
SELF-LEARNING MODEL: IMPLICATION FOR INFORMAL EDUCATION USING MOBILE DEVICES

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abdulfattahaa@gmail.com¹**ABSTRACT**

The imperativeness of Information and Communication Technology (ICT) in education is not contestable. With a steady decline in primary-secondary-tertiary enrolment in Nigeria in the face of ever increasing global knowledge environment, the gap between knowledgeable and those who lack knowledge is widening. This paper shows in part how ICT has helped in informal education, building on the achievements of ICT in informal education and increase use of mobile devices. This paper further proposes a model of a personal tutor which is programmable, interactive, and ICT-based, a tool in advancing the reduction in the existing gap between the 'know' and the 'know-not', akin to what is obtainable in a formal education setting.

INTRODUCTION

The development and strength of a society is largely weighed by the level of its educational status. A society with a low standard of education is termed underdeveloped, while that with a reasonably good or high standard is termed developed (Education for All Report, 2013). Therefore, the importance of education in a society cannot be over emphasized (Dangler, 2006).

Over the years, Information and Communication Technologies (ICT) via digital networks, computers, television, telecommunication, etc., is playing a vital role in the impaction of knowledge and information to a greater degree than the formal

classroom setting (Ndukwe et al, 2006), (Sule-Kano & Edeh, 2007). Now, in split seconds a student can surf the internet for information that might not be obtainable in the classroom or the school environment, this has helped broaden the scope of knowledge achieved. Also online courses are run, whereby individuals can obtain certificates in several fields of life. It is an inevitable fact that the amount of dissemination of knowledge via Information and Communication Technologies (ICT) cannot be compared with that obtainable in either informal or formal educational setting. ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school

experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change (Adu and Olatundun, 2013). The use of ICT in educational settings, by itself acts as a catalyst for change in this domain. ICTs by their very nature are tools that encourage and support independent learning. Students using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools (Jonassen & Reeves, 1996), the influence of the technology on supporting how students learn will continue to increase.

THE SELF-LEARNING MODEL

With the advent of third and fourth generation (3G and 4G) mobile devices such as phones, tablets, and laptop and notebook computers, plus availability of 3G data services, makes it imperative to rethink learning systems in order to accommodate all and sundry. The thought of making education accessible to all has been much talked and lots have been done in a bit to actualize it even before the much celebrated Millennium

Development Goal (MDGs). In Nigeria, in which there is the national educational deficits affecting all strata of the Nigerian society (Uche, 2006) & (Jiboyewa, 2007), the establishment of many continue education centers, and nomadic education agencies (Federal Republic of Nigeria, 2004) are evidential of the fact of a national aspiration to educate even the seemingly forgotten group – the unlettered adults, and ever migrating members of the country – this kind of effort also abound in other places of the world.

In furtherance of the global effort at eradicating illiteracy, it is worthwhile to take advantage of new technologies in enhancing the educational level of the society, hence, the proposed self-learning model of figure 1.

The model proposed in figure 1 and this paper at large is mainly targeted at the illiterate adult population that has been or could use modern communication gadgets especially mobile phone. This idea was developed based on the work of (Ndukwe et al, 2006) that shows the extent of penetration of use of mobile phone.

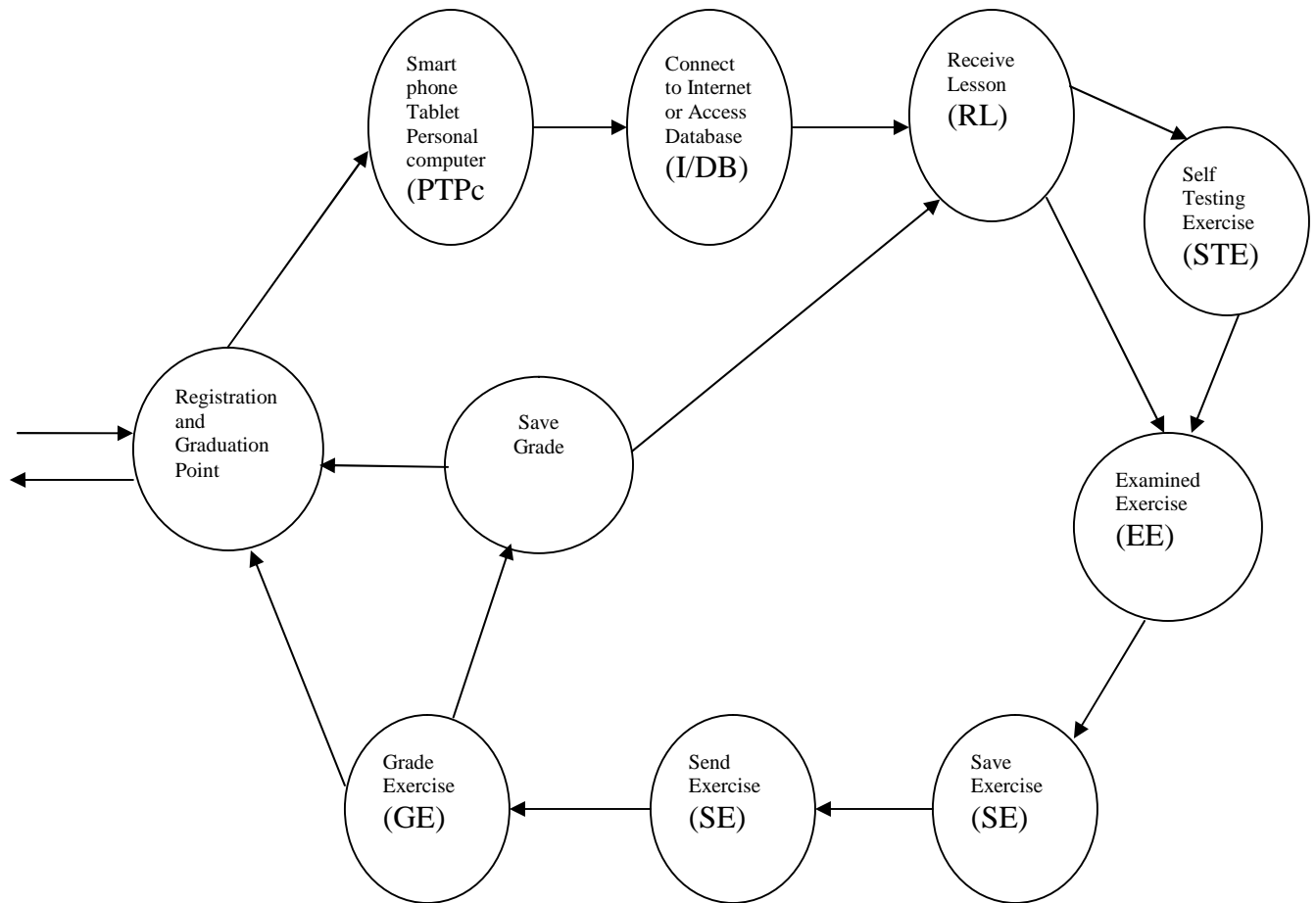


Figure 1: The self-learning Model

THE FUNCTIONAL STAGES OF THE MODEL

The self-learning model consists of ten (10) functional stages as shown in figure 1. The model mimics the learning and grading system of the existing school system in which students are registered, taught, examined, graded, and graduated having satisfied the requirements for graduation. Furthermore, a closer examination of the existing educational structure is structured for direct teaching and evaluation.

Meanwhile, in this system, it is observed that with the best effort, learning centers cannot be everywhere, and the teaching itself have to be structured in terms of time, location, and duration of lessons - a major challenge in nomadic education program. Again, the structure also affects time to register and graduate akin to batch processing system of data processing, while the real-time processing has been seen to be more efficient. It is this structure even though with numerous

advantages that has equally limited the spread of knowledge especially when viewed from the prism of modern technology.

Conversely, the ICT based self-learning model provides access to education from registration to graduation without direct contact. It is an online system with simplified multimedia tutorials, and very simple access buttons. In addition to this, its structure is flexible to allow individual learner to learn at any time, place, for what duration of time he or she chooses, and what he would like to learn which eventually determines when he/she chooses to graduate. The proceeding sub-sections explain each of the functional stage of the model.

MODEL IMPLEMENTATION

Registration and Graduation Center

This is the point of entry and exit – the coordinating point. The access pin to the center could be something like; ##123**, and using the location index of on the phone, the center begins communication with the caller using the local language of the location. The registration steps and instruction should be simple, and response button to be pressed should follow the example above. It should be noted that an intending learner who is unable to read or write should be given the option of using the SIM registration bio data for registration at the center.

Learning Gadgets Registration and Activation

This stage provides for three options namely; mobile phone, tablet/pad, and hand-held PCs. Depending on which of them the learner prefers, the device is registered and mode of instruction (direct online or downloaded tutorial) is chosen. In direct online tutorial, the learner download tutorials anytime it is needed, while for downloaded tutorial, the learner download and save tutorials at once and then play at will. The software activation of examination camera and speaker are equally downloaded.

Receive Lesson via Internet Connection or Database

This stage is a point at which the learner takes lesson using the mobile device. Depending on the type of mobile device or available memory space, the learner may either link with the internet to download the specific lesson to study or use the saved downloaded tutorials in the mobile device.

After a considerable length of tutorial, the learner may decide to self-examine himself by proceeding to the self-test exercise option. This stage and the previous one are independent of the coordinating center.

Examined Exercise

The examined exercise stage when invoked triggers the operation of 'monitor' camera and microphone that monitors and records the learner's environment while taking the exercises. The learner

chooses to go for this stage when he feels ready. Because of the linkage between this stage and the next, the stage is dependent on the coordinating center as such, result of the examined exercise is provided instantaneously.

Save Exercise

The save exercise stage enables the learner to save the exercise for future reference. It is also a require point before the exercise is sent for grading.

Send Exercise

After successful saving, the learner is prompted to send the exercise for grading.

Grade Exercise

The system is designed to instantaneously grade as soon as exercise is received, then, the result is returned within a short time.

Save Grade

This stage provides the learner to have a record of performance but more importantly because of the link between this stage and Receive Lesson stage showing that the learner may decide to terminate study at that stage or proceed to have more lessons and proceed with study.

Graduation Center

At the chosen point of the study, the learner head for graduation by sending the saved grade to the coordinating center.

SUMMARY AND CONCLUSION

With large number of illiterate adult and level of penetration of ICT especially mobile phone services, the proposed self-learning model is capable of enhancing the educational level of the society. From the model structure which is a contactless replication of the known educational system, to the simplification of the stages in terms of unit treatment and usage of unambiguous codes for execution of stage action, it is obvious that the model is implementable, pragmatic, and would be effective at education the target group with less cost.

RECOMMENDATION

Having properly scrutinized the model, the next important step is it implementation. Furthermore, the model can be adapted for use of different group educationally disadvantage group if appropriate software is developed to take advantage of the novel model.

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