ELECTRONICS TEACHING SKILL ACQUISITION USING E-LEARNING IN ELECTRONICS TECHNOLOGY EDUCATION

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Abstract

Electronic teaching skills acquisition is used interchangeably in this study with e-Learning. e-Learning is vital part of each of e-Learner's life, thought, actions, aspirations, success especially in academic achievement. This study noted that without adequate knowledge of relevant e-teaching skills, e-learners would have difficulty performing the academics tasks required. The major concern that we have are the needs for developing effective pedagogy for e-teaching skills. The pedagogy which interests all the researchers is Computer Assisted or Aide Learning-(CAL). The problems with e-teaching and e-learning are discouraging because the existing Computer Assisted or Aided Learning concentrated on very few exploring skills acquisition. The purpose is to investigate the graphics formats which can represent a better pedagogical method of learning Electronic skills practical. The study covered multimedia CAL Electronics skills acquisition, moving Electronics skills graphics, skill graphic, software development, and instructional processes. The focus is to find out the situation in which the moving electronics skills graphics or still skills graphics in which e-learning, stand more effective as learning materials to e-learners to comprehend better. The paper concluded that the use of computer electronic skills graphics to improve the study of electronic learning (EL) has become virtually important. Research shows that so many e-learners have been identified as having unlimited electronics proficiency. The probability of two mental representatives instead of one. The use of Electronic stills graphics or Electronic libraries and traditional libraries can be effective Electronic skills learning Acquisition. The paper also recommended that the teachers should be trained and re-trained to enable them acquire more skills in W learning to impart e-learning to e-learners.

Electronic teaching skills acquisition is used interchangeably in this study with e-learning Electronic is a vital part of each e-learners' life, it affects e-learner's thoughts, action, aspiration, success, especially in academic achievement. This study noted that without adequate knowledge of relevant e-teaching skills, learners would have difficulty in performing the task required of them both in schools practical activities and on the job. The researcher revealed close connection between comprehensive workshop practical activities and industrial skill knowledge. Electronic teacher who has a wide variety use of tools have little or no difficulty manipulating, understanding designs specifications, and expressing themselves correctly an concisely in both theoretical and practical forms. Ropo (1996), noted that basic knowledge of skills are fundamental to the development of e-learning full skills proficiency. While many researchers accept the importance of Electronic teaching skill acquisition in e-learning proficiency and academic achievement, their ideas about how e-teaching skills should be learned and have varied widely.

The researcher recognized two ways of Electronic teaching skills and leanings. Electronic teaching skills recognized Electronic learning by instructive skills. This study focused on Electronic teaching skills acquisition through

Electronic skills recognition in Computer Assisted Learning (CAL) environment. According to Ali (2003), Electronics teaching skills and e-learning recognitions are mainly acquired through context. Researchers in the field of Electronic recognize the need for e-teaching and learning skills acquisition especially at all levels. The major concern that we have, are the need for developing effective pedagogical methods for the e-teaching skills. Traditional pedagogical methods for teaching skills acquisition include workshop, in providing teaching materials by the teachers, textbooks/workbooks and group discussion. Developing effective pedagogical methods for e-teaching and e-learning skills acquisition continues to demand attention and exploration world wide.

One pedagogy which interests all most, all the researchers are Computer Assisted Learning (CAL) known as Electronic learning. Computer Assisted or Aided Learning (CAL) progrmmes have been found to be effective in many technological, humanity, arts and social science faculties all over the world universities. William (1999), results of his studies showed that learners who used CAL programmes performed better than those who used traditional programmes. Computer Assisted Learning programme can facilitate the e-learning and enhance learning. It provides individualized instruction and allows learners to work and learn at their own pace.

The problems with Electronic teaching and learning are discouraging because many existing Computer Assisted or Aided Learning (CAL) studies concentrate on viewing and reading. Listening, writing and speaking with very few easily exploring skills acquisition. Research in this area is skill developing because the use of multimedia CAL in skills acquisition is still new. The author observed that most of the available CAL or e-learning programmes for Electronic skill acquisition employed the viewing pedagogical method. Viewing pedagogy is not an effective way of teaching of skills in Electronics technology programme. According to Chisphan (1998), viewing pedagogy does not introduce learning within their meaningful context6s. Establishing e-learning skills and instructions within the CAL environment has not been well explored. Well, & Joyce, (1989) suggest that Electronics skill content Educational software can be used to provide contextualized skills instruction. The new Electronics skills content programme to be learned can be recorded in form of software or video clips and then incorporated into CAL programmes. According to Duke (2001), "authentic video materials stimulate Electronic teaching skills acquisition and are thus source of comprehensible input". The purpose is to investigate which of the graphic formats can represent a better pedagogical method of learning Electronics practical skills. The investigation can provide a better understanding of CAL.

It has been possible to develop interactive multimedia CAL because of the advancement in computer technology. Interactive multimedia CAL combines graphics, sound, computer sets systems and internet to enhance Electronic teaching and e-learning. Using graphics, together with sound and computer sets systems CAL to Electronic teaching the skills, are considered the strategy Electronics graphics, can be used to gain and direct the attention of e-learners. Electronic skills graphics are effective in creating mental images and other drawings and designing that help to improve the information being learned through Electronic learning. Electronic learning improve graphics to enhance Electronic instructions.

Research for effective methods of e-teaching and e-learning, Electronic skills design is still on going. Since the emergency of computer in education, the researcher's scope has extended to the use of computers in the form of computer-assisted learning (CAL). A problem

associated with CAL is that moist of the available CAL programmes for Electronic skill design acquisition are text based and in most cases present e-teaching out of context. The majority of the programmes are in reading, writing, drawing and listening with limited programmes relating to e-learning acquisition.

According to the many descriptions of Educational software programmes promote problem solving skills. The researcher suggested that problems solving activities are fundamentally cognitive and psychomotor activities. Cognitive and psychomotor processing can be better understood through information-processing models which explain how information is mentally processed. In other words, if description of Educational software promote problem solving skills. it can be inferred that they promote mental processing of information.

Information Processing

Cognitive and psychomotor models can help us to understand how e-learners interact with and process Electronic skills graphic materials. Electronic skills graphic materials are seen as essential for developing effective prescriptive principles of visualization. Nwachukwu (2001) noted that teaching is the process of providing stimulus situation for learning and of eliciting the behaviour responses. Teaching cannot be completed unless learning has taken place, through the effort of teacher or e-teacher. Cognitive and psychomotor theorists assume that any complete theory of human psychomotor and cognition must include an analysis of the plans or strategies e-teachers and e-learners use for thinking, remembering, understanding and producing quality excellent e-Learners. The researcher argued that traditional stimulus and behavioristic theories are in principle adequate to account for the acquisition and use of psychomotor. He further argued that since computers play such a central role in

human thought and human affairs, a theoretical approach that cannot encompass e-learning must, from necessity be adequate for understanding human cognitive and psychomotor.

Researchers looked for a model based on a Technology foundation for Electronic skills graphic presentation. The information processing model provides a process by which Electronic skills graphic representations are decoded and encoded. This paper focuses on how the human memory system acquires, transforms, compacts, elaborates, encodes, retrieves and uses information. The memory system explains the interrelationship among three main storage structure of the brain. Sensory register, short term memory, and long term memory. The sensory register is closely tied to sensory experience, it holds small and unanalyzed information that is retained for a short time. The information received at this stage is raw and unprocessed and is then transferred to a flexible and useful storage called "Short-term Memory".

The short-term memory provides a small storage repository where the information is repeated over and over through maintenance rehearsal process. When a piece of information is repeated, the probability of retaining that information can increase. Short-term memory is limited in how much information it can hold, thus employ maintenance rehearsal to transfer the excess information which is not yet needed to storage knowledge as long-term memory. Long-term memory provides storage place of great size containing information that is not active immediately so that the information can be retrieved when needed. Long-term memory helps e-teacher and e-learner to recall events. The interrelationship between short-term memory and long-term memory explains how visual information can enhance retention and recall. Visual information can persist in short- term-memory after the stimulus is diminished. Visual information can be activated and retrieved from the long-term memory. The information

processing model can account for the effectiveness of visuals in e-learning.

Multimedia Computer Assisted or Aided Learning Electronics Skills Acquisition

Recent advancement in computer course ware design has made it possible to develop interactive multimedia Computer Assisted or Aided Instruction (CAl). Interactive multimedia is the use of computer to present and combine text, graphics, audio and video with links tools that let the user navigate, interact, create and communicate. Interactive multimedia allows individual e-learners to set their own pace and branch into different options according to their respective interest.

The interaction that the computer system offered increases attention, understanding and retention of information being communicated and at the same time provides opportunity to learn by doing. It is not clear if interactive multimedia CAL using moving Electronic skill graphics or stationary skill graphics will be more effective for e-learning.

Learners in Learning Electronic Skills Acquisition

Most of the available CAL software for Electronic skills acquisition could employ Electronic skills graphics and videos and relied on them. Multimedia computer assisted techniques can be used to create a wide varied of different interactive learning Environments. These pheripheris, or environment is usually designed in such a way that learning processes are e-learners controlled, participative and highly motivational. There are special effects for transitions between instructional frame-work, special viewing screen moving symbols such as arrows that direct attention to key board for selecting Electronic Skills Graphics. Dynamic interactive Electronic Skills Graphics on video screens allow e-learners to create and modify their own Education illustrations, explaining the

Multimedia environment with visual support facilitates Electronic teaching and learning is comprehensive when learner observes the designs. The results of their suggestions on dynamic visual support can provide a frame-work for understanding and remembering Electronics courses taught. Barg and Collins (1995), conducted a study in which subjects which used moving visuals were compared with those that use still visuals in the development of spatial visualization. Their results showed that e-teaching that used moving visuals scored significantly higher on mental rotation tests than those who used still visuals. The result also showed that e-learners who use moving visual performed significantly better than those who used still visuals on both immediate and delayed tests. This was conducted to explore how users interact and e-learn during a computer-based simulation given graphical feed-back than with textual feed-back.

Energy can provide information about whether the object is moving or whether the object's movement changes over time. Still pictures on the other hand, lack energy to set it into motion and are more abstract than moving pictures. Stationary pictures suggest movement whereas moving pictures show life in action, can be used to study specific elements, and can bring us close to the points of usual contact.

Software Development and instructional Process

The software development followed three instructional design processes. These are;

(i)   e-teaching and e-learning needs assessment
(ii) Software e-teaching and e-learning design and
(iii) Evaluation and revision of e-teaching and e-learning.

The researcher conducted e-teaching and e-learning needs assessment through various visits to the Electronics and computer institutions at a large research CAT studio. The purpose was

to consult with the directors and the e-teachers who are the content expertise. In addition some other CAl experts as well s the researcher's dissertation were often consulted.

During the e-teaching and e-learning design process, the researcher reviewed several Computer Aided or Assisted Instructions (CAl) designs. The e-teaching and e-learning design was chosen to meet the perceived needs of e-learning the e-learners. The researcher also chose Auto-card authority software for the design of the instruments e-teaching and e-learning for the following reasons;

1. Most Macintosh Computers come with Auto-card to run Electronic Skills design programmes and it is affordable.
2. It is easy for e-learner to run Electronic Skills design programme. Additionally, the VCD/DVD plate that contains the e-teaching and e-learning tool was reviewed.

A fusion recorder was used to focus on the movement of pictures. Photoshop software was used to copy the same pictures when they were not in motion for use in the development of static programmes.

In using teaching to enhance e-learning acquisition, multimedia allows precise co—ordination of e-teaching and visual information. Multimedia teaching can provide e-teachers with tools for enhancing skills foundations in children, especially those who might be at risk for school failure. Computer Assisted Learning (CAL) can be use to enhance the Electronic Skills of increasing numbers of students in South East of Nigeria Educational Zone and all over the world who have been identified as having Electronics Courses proficiency in Computer Assisted reading materials. These have bee found to be effective as teacher-direct instruction for achieving the learners own objective on interactive multimedia programmes which have been used successfully in institutions.

A learner of the same Electronics status race and e-teaching directs e-learners to answer questions using Computer-based instruction performed significantly better than those who used traditional instruction. Computer-based instruction was also found to provide classroom e-teachers with a powerful instructional tool for Electronic teaching the e-learners. The purpose was to increase their e-teaching and learning scores on the Electronic Skills portion of the scholastic measurement and evaluation. The Computer programme was based on the Computer systems. Researchers are showing interest in using multimedia programmes to test various Electronics learning outcomes. The results of many researchers showed that learners adapted to the multimedia information faster. e-learners interacted positively with the system, practiced e-learning on their pace context and commented on the usefulness of the individualized instructions. e-learning learners listening comprehension and studies improved. Multimedia CAL programmes that use moving pictures, still pictures and text can help e-learning learners to improve their design and constructions skills. Multimedia programmes with moving pictures or the one with still pictures will be more effective for intermediate level of e-learning learners.

Moving Electronic Skills Graphics and Still Skills Graphics

The introduction and application of Computer technology in education has grown, and will continue to gain increasing prominence in technologies institution at ever increasing rate. Computers Electronic Skills graphics introduced new dimensions to roles of e-learning in education. Computer Electronic Skills graphics are effective for gaining attention. This Electronic Skills graphics can encourage e-learners to create mental images that in turn make it easier for the e-learners to learn certain types of information. Large reliable information

exists as to which of the various Electronic Skills graphics formats are most effective in e-learning. Electronic Skills Acquisition for all most of the Computer Assisted Studies has been still skills pictures.

Researches show that static or still skills graphics dominated earlier teaching and learning using photographs, slides and filmstrips. So many researchers have shown interest in the use of moving or still skills graphics to test in various e-learning outcomes. The focus is to find which situation of moving of Electronic or still skills graphics, e-learning stand more effective as a learning tools to e-learners. The difference between moving of Electronic graphics and still graphics is that moving graphics create the illusion of movement which helps to explain the designs.

Conclusion

The use of Computer Electronic Skills graphics to improve the study of Electronic Learning (EL) has become virtually impotent. Various studies have shown that Computer Electronic Skills graphics can be used to facilitate e-learning. Computer Assisted or Aided Instruction (CAI) has been found in several studies to be more beneficial to e-learning of several groups and educational institutions levels than traditional paper and pencil institution. Computer Electronic Skills graphics can also be used to gain and direct the attention of the e-learners question that needs clarification from e-Skills graphics, moving or still skills which can e-learning learners to learn Electronic designs and how to construct the designed objects.

Research shows that so many e-learners have been identified as having unlimited Electronics proficiency. It is necessary to find effective means of using Computer Technology Education to improve Electronic Learning (EL). All efforts to improve e-learning with Computer Technology have not yielded positive results.

The use of an effective Computer Electronic Skills graphics format in Electronic Skills Acquisition can be helped to e-learning learners. Dual- coding theory as proposed by earlier researchers, have explained how e-learn Computer systems, and combination of alt Compute and learning systems, can be used to facilitate Educational institutions in producing quality and excellent graduates. The probability of recall can increase due to the availability of two mental representatives instead of one. The use of Electronic skills graphics or Electronic libraries and traditional libraries can be effective Electronic Skills Learning Acquisition.

Recommendation

The following recommendations are made to improve Electronic Skills Learning Acquisition.

1. Teachers should be trained and re-trained on the use of Computer to enable them acquire morel skills in e-learning impartation to e-learners.
2. e-learning is vital part of each of e-learner's life, thought, actions, aspirations, success especially in academic achievement, Federal, State, Local Governments and spirited private organizations should fund e-learning activities in Nigeria.
3. The school system should encourage Electronic teaching and make e-learning compulsory in all levels of educational programmes.
4. Teachers should encourage learning activities among pupils, students, in primary, secondary schools and tertiary institutions to be the through e-learning with computers.
5. Ministries of education and research centres should recognize two ways of Electronic teaching skills and learning by including Electronic-mobile (e-m) learning in schools curriculum.

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