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WEB BASED INSTRUCTION FOR PSYCHOMOTOR DOMAIN: A NEED FOR SKILL DEVELOPMENT

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ABSTRACT

In the present scenario, we are moving from knowledge society to wisdom society in which individual must be equipped with the skills, abilities and competencies of applying knowledge in a practical way rather than having formally education. But this is not possible in conventional setup of teaching as it is not providing the platform to develop higher order skills abilities. Teachers teach in vacuum and are more concerned with cognitive domain. But in the digital age where e-resources are easily accessible to everyone, developments in web based instruction have provided both teachers and students with a wide variety of teaching/learning alternatives that will extend the educational boundaries beyond the traditional four walls of the classroom. Web based instructional package not only supports for cognitive learning, but also facilitates learning in other domains of Bloom taxonomy. Such type of packages may help in developing skilled oriented individuals which is the need of the hour.

INTRODUCTION

In the techno savvy world, the World Wide Web has become an increasingly powerful, global, interactive and dynamic medium for delivering instruction. It has changed the iconic tools of the trade. Teaching, learning, and curricular practices have undergone significant changes due to instructional technology innovation (Kozma, 2003). Teachers motivate students to construct the knowledge and to explore new areas of learning by using new avenues of technology. Students discover knowledge through inquiry and experimentation rather than by merely memorizing facts. Handouts are stationary visuals, while technology based materials

are interactive that provide a teacher an opportunity to go beyond the boundaries of traditional instructional strategies that focus on presentation of abstract information to the passive learner. They are moving to an active process in which meaning is developed on the basis of experience (Kaur, 2013). Instructional technologies have demonstrated the ability to expand educational capacities (Miller, 2001).

Among various instructional technologies like computer assisted instruction, computer based concept mapping, computer based multimedia etc., the strategy that has evolved as a useful tool in leading students towards meaningful learning and better achievement is web based instruction (WBI). WBI is a hypermedia-based instructional programme that utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported (Khan, 1997). WBI has gained considerable popularity in education due to its benefits such as allowing learner control (Alomyan, 2004), providing practice of self-discipline, time management (Daugherty and Funke, 1998) and 24/7 accessibility (Chuang, 2000).

Driscoll (1998) theorizes that cognitive skills that involve solving problems, applying rules, and distinguishing among items are best suited for web-based training. In the beginning this technology involves cognitive learning, but later it enhances learning in the other domains. In this environment, students are given more opportunity to turn knowledge into wisdom by providing the quality instruction and enriched content in different learning domains (cognitive, psychomotor and affective). Using the web to repeatedly demonstrate a psychomotor task that requires expensive use of materials saves time and money compared with showing the same task repeatedly in a traditional classroom setting (Henke, 1997).

The conventional method of instruction used to teach psychomotor skills include the use of lectures, textbooks, self-instruction and live demonstration (Smith, Cavanaugh, & Moore, 2011). Learning motor skills by watching a live demonstration has long been recognized as a successful and well-researched instructional method for over 30 years (Wouters , Tabbers & Paas, 2007). Traditional instructional videos of demonstrations were either broadcast ‘off-line’

through TV or stored on CD-ROMS, and were not generally made available to students, included only when the teacher felt it was appropriate for the course (Schittek Janda et al., 2005 and Zhang, Zhou, Briggs, & Nunamakerjr, 2006).

The ability to provide learning in two or more domains is a crucial aspect of web based instructions. Colbrunn and Tiem (2000) indicate that the first three levels of the cognitive domain (knowledge, comprehension, and application) are appropriate for the web, but the last three (analysis, syntheses, and evaluation) require careful considerations during the instructional development process of the course. However, Driscoll (1998) ensures that all levels of the cognitive domain can be delivered via the web, and its ability to delivers high level intellectual cognitive skills depends on the quality of the instructional design. Hazari and Schnorr (1999) argued that WBI can not only provide for cognitive learning, but also evaluate student learning in this domain. Hoekman (1999) further reported that coaches do not believe that teaching via the web is effective for real psychomotor skills; however, it can help people improve soft skills areas, such as sale techniques or computer application software. Web based instructional package for psychomotor domain become more important in the practical subjects like Science where knowledge cannot be given in vacuum.

REVIEW OF LITERATURE

Mustafa (2005) identified differences in learners' characteristics such as cognitive, affective, physiological and social factors that affect learning in a web-enhanced environment. Findings show addition to cognitive factors, affective characteristics such as frustration, motivation, fear, desire, gender, etc. play crucial roles in Web-based learning.

Rovai, Wighting , Baker and Grooms (2009) developed and validated a self-report instrument that can be used to measure learning in the cognitive, affective, and psychomotor domains.

Cooper and Higgins (2014) evaluated the effectiveness of online instructional videos for the acquisition and demonstration of cognitive, affective and psychomotor skills amongst Undergraduate students, throughout formative assessments with two

different durations of instructional videos. The research suggests that the use of videos to support traditional learning should be encouraged.

Ramma_, Bholoa, Watts and Nad (2017) proposed a framework – the pedagogical technological integrated medium (PTIM) – to facilitate the practical fusion of the affective domain into technology integration within a learner-centered perspective. The novelty of this framework is that it places learning at the intersection of content/contextual knowledge, pedagogy and technology, without downplaying the importance of technological pedagogical content knowledge.

BENEFITS OF WEB BASED INSTRUCTIONAL PACKAGE FOR PSYCHOMOTOR DOMAIN

Developments in web based instruction have provided both teachers and students with a wide variety of teaching/learning alternatives that will extend the educational boundaries beyond the traditional four walls of the classroom. Web based instructional package for psychomotor domain provides flexible learning environment and enhances students' learning outcomes. It is tailored to fit different styles and abilities. This package creates a learning environment that provides students with new and rich styles of learning. Demonstration and opportunities to do practice in web based instructional package provides a new learning environment for learners that foster elaboration of complex concepts. Web based instruction can go a long way in relieving the students from the stress of not understanding the concepts demonstrated by the teacher in a huge class and missing the class on account of any eventuality as it is readily available to students.

Variety of engaging activities of the package addresses the issues of child psychology and as a result the students' confidence is built. This package not only develops laboratory skills but reduces the cognitive load also. In addition to myriad positive learning effects that happen when students work with this package, they also develop new literacies such as learning navigation, searching and retrieving skills as well as multimedia and hypertext reading.

CONCLUSION

Education is a fundamental human right of the child. But a large number of students

are excluded from this right due to physical, intellectual, social, emotional, linguistic or other disabilities as they learn in different ways and at varying speed. A major task of the school is to provide not only educational experiences in cognitive domain but in psychomotor domain also. Intellectual development makes the student knowledgeable but to be wisdom one must have skills and that is possible only in a flexible education system that assimilates the needs of a diverse range of learners and adapts itself to meet these needs. The instructional package for psychomotor domain will accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. So policy makers should come forward and encourage heads of the institutions and teachers to develop web based instructional package and integrate web based instruction in their teaching learning process.

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