Emerging Technologies in Ensuring Quality of Education

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ABSTRACT

Education has by now a day is fully technological domain, where technology was otherwise limited to laboratories and experimental hubs. A new learning culture is in a way of making which is broad, collaborative, feasible and encompassing. The adoption of different technologies has allowed access to quality education and learning materials to students from developing countries and has led to unprecedented growth in the number of students opting for courses from the best ranked institutions. With the advent of the World Wide Web, and social media and other software that promote the creation of user sourced content and communication (Facebook, Twitter, and YouTube). The students in classrooms are millennial learners and digital natives; they constantly rely on technology for communication and social interaction in and outside the classroom. Lecturers can use the Internet, digital media tools, and common software applications to enhance student learning.. Thus there is a need to understand the relationship between students' learning styles and their preferences for instructional strategies, including the use of emerging web technologies and social media. Since learning styles provide information about individual differences in learning preferences they can suggest how instruction can be best designed to support the learning preferences. Also we also neglect the role of student feedback in ensuring quality deliverance and dissemination of knowledge by the lecturer. We often tend to ignore the students' role in contributing towards the quality of education in the higher education departments. In this paper, a research framework has been proposed to incorporate emerging web technologies and social media into higher education based on students' learning styles and technology preferences and also the role of student feedback in ensuring quality education.

Keywords*: Mobile Learning, Open Educational Resources (OER), Cloud Computing, Learning Analytics, Virtual and Remote Laboratories, Wearable Technology*

Introduction

The Information and Communication Technology (ICT) curriculum provides a broad perspective on the nature of technology, how to use and apply a variety of technologies, and the impact of ICT on self and society. Technology is about the ways things are done; the processes, tools and techniques that alter human activity.

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ICT is about the new ways in which people can communicate, inquire, make decisions and solve problems. Enhancing and upgrading the quality of education and instruction is a vital concern, predominantly at the time of the spreading out and development of education. ICTs can improve the quality of education in a number of ways. The growth of social media and web-based applications has made the web an important educational medium. Notably, with the creation of emerging web technologies such as blogs, wikis, instant messengers (IM), social bookmarks, YouTube and Newboston tutorials, the web is transforming into a fully interactive space and the control of content has been decentralized to allow everyone to collaborate, create, publish, subscribe, and share information

Mobile Learning

Today over 6 billion people have access to a connected mobile device and for every one person who accesses the internet from a computer two do so from a mobile device2. Mobile technology is changing the way we live and it is beginning to change the way we learn Mobile learning involves the use of mobile technology, either alone or in combination with other information and communication technology (ICT), to enable learning anytime and anywhere. Mobile learning allows for the following impacts on education:

Open Educational Resources (OER)

Open Content or Open Educational Resources (OER) are teaching, learning or research materials that are in the public domain or that can be used under an intellectual property license that allows re-use or adaptation (e.g Creative Commons). The potential of opening up educational resources for use and adaptation by everyone, especially those in resource-poor environments, is a great opportunity to achieve quality education for all.While open content has been available for a long time, the topic has received increased attention in recent years. The use of open content promotes a skill set that is critical in maintaining currency in any area of study—the ability to find, evaluate, and put new information to use. The same cannot be said for many textbooks, which can be cumbersome, slow to update, and particularly costly for K-12 schools. More educators are tapping into the wealth of content within open repositories and familiarizing themselves

Cloud Computing

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction1.

Cloud computing is revolutionizing the way Schools, Colleges and Universities treated student data. That has a direct implication on making the educational administration more fast, transparent and seamless.

Learning Analytics

Learning analytics emphasizes measurement and data collection as activities that institutions need to undertake and understand, and focuses on the analysis and reporting of the data. Unlike educational data mining, learning analytics does not generally address the development of new computational methods for data analysis but instead addresses the application of known methods and models to answer important questions that affect student learning and organizational learning systems7.

In summary, learning analytics systems apply models to answer such questions as:

- When are students ready to move on to the next topic?
- When are students falling behind in a course?
- When is a student at risk for not completing a course?
- What grade is a student likely to get without intervention?
- What is the best next course for a given student?
- Should a student be referred to a counselor for help?

Virtual and Remote Laboratories

A remote laboratory is defined as a computer-controlled laboratory that can be accessed and controlled externally over some communication medium12. Virtual Laboratories are cost effective, efficient and allow practical education to be provided to students and learners in remote places where developmental and financial constraints do not allow construction of a full-fledged lab.

Wearable Technology

Wearable technologies are networked devices that can collect data, track activities, and customize experiences to users' needs and desires. These technologies are a subset of IoT, which comprises networked "smart devices" equipped with microchips, sensors, and wireless communications capabilities13.One of the most promising potential outcomes of wearable technology in higher education is productivity: tools that could automatically send information via text, e-mail, and social networks on behalf of the user—based on voice commands, gestures, and other indicators— that would help students and educators communicate with one another, keep track of updates, and better organize notifications.

Conclusion

The paper highlighting the technology preference of various learner types as well as incorporating a novel combination of emerging web technologies in the course delivery. Our findings suggest that today's learners are flexible in stretching their learning styles and are able to accommodate varying instructional strategies including the use of emerging web technologies. They further suggest that learning

styles of today's learners are flexible enough to experience varying technologies and their technology preferences are not limited to a particular tool.The inclusion of students from non-scientific backgrounds in our future studies would further help understand the relationships among various learner types and their technology preferences. The educators in Higher Education have a role to prepare students of today who will be the leaders of tomorrow.

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