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The Future Of LMS and Personal Learning Environments

Prof.Dr.Mehmet Kesim , Hakan Altınpulluk

Prof.Dr.Mehmet Kesim, Anadolu University,Turkey
Hakan Altınpulluk, Anadolu University,Turkey

Abstract

 In recent years, educational approaches have changed rapidly due to technological developments. New technologies bring new methods, concepts and techniques to Open and Distance Learning systems in particular. Learner centered systems have started to become popular in Open and Distance Learning because these systems are more personalized and collaborative. While learner centered systems gain attention, traditional and teacher centered systems have diminished in reputation. In this context, Learning Management Systems (LMS) are incapable of delivering many of the interactive web 2.0 features to learners. However, Personal Learning Environments (PLE) enables learners to organize their learning, provides the freedom to choose content, and allows communication and collaboration with others easily. In addition, PLEs enable learners to continue learning after formal courses have ended, and makes lifelong learning possible.

In this study, Personal Learning Environments (PLE) are defined, relationships between web 2.0 and PLE are portrayed, the literature of the Personal Learning Environments (PLE) and Learning Management Systems (LMS) are reviewed. These systems are compared with each other and the necessity of PLEs and pitfalls of LMSs are identified. Some of the personal learning environments are examined and evaluated based on George Siemens's connectivist approach. Strengths and weaknesses of PLEs are listed. Finally, recommendations for the improvement of the PLE are specified.

1. Introduction

The rapid development of technology has affected educational approaches. Particularly, the internet has changed students' profiles and learning styles. Today's students prefer more customizable and interactive systems for learning. As a result, in opposition to obsolete learning theories and concepts, modern and learner centered concepts and approaches such as 'Personal Learning Environments (PLE)' and 'connectivism' have emerged.

Both face to face and online education institutions are trying to implement a learner centered approach in their own systems. The systems, in which learners can take on their own learning responsibilities, have recently proven to be highly preferable. In order to better understand this phenomenon, the history of web technologies are should be examined briefly.

The development of web technologies and the transition to learner centered approaches are similar. When web 1.0 technologies emerged, users were static, passive and only read the content, with no capability to edit and modify web pages. On the other hand, web 2.0 was a revolution for users, institutions and academia. Web 2.0 technologies provide tools and applications with which the users can communicate and collaborate with others in social networks

and can be active in the whole process. In this regard, web 2.0 tools have created great changes in both technology and pedagogy.

The approach of Web 2.0 is that users can change and arrange on their own content, thus manage their learning process,which inspired other online learning systems. Learning Management Systems (LMS or VLE/CMS),which were once the most important components of online learning, began to become unpopular among educators. This is most likely due to the closed and teacher centered nature of LMSs. In these systems, learners are unable to change the content. The authority of the course is given to the administrator. Furthermore, if the course process ends, the process of learning ends too. In this respect, LMS does not support lifelong learning.

Due to these inadequacies of LMS, the need for a new concept and learning theory emerged in online learning.In this context, personal learning environments and connectivism emerged. A Personal Learning Environment (PLE) is a new concept in which learners can manage their own learning process, collaborate and communicate with others and receive personalized learning. Learners could benefit from not only a single source, but also from many of web 2.0's tools, add-ons and extensions. "Personal Learning environments are not an application but rather a new approach to the use of new technologies for learning (Attwell,2007)."Today's learner requirements are changed/shaped by new technologies and instead of LMSs, a more flexible and learner centered approach such as PLEs should be used in the process of learning.

2. The Future Of LMS And Personal Learning Environments

In traditional education, the teacher is a person who undertakes all learners' responsibility of learning and is at the center of the instructional process. In this context, LMS seemed compatible with traditional education as both of them are based on a teacher centered approach. LMSs are deposed by changing technological and pedagogical movements. According to Jones (2009), "LMSs have been slow in adapting to new developments on the Web in terms of social networking and widgets". As a result, while learner centered approaches gained power, teacher centered approaches that could not adapt today's technologies lost power.

This study posits that LMSs are inadequate in adapting existing technological and pedagogical trends. In LMSs, the content is transferred by teachers in a formal manner. In a sense, these systems do not support informal learning. "Most content within a VLE (or LMS) is not available to the outside world; it is also often unavailable to learners after they leave a course (Wilson et al., 2006)." In this respect, LMS does not support lifelong learning. Various extensions have been launched in an attempt to develop a more flexible LMS, yet these endeavors have been futile. As stated by Schaffert & Hilzensauer (2008), "the concept of LMS limits the role of learners to the possibilities of the learning management system and the creativity of the teachers, the concept of PLE focuses on active, self-directed, creators of content."

Informal and self-directed learning have gained importance recently. According to Siemens (2004) "Informal learning is a significant aspect of our learning experience."LMS is used only in formal education as basic or auxiliary instructional material, while PLE can be used in both formal and informal education.

Web 1.0 offered non-interactive and read-only web pages for users. "The arrival of Web 2.0 has brought possibilities and expectations of flexibility and personalisation of learning that highlight the rigidity and limitations of the LMS(or VLE), and has given rise to the evolution of such systems into the concept of a Personal Learning Environment (Pearson, Gkatzidou & Green, 2009)."In this regard, Siemens (2007) stated that, "PLEs aren't an entity, structural object or software program in the sense of a learning management system." According to Van Harmelen (2006)," ideas about PLEs are still forming."Although PLEs are a new notion for learners and educators, when compared to LMSs, these environments are more robust and offer interactive tools absent in LMSs.

There are many definitions for PLE. According to Lubensky (2006) "a Personal Learning Environment is a facility for an individual to access, aggregate, configure and manipulate digital artefacts of their ongoing learning experiences." This definition emphasizes both facilitated and lifelong learning. Another definition, provided by Anderson (2006) states that "PLE integrates user's personal and professional interests (including their formal and informal learning), connecting these via a series of syndicated and distributed feeds." As can be seen, various authors provide varying definitions for PLEs. The truth of the matter is that the concept of a PLE can not be

singularly determined in one definition. According to Peña-López (2010), "PLEs are not just tools but ways to understand learning on the Net."

The influence of technological developments in education has also altered the profiles of both teachers and students, causing a shift in their demands. According to McLoughlin and Lee (2010), "digital-age students want an active learning experience that is social, participatory and supported by rich media." In this respect, PLE is an interesting and intriguing experience for students whom are shaped by technology. PLE uses many content sources, applications and tools for qualified learning. In fact, PLE is often used in our online lives unintentionally. People may use PLEs for formal/informal learning, sharing, communicating and collaborating with others. Social networks, bookmarks, start pages, blogs etc. may all be considered components of PLE.

Furthermore, PLE is useful for:
• Socializing with other learners.
• Customizable content.
• Different, easy and interactive way for learning.

The web 2.0 tools which are used for personal learning environments are as follows:

Bookmarks: Delicious, Connotea, CiteULike and Diigo can be used for sharing obtained sources.

Social networks: Social networks are the breakthrough of web 2.0 technologies. Web services such as Facebook and Twitter affected people's daily lives substantially. These sites are very important elements of PLEs because, they provide:
• communication
• cooperation
• sharing
• socializion with others.

RSS feeds: RSS is a protocol that lets users subscribe to online content using an RSS "reader" or "aggregator," which checks subscribed Web pages and automatically downloads new content (Educause, 2007). Google Reader is an example of RSS readers.

Bibliography: Mendeley and Zotero are well-known bibliography tools. They store book/article/paper names, total pages, publisher name etc. systematically.

Start pages: These web pages reflect and represent the underlying concept of PLEs. "Personalized start pages are online services that help you build a home away from home online (Pandia, 2007)." These start pages are personalizable to different degrees, with custom page titles as well as varying numbers of themes, colors, and layout choices, and all offer tabs for different sets of content based on topics (Muchmore, 2008)." Netvibes, Protopage, Symbaloo, UStart and Spaaze are some of the examples of PLEs. They allow adding RSS/atom feeds and organizing content. However, Pageflakes and some of the start pages are discontinued and some of them (such as iGoogle-1 November 2013) will end service soon. Personalized start pages should continue broadcasting and working, since they provide easy access to sources and allow multiple connections for learners.

Apart from these, the other eminent web 2.0 tools:

Search engine: Google Search, Yandex, Yahoo Search, Bing

E-mail: Gmail, Hotmail, Yahoo

Photo sharing: Flickr, Deviantart

Blog: Blogger, Wordpress.

Paper/presentation/article sharing: Scribd, Slideshare.

Online document storage: Google Drive, Dropbox, Sky Drive.

In addition, some services such as forums and wikis are components of PLEs that provide for sharing informal knowledge and interaction among users. Many web 2.0 tools are used for creating personal learning environments beyond what has been discussed. Accordingly, PLEs emerge from various and robust platforms. Nevertheless, PLE has some weaknesses.

Skrabut (2008) stated that "some of the issues are due to the institutional climate and infrastructure, other issues are due to training and support needs, and yet others are due to the vast array of options available to a learner." PLE

is based on a self-directed learning approach and the process of self-directed learning requires a degree of self-awareness.(Educause, 2009).In this context, PLE is not suitable for some learners that have limitations such as:

- Lack of awareness/self-awareness.
- Lack of responsibility for learning.
- Lack of self-regulated learning skills.
- Lack of technology/computer literacy skills.

"PLEs need on the one hand to focus on technical issues, regarding information exchange between services and user interface problems (Ullrich, Shen &Gillet,2010)." Additionally, PLEs have inequality of opportunity. Some students may not have access to the internet. Some of them can not benefit from technical and pedagogical guidance instantly.

In this day and age, information is increasing and shifting continuously through technology. Obsolete learning theories such as behaviorism, cognitivism and constructivism were developed in a time when learning was not impacted through technology (Siemens,2004).Those learning theories are insufficient for today's educational conditions. Thus, instead of those theories, a new learning theory has emerged for learners of the digital age. According to Downes (2007),"connectivism is the thesis that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks."

There are controversial ideas regarding which theoretical approach is suitable for PLE. Constructivist or connectivist? According to Skrabut (2008), PLEs incorporate the strengths of both learning theories.

"The Networked Student Model of constructing personal learning environments is reflected in many connectivist principles (Drexler,2010)." Kop and Hill (2008) argued that, "The online environment is one application that has been important for the development of connectivism." According to Baxi (2010), "the learning process/pedagogy used in MOOCs and PLEs, with its emphasis on network formation, reflection, open-ness, connected-ness and other ideas, reflect the principles of connectivism."

As a result of these ideas, PLE is based on a connectivism and design with connectivist principles. PLEs and connectivism share to some common traits. Common principles of connectivist learning and PLEs are:

- Diversity
- Autonomy,
- Interaction/Connectedness
- Openness (Downes ,2009).

Traditional learning theories have become unpopular compared with modern learning theories such as connectivism. New theories, environments and notions will change the future of education.

3. Conclusion

The educational process is evolving continually, such as a living organism. The paradigm shifts in education that affected learning theories/concepts have also changed the role of teacher and learner. Older systems have been discarded and learner autonomy has become important.

The information is continually renewing, shifting and increasing. PLEs are an easy way to organize information. Today, LMS is still used by many universities and institutions. Surely, the complete removal of these systems is a flawed approach. However, LMS should be more open, interactive, customizable and collaborative. On the other hand, PLEs are not a perfect systems either. For instance , administrators of educational institutions have a negative perception regarding the internet, social networks and online learning. Additionally, these administrators hesitate to implement new concepts and theories such as PLE and connectivism. Educational institutions must consider PLE seriously, and should follow through with academic research in this field. It should be implemented not only on an informal level, but also in formal learning environments. Under the circumstances, LMS and PLE's strengths should be integrated with each other and connectivist learning environments should be encouraged.

In the meantime, various start pages have ceased operation (i.e. Pageflakes, SuprGlu) or will do so soon (i.e. iGoogle). This situation may represent a threat that prevents the development of PLEs. PLEs which support formal, informal, self-regulated and lifelong learning should be developed further. PLEs have the potential to provide a

different and intriguing learning experience for learners, and should be given the opportunity to offer their benefits in all learning environments.

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