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DETC 630

Final Essay

Introduction

During the DETC 630 course, students had an opportunity to learn many new applications and existence of emerging technologies. Emerging technologies are newly evolving technologies. I came across a few emerging technologies such as Augmented Reality, Gesture Based Learning, and Semantic- aware applications, which were new to me. Many technologies such as mobile phones, the Internet, Geo-positioning systems etc. are becoming an everyday necessity for most of us. Use of various technologies is rapidly spreading in personal, professional, social and educational areas. The use of emerging technologies is gaining popularity in educational settings (Saeed, Yun, & Sinnappan, 2009).

Three emerging technologies are:

1. Mobiles
2. Cloud Computing
3. Smart objects

### **Mobiles**

The first mobile phone “the brick” (Motorola DynaTAC 8000X) came to the market in 1984 (First cell phone, 2005). Since then, cell phones have gone through a massive change. From 2 lbs (First cell phone, 2005) to merely 0.38 lbs (LG Optimus, n.d.), is a huge transformation in terms of weight. Smart phones not only offer the basic telephonic communications, but also provide a wide range of entertainment and applications. Smart phones are capable of taking and

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storing pictures, playing music, recording audio/ video, storing data, playing games, accessing the Internet, chatting, browsing web pages and providing a GPS.

A necessity for many, cell phones entered wide-use more than thirty years ago. The applications were originally limited to personal telephonic communications. However, with the introduction of 3G and 4G networks, cell phones now serve as a compact computer.

Cell phones now have many applications in distance learning. With the fastest growing technologies and new research, cell phones have more opportunities in the field of education. Cell phones are accessible from a network area and are used for information gathering and sharing in field study. Smart phones have ability to access the course material and serve as a geolocator. Mobile learning or m-learning is already seeing some benefits, especially in developing countries, where mobile phones cost less than other computing devices (Mobile learning, 2010). Through mobile learning, students become more engaged and show more interest in learning as cell phones have a huge impact on personal and social life (Bowen, 2011). According to the Horizon Report 2011 (Johnson, Smith, Willis, Levine, and Haywood, K., 2011), mobile technology is one the most popular and rapidly growing technologies in education

### **Cloud Computing**

In cloud computing the data is storage is web-based rather than desktop-based. A “cloud” consists of thousands of servers connected to each other via Internet. Users upload and store personal files or documents on the web. This data is accessible from anywhere via the Internet. The users are not restricted to one desktop to access personal data (Mirashe, & Kalyankar, 2010).

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Another major advantage of cloud computing is users can create and manage collaborative documents.

As cloud computing offers flexible applications, more educators are employing it (Katz, R., Goldstein, P. & Yanosky, R., 2009). Cloud computing uses Software as a Service (SaaS) as a platform, which eliminates the software installation. As an infrastructure, Cloud computing uses Infrastructure as a Service (IaaS), where clients can buy fully outsourced resources and do not have to invest in servers or related software. This reduces the cost to the institutions. As cloud computing is location independent, students and instructors have a convenient and flexible access to documents. Group assignments and collaborative documents are doable due to data storage ability on the web. Cloud computing will be a requirement in future (Microsoftedu, 2010).

### **Smart objects**

Smart objects are the objects that contain stored information or have ability to process and display information. Smart chips, passport barcodes, ID cards containing a chip are some of the smart objects. Everyday life such as household items, sporting goods, entertainment, security and identification devices include many smart objects.

Smart objects are entering the education field. Although the usage is still limited, smart objects have a potential becoming a trend in educational field in the next four to five years according to the Horizon Report, 2009 (Johnson, Levine, & Smith, 2009). Oncology, archeology, health care and the library database currently use smart objects for educational purpose.

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Some technologies have been used in the past and now emerging. The good examples would be the use of games in education and the role- play. In face-to-face education, many instructors opt for classroom games, which have become an emerging technology in form of electronic games. Role- plays are used, especially in a language class to demonstrate the correct use of grammar and vocabulary. Web applications such as Second Life (<http://www.secondlife.com>) offer electronic role-plays, which serve the similar purpose of traditional role-plays.

Some applications are not emerging anymore but are popular in mainstream such as land-line telephones, pagers used by the doctors for communication etc.

Some technologies did not make it to the mainstream such as Microsoft Bob (<http://toastytech.com/guis/bob.html>) or IBM PCJr. (<http://oldcomputers.net/ibm-pcjr.html>).

I was aware of many technologies such as smart objects, geo-everything, semantic-aware applications as everyday technologies but was not aware of the applications in the educational area. DETC course readings, especially the Horizon Reports, enriched my basic knowledge about the emerging technologies.

The top three concepts I have learned in this course are:

1. Emerging technologies are constantly developing

Even though particular application becomes popular in mainstream and in educational field, ongoing research keeps it expanding. A good example would be mobile phones.

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Mobiles are now used for numerous applications like accessing the Internet, listening to music, capturing media etc. apart from the basic telephonic communication. Another example is the Internet. The journey started from dot com where the Internet was accessible through the dial-up services. Now 4G services make it possible to access the web via smartphone.

2. Emerging technologies make education interesting

Many applications such as social networking, cloud computing, game-based learning etc. make education more interesting as well as challenging.

3. Emerging technologies are not necessarily innovative technologies.

Emerging technologies can be old technologies in a new avatar or totally new technologies.

During the course, we participated in different assignments, discussions and a group project. I learned a lot about Emerging Technologies and Web 2.0 applications during the individual assignments. Weekly participations were thought provoking and sometimes added a different dimension to my thinking. We completed our group project based on the research we did on different Web 2.0 technologies. All the activities added extensively to my knowledge about the technologies.

Use of DETC 630 for the future:

I have learned in detail about different technologies and various applications in everyday life as well as in the field of education. I have started thinking about the popular mainstream

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technologies in terms of their use in education. For example, I had a rough idea about cloud-computing before taking this course. After all the readings and doing the research for the group project, I have learnt a lot more about cloud computing. As a language teacher, I think about pedagogical aspects, especially assessments and learning outcomes, of a particular application. The emerging world of numerous technologies helps education make more interesting and inventive. The ever expanding technologies not only make our personal and professional life easier, but also enhance the social and educational fields.

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