud computing applications.

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There is evidence that, at the university level, students' intentions to use Google Docs are positively and significantly correlated with the constructs from the Theory of Planned Behaviour (Taylor and Scott, 2013). This suggests that both the students and lecturers benefit greatly from the use of cloud computing application. Recently, Majhi and Maharana (2015) who examined the awareness and usage of cloud computing application among LIS professional of 17 Indian University Libraries found that all the respondents use the internet. In order to achieve the aim of education which is the all round development of child's personality (Debdas and Santosh, 2016), the use of cloud computing application among health educators was considered. Reasons were attributed to the fact that health educators in tertiary institutions are exposed to diverse fields of research including disease prevention, family life and sex education, drug, tobacco and alcohol education, maternal and child health, health promotion, among others (Ugwu *et al*., 2016b). Thus, in order to excel on the aforementioned fields of research, the use of cloud computing becomes indispensible for health educators who prepare teachers and educators work towards attaining the aim of education. Although previous studies (Taylor and Scott, 2013; Majhi and Maharana, 2015; Sivakumar and Singaravelu,

2016), have focused on cloud computing application using various target groups, yet data regarding the utilization of cloud computing application among experts and professionals in unique discipline such as health education particularly in tertiary institution is not sufficient. It is earlier reported that health educators have positive attitude towards their roles as teaching professionals (Ugwu *et al*., 2016b). They are equally committed to conducting empirical research which is dependent, to a great extent, on their proficiency in the use of cloud computing application. Thus, the present study was poised to determine the degree of utilization of cloud computing applications among health educators in tertiary institutions in Southeast Nigeria and also to verify the null hypotheses of no significant difference between socio-demographic variables of gender, years of teaching experience, religious affiliation, location, marital status and educational qualification. This was the major focus of this study.

MATERIALS AND METHODS

A descriptive survey research was conducted on 250 health educators in tertiary institutions in Southeast Nigeria. Two-stage sampling procedures involving purposive and simple random techniques were adopted in drawing the study sample. Data was collected through interview method and questionnaire. The validated item statements measured the degree of utilization of cloud computing application among health educators in tertiary institutions with five point response options. That is to say that, each of the items has five options for selection. Descriptive statistics was used for data analysis. All the analyses were done using SPSS version 18. The cut-off point for the weighted mean score was 3.0 accrued from the five-point response options. Thus, the mean value of 3.0 and above signifies high degree of utilization while below indicate low utilization. All the postulated null hypotheses were verified at 0.05 level of significance. This study was approved by the Research Review Committee of Ministry of Education in Nigerian. The informed consent of the health educators was obtained. This consent was approved by the Ethical Committee of Nigerian Universities and the Ministry of Education.

RESULTS

Table 1 showed that 58.8% of the respondents were males while 41.2% were females.

Table 1. Demographic Characteristics of Health Educators in Tertiary Institutions (N = 250)

Variables	f (%)
Gender	
Male	147 (58.8)
Female	103 (41.2)
Years of Teaching Experience	
Below 21	113 (45.2)
21 years and above	137 (54.8)
Religious affiliation	
Christianity	205 (82.0)
Muslim	39 (15.6)
Pagan	6 (2.4)
Location	
Urban	143 (57.2)
Rural	107 (42.8)
Marital Status	
Unmarried	39 (15.6)
Married	186 (74.4)
Divorced	6 (2.4)
Widowed	22 (8.8)
Educational Qualification	
First Degree (B.Sc)	92 (36.8)
Higher Degree (Ph. D, M.Ed)	158 (63.2)

About 45.2% were below 21 years of teaching experience while 54.8% were above 21 years of teaching experience.

Table 2. Presenting the Degree of Utilization of Cloud Computing Application among Health Educators in Tertiary Institutions in Southeast Nigeria (N = 250)

Degree of Utilization of Cloud Computing Application	N	Mean	Standard Deviation	Remark
Grand Mean Value	250	3.32	.231	High

Table 3. Showing Significant Differences between variables of the Respondents

Variables	N	Mean	Standard Deviation	t-cal	P-value	Remark
Gender				-.02	.31	*
Male	147	2.83	.208			
Female	103	3.21	.121			
Years of Teaching Experience				.01	.06	*
Below 21 years	113	3.04	.491			
Above 21 years	137	3.22	.920			
Religious Affiliation				-3.0	.03	**
Christianity	205	3.63	.571			
Muslim	39	2.91	.451			
Pagan	6	3.32	.082			
Location				-.21	.21	*
Urban	143	3.01	.153			
Rural	107	3.03	.132			
Marital Status				-.81	.14	*
Unmarried	39	3.42	.247			
Married	186	3.05	.011			
Divorced	6	2.19	.819			
Widowed	22	3.47	.313			
Educational Qualification				.42	.02	**
First Degree	92	3.1	.013			
Higher Degree	158	3.04	.001			

*Significant at 0.05 level; **Not Significant at 0.05

Approximately 16% were Muslims, 2.4% Pagans and 82% were Christians. Over 57% were in urban location while about 42.8% were in rural settings. Only 2.4% were divorced, 8.8% were widowed, 15.6% were not married while 74.4% were married. Approximately 37% were first degree holders while more than 63% were higher degree holders. Data in Table 2 showed that the average mean score 3.32 and standard deviation 0.231 on the degree of utilization of cloud computing application among health educators in tertiary institutions was above the cut-off point of 3.0 indicating high.

This implied that the degree of utilization of cloud computing applications among health educators in tertiary institutions in Southeast Nigeria was high. From Table 3, it is revealed that there were statistical significant differences between the variables of the respondents in relation to the degree of utilization of cloud computing applications in tertiary institutions. Statistically, Table 3 showed that significant differences exist on the variables of gender; years of teaching experience; location and marital status (P-value > 0.05) of the respondents while religious affiliation and educational qualifications showed no significant difference (P-value < 0.05).

DISCUSSION

There is no doubt that cloud computing application is a necessity in service delivery particularly in educational institutions. This present study as a proof revealed that the degree of utilization of cloud computing application among health educators in tertiary institutions in Southeast Nigeria was high. The finding was expected and quite encouraging

because it portrayed the quality, efficacy, skills and professional competencies as invested in teaching professional by the health educators. Statistically, the study also indicated that significant differences existed between variables of the respondents regarding the degree of utilization of cloud computing application. The present study agreed with Majhi and Maharana (2015) who examined the awareness and usage of cloud computing application among LIS professional of 17 Indian University Libraries and found that all the respondents from all the considered universities of Odisha use the internet. The high use of cloud computing has effectively contributed immensely in reducing the workloads of health educators in their profession especially in tertiary institutions.

This could be attributed to the fact that cloud computing application is cost effective, reliable and more secure in sourcing data, analysis, and preparation of health topics. In a descriptive study which focused on the application of cloud computing at KTU, revealed that cloud computing application can help the schools to solve many problems and improve the educational process (Regina, Germanas and Danute, 2011). The present study was also in accordance with Adeoye (2015) who reviewed the utilization of cloud computing in education and found that cloud computing is the better ICT utilization mechanism for educational institutions teaching, learning and a service delivery requirement, for it enables wise and strategic use of technology that significantly reduces costs. However, the demanding job of teaching profession especially in tertiary institutions makes effective utilization of cloud computing application indispensible in service delivery. It is a known fact that both the students and health educators benefit greatly from the use of cloud computing application. Taylor and Scott (2013) who conducted a survey on the students' use of cloud computing application revealed that, at the university level, students' intentions to use Google Docs are positively and significantly correlated with the constructs from the Theory of Planned Behaviour.

Conclusion

This surface study has attempted to show the degree of utilization of cloud computing applications among health educators in tertiary institutions in Southeast Nigeria. The result of this descriptive survey was quite encouraging because it portrayed the quality, efficacy, skills and professional competencies invested in teaching professions. It also reflected the quality of service delivery in education sector. It is a known fact that health educators are researchers who persistently update their professional knowledge and expertise in the diverse fields of health and other related areas.

This, however, suggested that constructive efforts should be directed towards encouraging consistent use of cloud computing application in tertiary institution for effective service delivery and improvement in professional competences. The present study is not an in-depth survey. Thus, only 250 health educators in tertiary institutions were descriptively investigated.

Recommendation

- Since the present study is a surface survey, there is need for a more detailed and comprehensive in-depth survey focusing on the degree of utilization of cloud computing application. Such study should include other variables of age, and category of appointment of the respondents.
- The educational institutions should encourage the utilization of cloud computing application among health educators and other academic staff of the universities through the organization of conferences, seminars and workshops. Such social interaction and academic exercise with the use of experts and professionals in the field of information and communication technology –ICT mechanism would be instrumental in bridging the gaps in professional ethics and competences.
- Since the world has migrated into ICT and other technological advancement, a good competence on the use of cloud computing application should serve as one of the criteria for promotion and appointment of health educators in tertiary institutions.

REFERENCES

Adeoye, A. 2015. Utilization of cloud computing in education. *Journal of Global Research in Computer Science.* 6(4), pp.10-11.

Debdas, S., and Santosh, K. B. 2016. Attitude of college teachers towards teaching profession. *American Journal of Educational Research.* 4(11), pp. 834-839.

Majhi, S., and Maharana, B. (2015) Awareness and usage of cloud computing application among LIS professionals: A case study of 17 Indian University Libraries. Library Philosophy and Practice. Available online at *http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article= 3421&context=libphilprac.*

Regina, M., Germanas, B. and Danute, A. 2011. Application of cloud computing at KTU: MS Live @ Edu Case. Informatics in Education. 10(2), pp.259-270.

Sivakumar, A., and Singaravelu, G. 2016. Utilization of cloud computing application. *American Journal of Educational Research.* 4(11), pp. 792-797

Taylor, C.W., and Scott, H. 2013. A study of student use of cloud computing application. *Journal of Information Technology Management.* 22(3), pp.36-50.

Teachers Registration Council of Nigeria. 2010. Professional standards for teachers and trainers in education and training. Teachers Registration Council of Nigeria.

Ugwu, C. U., Ofuebe, J. I., Umoke, P. C., and Agbaje, S. O. 2016[b]. The attitude of health educators towards their role as teaching professionals in tertiary institution in Southeast Nigeria. *American Journal of Educational Research.* 4(15), pp. 1062-1067.

Ugwu, C. U., Umeifekwem, J. E., Ofuebe, J. I. and Dibia, S. I. 2016[a]. A descriptive analysis of teachers' professional competences needed for academic activities in educational institutions in Nigeria. *Journal of Education.* 4(2), pp. 1-8.

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