Technology Education Using a Novel Approach in e-Learning—Towards Optimizing the Quality of Learning Outcomes

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Ever since the advent of the new era in presenting taught material in Electronic Form, international bodies, academic institutions, public sectors, as well as specialized entities in the private sector, globally, have all persevered to exploit the power of Distance Learning and e-Learning to disseminate the knowledge in Science and Art using the ubiquitous World Wide Web and its supporting Internet and Internetworking.

Many Science & Education-sponsoring bodies, like UNESCO, the European Community, and the World Bank have been keen at funding multinational Distance Learning projects, many of which were directed at an educated audience in certain technical areas. Many countries around the Middle East have found a number of interested European partners to launch funding requests, and were generally successful in their solicitation efforts for the needed funds from these funding bodies.

Albeit their intricacies in generating a wealth of knowledge in electronic form, many of the e-Learning schemas developed thus far, have only pursued their goals in the most conventional of ways; In essence, there had been little innovation introduced to gain anything, if any, above traditional classroom lecturing, other than, of course, the gained advantage of the simultaneous online testing and evaluation of the learned material by the examinees.

In a sincere effort to change the way in which people look at the merits of e-Learning, and seek the most out of it, we shall propose a novel approach aimed at optimizing the learning outcomes of presented materials. In this paper we propose what shall henceforth be called as Iterative e-Learning. In Iterative e-Learning, as the name implies, a student uses some form of electronic media to access course material in a specific subject. At the end of each phase (Section, Chapter, Session, etc.) on a specific topic, the student is assessed online of how much he/she would have achieved before he/she would move on. If the student fails, due to some delinquency on a particular topic, the online process of e-Learning would take the student at some more detailed and deeper level on the subject matter where he/she had failed; once the student bridges the gap, to this end, then the ongoing e-Learning process would carry him/her further up the next level of the subject matter he/she is pursuing. This process is carried on at all levels of learning: section, chapter, and course level. A student may not progress to the next course level before he/she would pass the entire course at 80% or more. If in the process of repeating some section, chapter, or a whole course, then the student shall be required to score a higher percentage than the mere 80% he was required to attain the first time around; say 5% more per iteration he/she makes. Here, students going through Iterative e-Learning shall be allowed to move on to the next level of learning sooner than others if the time that takes them to learn a particular topic is shorter than would normally require an average student to expend, provided, of course, they make it through all the required assessment phases.

Unlike the traditional ways of classroom or online lecturing, a student going through Iterative e-Learning is expected to achieve a quality of learning never before achieved via standard pedagogical methodologies.

With Iterative e-Learning, it is expected that poorly accredited academic institutions will be able, for the first time, to produce the quality of graduates who are more capable of competing for highly paying jobs globally, and to be of the quality of contributing in more industry-supported economies.