WBI: Assesment, Tools, Integration in Teaching and Learning

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Abstract:

There has been remarkable developments upcoming from Information Communication Technology (ICT). Information communication technology efforts influences more on education, in which web based instruction plays a vital role in the development of teaching, learning process. Web based instruction (WBI) is an innovative approach, which is considered as a tool and medium of instruction. Especially, web based instruction changes the profile of existing teaching and learning methods. The web has many potential features to enrich teaching, learning process, and provide designed learning resources and web tools for effective classroom instruction. Web based learning environment offers better learning experiences, for increasing learning outcomes of the students. Web based instruction supports to develop teaching competence, create innovative learning environment for teachers. Web based practice helps to develop higher order thinking skills, problem solving skills, and critical thinking skills of teachers as well as students. Such type of innovative instruction provides better learning opportunities, meets educational goals as well. In particular, web based instruction gives more freedom, responsibility to teachers and stakeholders. The web based instruction allows students' to assimilate information through exploration skills in order to obtain problem solving skills. The WBI is considered as a tool to enhance quality of education in a meaningful way. This article presents the evolution and tools of web based instruction and its integration in teaching, learning process.

Key words: *Web based instruction, Evolution, Tools, Integration and Web Based Teaching Learning*

I. INTRODUCTION

The global world moving rapidly into digital media, in which Information communication technology (ICT) playing vital role, which will lead to develop learning skills in the 21st century. It is being one of the core education to understand and master the basic skills (Syed, N. U. A., 2013) of education. Especially, Computer Assisted Instruction (CAI) is a good example of science and technology (Orhan, E., Kafir, B &Ayse, B., 2014) which was coined early, when the use of computers in the teaching, learning (Osman, B., Hakan, C., Serkan, C &Serhat, A., 2009) environment significantly. CAI considered as the most effective communication, and complementary system which provides individualized tools to empower elements with necessary alternatives to the teaching process. Utilization of computers and its efforts showed positive effects, and significant benefits when integrating into mathematics, science and technology and all other educational (Orhan, E., Kafir, B &Ayse, B., 2014) disciplines. Through web, classroom instruction and instructional support can be enhanced. Web based instruction supports traditional method of teaching, and seemed as a supplementary to the existing teaching method, which provide good learning experiences that are open and flexible. These are distributed for engaging, interacting with learners effectively (Annie, K. L., 2013). Several studies stated that web based practice is a more enjoyable approach especially to find in mathematics (Diem M, Nguyen, Gerald, K., 2005) teaching and learning. An important aspect of implementing CAI in education is for, the effectiveness of user acceptance, attitudes of students and teachers, and experiences of learning is greatly influenced in using computers in teaching and learning (Osman, B., Hakan, C., Serkan, C &Serhat, A., 2009) environment.

Web based Education commission (2001) stated that web-based practice is the primary goal in the context of learning and assessment practice, also it served as a central part of virtual teaching and learning, its' efforts are informative, innovative and resourceful. Web based assessment leading, directing to learning, thinking of students' skills also has the potential to meet the assessment goals (Diem M, Nguyen, Gerald, K., 2005). The Web based resources provide multimedia, hypermedia links to support students' exploratory activities to promote exploration skills, from which real time data, up-to-date information (Nada, D., 2007) can be obtained.

Technological revolution provides rich prospects, new paths to understanding the subject concept and, plays a twofold role in teaching and learning (Christian, B., & Paul, D., 2010). The advancement of technologies have the potential feature to engage students in learning process through accessibility and makes learning as an enjoyable one. According to America, Pew research center survey pointed out that 92% of teenagers have used online on a daily basis, 24% of them have used constantly. The percentage of participation of teen have been increased in digital media for the last few years (Sarah, G., Aman, Y., 2016). According to Osama, M. N. M (2016) web based instruction is referred to the 'utilization of online resources, applications and software for enhancing instruction and course delivery methods', which can be accessible for classroom instruction in the form of WBI. It is an innovative approach using web as a medium for instruction (Khan, 1999).

Web Based Instruction (WBI) also called as online instruction which provide alternative solution, better educational experience, supports students' higher order thinking skills and problem solving skills. WBI models has been moving towards different profile over the traditional internet environment and act as a tool (Mustafa, M., Esma, C., H Hakan, G., 2012). Moreover, technology as a system and served as cognitive tool which refers four essential components in education such as; teacher, student, content and context (Mustafa, E., Sebnem, K. I., 2016). The 3G and 4G technology plays an important role among Gen Z learners, they will growing up with the extremely elegant media and computer learning environment and becoming more internet savvy and proficient than Gen Y generation (Ganesan, P., 2016).

II. WEB TOOLS OF WBI

Web based tools considered as a vibrant tools which are varied in nature, its' resources and efforts fostered

reading skills, writing skills and cultural awareness to the students successfully (Osama, M. N. M., 2016). The web sites, electronic classes, news groups, electronic lists like File Transfer Protocols (FTP) providers and electronic universities contributed in various facilities through internet to education (Orhan, E., Kadir, B &Ayse, B., 2014). The different type of software tools, applications help to constraint different activity for the knowledge construction to emerged learning needs, which make epistemological and activity structures as a sequence in the development of making meaning and skill acquisition process (Christian, B., & Paul, D., 2010).

The search engines, instantaneous messaging, substantial multi-players, role playing games, podcasting, bookmarking and folksonomies have been supported to collaborate each other across the knowledge society. These tools offer opportunities, to interact with peers in virtual environment, engaging in online discourses and act as a digital product to demonstrate learning. Web based technologies had variety of authoring tools and several languages to develop self-contained instructional modules such as micro-worlds, animations and simulations that consisted of exploratory types of activities (Nada, D., 2007) for the development of students.

Essentially, the web based instruction described by communication on social media, blogs, social networks, forums and video sharing websites (Sarah, G., Aman, Y., 2016). In particular, Web Quest designed for using information for increasing analytical thinking, synthesization and evaluation skills of students. Web have the facility to provide inquiry-oriented learning activity (Nada, D., 2007) for the students also they can be created for their own.

Java Applets, Java Script and Perl tools in the assessment domain, which have three main goals, such as improvement in the process of teaching, learning, assessment of achievement, progress, and feedback for the students. Web based practice considered to be a mind tool to drive and shape learning, achievement, interest, habits and, motivation of students (Diem M, Nguyen & Gerald, K., 2005).

These kind of knowledge networks, teaching and learning communities, asynchronous network environments, knowledge portals are designed to fulfill emerging demands of students (Nada, D., 2007).

Web 2.0 technologies offer novelty and potentiality for teaching to create new and alternative learning environment to teachers as well as students (Shu, C.P.,

& Teresa, F., 2011; Mathew Montebello, 2017). Web generation and its contribution set the trend to improve higher level of applications that enhanced capabilities of a smarter web, through which teachers rethink and retrain their skills. Web 2.0 content shifted attention from access to information towards access to teachers and students. These usefulness leads in educational process as increase critical thinking skills and facilitate individual learning needs attracts school works (Shu, C.P., & Teresa, F., 2011) and social skills to students as well as teachers (Mathew Montebello, 2017).

MATLAB and Maple are the numerical, symbolical web tools provide opportunity to understand early difficulty of mathematical problems, which leads to different way of thinking compared with the symbolic manipulation promoted in instruction and traditional teaching for students. These technologies have been widely used with varying degrees of success. Well-designed learning models cater of diversity and enhance mathematical, computational skills (Tonkes, E. J., Loch, B. I., &Stace, A.W., (n.d). Likewise, Open educational resources have the capability, flexibility to adopt various teaching and learning cognitive resources with free of cost, which fits the lesson design activities like planning lessons and creating digital teaching materials (Dongho, K., 2018) and learning environments.

III. INTEGRATION OF WBI

Educational technology referred as the effective implementation to accomplish intended learning outcome through educational technology (Mable, E. W., 2017). Educational technology initiated at the beginning of 90's which shown immense progress with the use of CAI (Orhan, E., Kafir, B &Ayse, B., 2014). Educational leaders and stoke holders had emphasized to develop plans for integration of technology to support pedagogy, curriculum and support learning infrastructure to the implementation. It also emphasized teachers have to take maximum effort, proficiency and, overcome the obstacles to integrate technology based instruction to the classroom. Application of technology is constantly changing, requiring continuous adaptation to new tools (Mable, E. W., 2017). Use of technology is the right way to enhance complex knowledge and problem solving skills in existing teaching and learning methods. The web have the potentials to create possibility, new ways in teaching and learning (Cumali,O., Sanam, U., Galip, G, 2009; Annie, K. L., 2013) environments. Integration of technology into teacher education curriculum is necessary to present efficient teaching

strategies (Osman, B., Hakan, C., Serkan, C &Serhat, A., 2009) for the future students.

Information communication technology have the potential to accelerate, enrich skills and strengthening teaching learning for school change innovatively (Syed, N. U. A., 2013). The implementation and integration of technology provides insights and overcome the learning barriers for future education (Shu, C. P., & Teresa, F., 2011).

Internet and web are getting more importance in school curriculum as well as in education. Computer technologies, software used for explaining the principles and concepts visually and, provide suitable teaching techniques, especially in science education. It helps to develop higher order thinking skills, increasing achievement and allow students to assimilate the information with good understanding (Orhan, E., Kafir, B &Ayse, B., 2014).

Researches showed that learning can be attainable through, 83% from sight, 11% from hearing, 35% from smell, 1.5% from touch and 1% from taste (Orhan, E., Kafir, B &Ayse, B., 2014). The student's confidence improves significantly, when incorporate software tool into learning strategies. Digital tools needed to explore the specified aspects of the scenario (Vince, G., et al., 2016), speedup quickly in a new language, level of solving problems and leading to provide further computational experiences (Tonkes, E. J., Loch, B. I., &Stace, A.W., (n.d). Integrating technology in teaching represents as theoretical, cognitive framework that will be possible in the regular reflection towards the proper actions to develop professional competence innovatively (Laura, M., & Sara, T., 2012). Also fill the gap between personal and school task between teachers as well as students (Shu, C.P., & Teresa, F., 2011).

IV. WEB BASED LEARNING

Todays' students growing up visually, especially with TV, video, computers, internet and web based technologies which are playing vital role in their daily lives. Through which, students can be accessed a large variety of information easily (Nada, D., 2007; Orhan, E., Kafir, B &Ayse, B., 2014). Web based instruction is a new strategy in teaching and learning and support to traditional method of teaching (Cumali,O., Sanam, U., Galip, G, 2009; Smt. Joshi, R. R., 2015& Mathew Montebello, 2017) and online learning environment or used as a replacement for existing teaching method (Annie, K. L., 2013; Orhan, E., Kadir, B &Ayse, B., 2014) or as alternative (Shu, C. P., & Teresa, F.,

2011). It creates more interest, provide opportunity for self-learning (Smt. Joshi, R. R., 2015& Mathew Montebello, 2017), self-confidence and develops personalized learning. It helps to access unparalleled to instructional resources (Annie, K. L., 2013) learning materials and tools in different format with good quality. It supports to adopt various technological web tools to learning process (Smt. Joshi, R. R., 2015). In which, Specific type of technology improves student learning outcome (Mable, E. W., 2017). Web based learning activities are more innovative, which have the platform to create individual learning environment, along with different areas of intelligence for diverse learning styles of students, stemming from their individual differences for the development of educational processes (Mustafa, E., Sebnem, K. I., 2016).

V. WEB BASED TEACHING& RESULTS

Good teaching requires technology to understand the mutual reinforcing relationship between appropriation, specific context and strategies representations (Laura, M., & Sara, T., 2012). The teachers are good thinkers and problem solvers when they give instruction interestingly as wells as approximately (Alnoor, A. G., & Xiang, G. Y., 2007). Web based teaching is to guide and facilitate learning, which improves group and independent learning (Smt. Joshi, R. R., 2015).

WBI play an important role in authentic context and create environment to develop teachers' competences, which foster teacher creativity in developing innovative instructional strategies, critical thinking approaches to cross multi-cultural communication and providing confidence on dynamic changing world (Osama, M. N. M., 2016). Now-a-days books are switched by the web technologies which offer independent teaching and learning environment (Mustafa, E., Sebnem, K. I., 2016) for assisted traditional method of teaching and learning.

K-12 teachers actively involved in online learning activities that support maximum number of instructional characteristics of exploratory learning called webQuest (Nada, D., 2007). Sufficient pedagogical knowledge and technological skill is needed for qualified teachers. Existing teacher education programs provide inadequate experiences for the professional foundations (Dongho, K., 2018). The use of open educational resources (OER) have the potential to meet the needs of pre-service teachers from diverse disciplines (Dongho, K., 2018). Teachers need to have digital interaction for enrichment of cognition that will prove teaching efficiency and enhancing the excellence of teaching, and learning more meaningful (Ganesan, P., 2016).

VI. CONCLUSION

A successful web based instruction depends on farming strategy which combines technology into curriculum and who are interesting to use it (Mustafa, M., Esma, C., H &Hakan, G., 2012) and depends upon abilities of teachers. Todays' pre-service teachers are the tomorrows' teachers their innovative awareness influences more on students' skills. There are only limited number of researches focuses on technology-based models proved outcomes. Web based learning activities is more innovative (Mustafa, E., Sebnem, K. I., 2016) which influences on development of new skills, in order to offering efficient learning resources, teaching experiences and evaluation systems which able to assess teachers' and students' skills in a meaningful way. Teachers may think comfortable with digital tools due to interaction activities reducible between teachers and students (Cecelia, J., & Petro, V. D. M., 2015).

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