

Skill Acquisition: An E-Learning Approach

Aneke Stephen O¹, Ezugwu Assumpta O²

¹(Department of Computer Science, University of Nigeria, Nsukka, Nigeria)

²(Department of Computer Science, University of Nigeria, Nsukka, Nigeria)

Corresponding Author: Aneke Stephen O

Abstract: The attention of the Nigerian Government for over twenty years now has been on youth's empowerment through skill acquisition for self-realisation and economic independence. The Government and individuals, both in the past and present have designed skill acquisition programmes that seem not to be impacting much on the youths due to problem of low self-esteem, master-apprentice gap, abuse and some other ugly experiences youths encounter in the course of their training. Therefore, this work looks at how skill can be acquired through e-learning platform. Experimental methodology was used to demonstrate that skill can be acquired from the comfort of the trainee's home as long as there is availability of internet service, the trainee does not need any formal education to qualify but it can be an advantage.

Date of Submission: 02-10-2018

Date of acceptance: 19-10-2018

I. Introduction

The current trend of technological advancement has positively affected communication which is a vital key in learning. Information and Communication Technology (ICT) happens to be one of the technological innovations in recent times. It has actually permeated into virtually every profession and all works of life. E-Learning can be seen as a form of learning while utilizing electronic technologies that are now available to access educational curriculum outside of a traditional classroom [1,2]. Sometimes it has a pointer in the direction of a course, program or degree that are delivered completely online.

Because e-learning has recorded a steady growth [3], it has been considered as a paradigm in modern education which is characterised by advanced technologies on ground. In the early days of e-learning before it went viral, many people had the notion of e-learning as mere bringing computers into the classroom without having any human element to do the teaching. But this was not the aim of establishing e-learning and it was at this point that e-learning distinguishes from tutorials. Technology has so much evolved to the point that smartphones and tablets are now widely embraced in both classrooms, offices and every sphere of human endeavour. According to [4], an observation on the growth of the popularity of e-learning courses and the benefits it offers have been made. Such courses does not only benefit students, educators equally benefit from it as it offers more flexibility about the place, pace and time at which to study, making education more widely accessible.

Apprenticeship is a kind of job training that involves following and studying to master of a skill in order to learn that particular skill [1]. Though recently apprenticeship can be used to describe a number of educational ideas, in this paper, it is used explicitly to mean the training of unskilled individuals. The traditional approach originally has been based upon transfer of skills and knowledge, or in a legally binding agreement whereby the apprentice exchange labour for food, shelter and clothing.

With the existence of the internet which has vast array of information, individuals have been able to learn a lot of things when it comes to acquiring a skill. An apprentice does not necessarily have to exchange labour for food or anything but can acquire a basic knowledge on a particular skill with ease. The attention of the Nigerian Government for over twenty years now has been on youth's empowerment through skill acquisition for self-realisation and economic independence. The Government and individuals, both in the past and present have designed skill acquisition programmes that seem not to be impacting much on the youths due to problem of low self-esteem, master-apprentice gap, abuse, cost and some other ugly experiences youths encounter in the course of their training. This system solves these inherent problems and provides a wide range of coverage as far as internet facility is accessible.

How it all began

Skill acquisition can as well be easily seen as a form of learning [5] which is structured in such a way that training is involved in the process of impartation of the relevant knowledge. It can also be said that skilled behaviour and the acquisition of skills is potentially involved in the full range of human behaviour [5]. This is to say that the acquisition of skill dates far back as when human beings began to exist and interact with each other.

The comprehensive documentary of history of skill acquisition may not be feasible according to [5] since there have been skills acquired without considerations to the history. The earliest history of training in skill acquisition and development and organization development (OD) is connected to the origin of education itself [6] which also agrees with the idea in [5]. Learning and Development which play a big role in skill acquisition has been observed to have contributed immensely to the great changes [7] noticed in the field recently.

The industrial revolutions which took place in some countries of the world like the Great Britain were actually powered by massive acquisition of skill. It was noticed that in [6,7,8] that the countries that have experienced industrial revolution and attained the status of developed nations were challenged by the lack of skilled workers in their industries which made the industries not to be impacting much on the economy of the country. This era can be traced to a time in the 19th Century [7] which [8] dated as between 1651 and 1851 for the British industrial revolution. It has been advocated for in [9] that for Nigeria to experience an economic turn-around through industrial revolution, there should be a corresponding increase in the skill acquisition. This means that the Federal Government of Nigeria while trying to empower the Nigerian youths to reduce crime rate in the country, a platform for effective skill acquisition has to be developed and sustained. The standard and quality of living in a locality or nation as can be found in [10] has equally been tied to skill acquisition in human capital development, and can be a contributor to industrial boom.

As has been recorded, the dawn of the First World War, the primary focus became the manufacturing of arms and ammunition. In order to meet up with the needs of the time, these needed to be produced as quickly as possible on a large scale so that the enemies can effectively be subdued. This required a huge increase in the number of people working to create weapons, and lead the Ministry of Munitions to develop training schemes that would enable a significant growth in the workforce as quickly as possible. In a similar way, advanced training schemes were introduced for new recruits to the armed forces, many of whom attended accelerated programmes compared to the normal pattern already created. This skill acquisition was an all-inclusive scheme because the loss of many men who were of working age bracket in the war also necessitated the introduction of women into a variety of roles in the industry. Because of the relatively small number in proportion of women who were working before the war broke out, many industries were forced to provide training for their new female employees to establish an ongoing success so that through this way, support the war effort.

So many years ago before the launching of internet, there were some courses done from distance being offered to students with the intention of providing education on particular subjects or skills. In the 1840's Isaac Pitman [11] made use of correspondence to teach his students shorthand. He would also give them assignments, mark them and send their grades via the same correspondence. It is also observed that in [11], the principles that surround e-learning have been well documented throughout history, and there is evidence which suggests that there were early forms of e-learning as far back as the 19th century. This is to say that the e-learning currently in place has evolved over time and a comprehensive history of e-learning can be seen in [11,12]. The history of e-learning will not be complete if the efforts of [13] Sidney Pressey, a distinguished educational psychology professor at Ohio State University, developed a machine to provide drill and practice items to students in his introductory courses in the early 1920s. This teaching machine that Pressey developed has resemblance with typewriter but it has a window that showed a question with four answers. The user would press the key that corresponds with the correct answer. When the user presses a key, the machine records the answer on a counter to the back of the machine and revealed the next question. After the user must have finished answering the questions, the person scoring the test slipped the test sheet back into the device and noted the score on the counter. This is exactly the technique being employed in online learning which is also an aspect of e-learning that is used to determine the performance of students in any skill acquisition test. This also shows that it is possible to automate the testing and assessment of apprentice using e-learning platform.

II. Material And Methods

This experimental study was carried out on youths at Nsukka, in Nsukka Local Government Area, Enugu State of Nigeria. This was carried out from May, 2018 to July, 2018. A total 35 youths were registered for the skill acquisition and the skill they were trained in was carpentry.

Study Design: Prospective candidates were allowed to choose a place most convenient for them so long as there is internet service and a device to access the internet. Correspondence between the instructor and the candidates was allowed

Training Location: Nsukka is a locality, a town in Nsukka Local Government of Enugu State Nigeria. It is on the eastern part of Nigeria and has boarders with the Middle-Belt region of Nigeria.

Duration of Training: May 2018 to July 2018

Sample size: 35 youths.

Procedure methodology

Students /apprentices enrolled for the training and after the enrolment, Login details were generated for each registrant. An identity number (ID) was generated for each apprentice on the basis of First Come First Served (FCFS). The ID served as a unique identifier for each apprentice since there were possibilities of having more than one apprentice with the same name. The training programme was divided into modules and each module had contents that ran for a given maximum duration of 30 days. At the end of each module, the participants wrote a test to determine how much each person was able to understand the module. The pass mark was 60% and those who scored below the pass mark were made to repeat the module and rewrite the test again while those who got up to the pass mark and above proceeded to the next module.

Module 1 Content

Getting to know the instructor
Introduction to the skill (carpentry)
Familiarization with basic tools used in the skill

Module 2 Content

Learning names and uses of hand-held electronic devices
Learning the names and uses of other electronic devices.

Module 3 Content

Introduction to units of measurements in the skill (Carpentry)
Conversion from one unit of measurement to another.

III. Result

From table no 1 below, S/N column shows the total number of registrants to the programme, a total number of 35 apprentices registered and received apprentice identity number. Apprentice ID column shows the various identity number of each apprentice.

Table no 1 :Shows list of all the all the enrolled apprentices.

S/N	Apprentice ID
1	001
2	002
3	003
4	004
5	005
6	006
7	007
8	008
9	009
10	010
11	011
12	012
13	013
14	014
15	015
16	016
17	017
18	018
19	019
20	020
21	021
22	022
23	023
24	024
25	025
26	026
27	027
28	028
29	029
30	030
31	031
32	032
33	033

34	034
35	035

Table no 2 shows the number of apprentices that sat for Module 1 test, a total number of 30 apprentices wrote the test. This means that 5 registrants with the following apprentice IDs were affected: 005, 009, 016, 020, and 025 and as such could not write the test because they withdrew voluntarily. The result also shows that Apprentice ID 006 scored 50%, apprentice ID 007 scored 30% while apprentice ID 012 scored 45%. These ones scored below the pass mark of 60% and as such cannot proceed to Module 2

Table no 2: Shows the performances of the apprentices after concluding Module 1 test.

S/N	Apprentices ID	Scores (%)
1	001	70
2	002	81
3	003	74
4	004	85
5	006	50
6	007	30
7	008	71
8	010	80
9	011	69
10	012	45
11	013	82
12	014	87
13	015	61
14	017	88
15	018	70
16	019	74
17	021	70
18	022	76
19	023	79
20	024	90
21	026	83
22	027	80
23	028	77
24	029	63
25	030	76
26	031	72
27	032	70
28	033	66
29	034	75
30	035	60

Table no 3 shows the performances of the apprentices in Module 2 test. A total number of 27 apprentices sat for the test which shows the 3 that could not proceed to Module 2. None of the apprentices scored below the pass mark, therefore, all of them proceeded to do Module 3.

Table no 3: Shows the performances of the apprentices after concluding Module 2 test.

S/N	Apprentices ID	Scores
1	001	70
2	002	80
3	003	70
4	004	80
5	008	70
6	010	80
7	011	70
8	013	70
9	014	80
10	015	90
11	017	80
12	018	70
13	019	70
14	021	70
15	022	80
16	019	80
17	021	90
18	022	80
19	023	80
20	024	80

21	026	70
22	027	70
23	028	70
24	029	70
25	030	70
26	031	70
27	032	70

From table 4, the performances of the apprentices at the end of Module 3 test was shown. Two apprentices ie apprentice ID 001 scored 58% and apprentice ID 024 scored 57% had scores that were below the pass mark.

Table no 4:Shows the performances of the apprentices after concluding Module 3 test.

S/N	Apprentices ID	Scores
1	001	58
2	002	77
3	003	70
4	004	83
5	008	74
6	010	85
7	011	69
8	013	72
9	014	87
10	015	90
11	017	77
12	018	70
13	019	66
14	021	71
15	022	83
16	019	79
17	021	88
18	022	87
19	023	76
20	024	57
21	026	70
22	027	60
23	028	76
24	029	67
25	030	70
26	031	75
27	032	70

In table 5 which is the final test on all the Modules, a total of 25 apprentices wrote the test and all of them passed the test. They are 25 in number because of the 2 apprentices that could not proceed to the final test.

Table no 5:Shows the performances of the apprentices at the end of final test.

S/N	Apprentices ID	Scores
1	002	80
2	003	70
3	004	74
4	008	70
5	010	86
6	011	78
7	013	76
8	014	88
9	015	79
10	017	66
11	018	85
12	019	70
13	021	67
14	022	73
15	019	75
16	021	84
17	022	70
18	023	77
19	026	80
20	027	82
21	028	71
22	029	77
23	030	73
24	031	69

IV. Discussion

We observed that among the 35 apprentices that registered, 71.4% of them were able to demonstrate through the tests that were conducted that they acquired the skill without repeating any module. Then at the stage of Module 1, 8.57% of the apprentices could not make it to do Module 2 and 5.71% of the apprentices had to repeat Module 3. 14.29% of the total registrants did not attempt any Module test.

V. Conclusion

Based on the data generated in this experiment and the analysis, it is possible to acquire skill using the e-learning platform. This has the capabilities of cubing to the barest minimum the anomalies associated with the traditional method of skill acquisition; it also offers the apprentice not to feel any form of competition among his peers.

References

- [1]. Jim Haris, 2018, "What is e-learning", eLEARNINGNC : Available: http://www.elearningnc.gov/about_elearning/what_is_elearning/
- [2]. Auer, Michael E., Guralnick, David, and Simonics, Istvan 2017 "Teaching and Learning in a Digital World", Springer journal, Proceedings of the 20th International Conference on Interactive Collaborative Learning – Volume 1. Available: <https://www.springer.com/us/book/9783319732091>
- [3]. Idoko, Cletus Usman, 2014 "Skill Acquisition And Youth Empowerment In Nigeria", Global Journal of Commerce and Management Perspective, ISSN 2319–7285, Vol.3(1):51-54. Available: <https://pdfs.semanticscholar.org/67d5/a7008248f9ed14d691d513dff17e308fd77d.pdf>
- [4]. Florence Undiyaundeye and Ekpungu Anselm Out, 2015, "Entrepreneurship Skills Acquisition and the Benefits amongst the Undergraduate Students in Nigeria", European Journal of Social Sciences Education and Research 5(1), DOI: 10.26417/ejsr.v4i1.p9-14. Available: https://www.researchgate.net/publication/284414043_Entrepreneurship_Skills_Acquisition_and_the_Benefits_amongst_the_Undergraduate_Students_in_Nigeria
- [5]. Joi L. Moore, Camille Dickson and Deane Krista Galyen , "e-Learning, online learning, and distance learning environments: Are they the same?"ELSEVier, The Internet and Higher Education, Volume 14, Issue 2, March 2011, Pp. 129-135, doi.org/10.1016/j.iheduc.2010.10.001. Available: <https://www.sciencedirect.com/science/article/pii/S1096751610000886>
- [6]. Pei-Chen Sun, Ray J. Tsai, Glenn Finger, Yueh-Yang Chen and Downing Yeh, "What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction", Elsevier Journal, Volume 50, Issue 4, May 2008, Pp. 1183-1202. Available: <https://www.sciencedirect.com/science/article/pii/S0360131506001874>
- [7]. Alan Clarke, "e-Learning Skills", (2008), Palgrave Macmillan, 2nd Ed. ISBN:0230573126 9780230573123. Available: <https://dl.acm.org/citation.cfm?id=1481071>
- [8]. Speelman, "Skill acquisition: History, questions, and theories", 02-Speelman-Chap02.qxd, June, 2005. Available: <http://www.enactionschool.com/resources/papers/02-Speelman-Chap02.pdf>,
- [9]. Richard J. Torraco, "Early History of the Fields of Practice of Training and Development and Organization Development", Digital Commons, University of Nebraska, 2016, DOI: 10.1177/1523422316659898. Available: <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1015&context=cehsedadfacpub>
- [10]. Lyndon Wingrove , "The History Of Learning And Development: 1800-1945", Trainingzone. Available: <https://www.trainingzone.co.uk/lead/culture/the-history-of-learning-and-development-1800-1945>
- [11]. Anton Howes "The Relevance of Skills to Innovation during the British Industrial Revolution, 1651-1851", Brown University, August 2016. Available: <http://eh.net/eha/wp-content/uploads/2016/08/Howes.pdf>
- [12]. Sarafa Adebayo Raji "Technical and Vocational Skills Acquisition Training: An Imperative Towards The Achievement Of National Industrial Revolution Plan (NIRP)", Journal of Education and Social Sciences, Vol. 1, (June 2015). Available: http://jesoc.com/wp-content/uploads/2015/07/J_SS_3_TECHNICAL-AND-VOCATIONAL-SKILLS-ACQUISITION-TRAINING-FINAL-PAPER.pdf
- [13]. Begoña Álvarez and Fernando Ramos Palencia, "The Role of human capital in pre-industrial societies: skills and earnings in eighteenth-century Castile (Spain)", European Historical Economics Society, EHES Working Paper, July 2016. Available: http://www.ehes.org/EHES_99.pdf
- [14]. "E-Learning Concepts, Trends, Applications", Epignosis LLC, 2014, Vol 1.1–January 2014. Available: <https://www.talentlms.com/elearning/history-of-elearning>
- [15]. Roberta Gogos, "A brief history of elearning (infographic)", efront, 2013. Available: <https://www.efrontlearning.com/blog/2013/08/a-brief-history-of-elearning-infographic.html>
- [16]. "e-Learning Fundamentals" Fe-ConE team, http://www.leerbeleving.nl/wbts/1/history_of_elearning.html

IOSR Journal of Computer Engineering (IOSR-JCE) is UGC approved Journal with Sl. No. 5019, Journal no. 49102.

* Aneke Stephen O. "Skill Acquisition: An E-Learning Approach." IOSR Journal of Computer Engineering (IOSR-JCE) 20.5 (2018): 61-66.