An analysis of e-learning system features in supporting the true e-learning 2.0

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Abstract

The e-learning 1.0 is no longer suitable for today's generation as it creates boredom and lack of understanding. The knowledge sharing process through the existence of social element is supported by technology web 2.0. This means we are looking at the use of an e-learning system which is more open. Realizing the benefits, most e-learning systems are competing to transform from the e-learning 1.0 and content centric to e-learning 2.0. However, to be considered as one of the true e-learning 2.0 system, a research must be done. This paper discusses on the features of e-learning 2.0. To represent the features, an analysis of the earlier models as well as latest versions of Moodle e-learning system was conducted. The version being compared is Moodle version 1.9 and 2.1 to see the revolution of the system. Documents related to this topic are also collected and analyzed. There are about 21 features of Moodle identified in the finding of this paper, when comparing available e-learning 2.0 systems. It shows how the features in e-learning 2.0 systems address the deficiencies in earlier version of the e-learning system and gives strong reasons for the full utilization of e-learning 2.0. Thus, more of the existing e-learning system should make a move towards the transformation and fully utilize the technology of web 2.0.

Keywords: E-learning, social network, knowledge sharing, e-learning 1.0, e-learning 2.0;

1. Introduction

   Time has moved on and as technology rapidly change, electronic learning also has gone through revolution since the existence the internet. The learning management system (LMS) which contain the knowledge, has been transform from physical medium to virtual server that has been used widely now. The type of medium influenced the style of the e-learning systems which start its popularity as e-learning 1.0 system. The limit of the medium makes it impossible to connect with other person or other resource live. Now, with the existence of internet, the innovation of knowledge medium also arises. There is various possible ways to connect with others and create the knowledge sharing culture. Those ways are learned from the experience of e-learning 1.0 system. Realizing the benefits, most e-learning systems are competing to transform from the e-learning 1.0 systems and content centric to

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e-learning 2.0 system (Won & Jeong, 2009; Wang, Tsai, Lee & Chiu, 2007). But because there is still complaint on e-learning 2.0, to be claimed as one of the true e-learning 2.0 system, a research must be done. The popularity of e-learning 2.0 systems is perhaps due to the awareness of the web 2.0 technologies. The advantage of web 2.0 is in term of its communication using social media, thus it is fit with current trend which promote the knowledge sharing. We realize the benefits of knowledge sharing in building knowledge community. The sharing process involve indirectly or directly in the existence of social network.

In conjunction with the rapid development of the social network nowadays, the development has created a new phenomenon in the IT world and become extremely popular. Social networking has become popular due to its purpose as a medium to connect and spreading information with one and another. There are many researchers before who has conducted studies and found the potential of learning using social network technology (Boyd, 2007; A. Hemmi, S. Bayne & R. Land, 2009; R. Land, & S. Bayne, 2008; Suraya, J. Waycott, S. Kurnia & S. Chang, 2010). The social network technology consists of web 2.0 technology such as blog, forum, picture sharing, videos and social network website; such as Facebook, Myspace and Twitter. Facebook has become addiction among people especially young generation (Bugeja, J. Michael, 2006). Besides its function as a communication application, the social technology does play a role in a learning environment. The surprising fact that reveal on the popularity of social network is giving us a clue on an alternative to build this sharing activity. Sharing activity is indirectly creating social network in learning. This technology is able to be a medium in exchanging information and support information for distributed learning. The involvement of this social element is giving the idea to create the various tools of web technology which involve social such as forum and chatting. This is the beginning of the transformation to e-learning 2.0. But as the world is eager to introduce web 3.0 technologies, the current web 2.0 technology need to be studied so that we really fully utilize the capability of the technology. Mohammad & Mona (2010) concluded in their article that information technology quality has the highest vote for e-learning critical success factor.

This paper is divided into four sections structured as follows. A literature review of e-learning 1.0 system and e-learning 2.0 system is discussed in section 2. Then, the features of the different version of Moodle are being compared in Section 3. The Section 4 then gives brief discussion on the result and concludes in the last section.

2. Towards true e-learning 2.0 system

Since the popularity of web technology such as web 1.0, 1.3, 2.0, the e-learning phases also following the web technology enriching the learning process and be more advanced. Since web 2.0 technology introduced, the e-learning 2.0 starts its popularity and automatically the earlier learning system that use older technology being called e-learning 1.0.

E-learning 1.0 system is referred to e-learning system that is content centric or intend for self-learning which is just for the person that use the system. The traditional e-learning or e-learning 1.0 is in the form of ready-made which is made available on electronic medium and left it for learners to decide on how to utilize the information (Gary, 2007). It is not yet has the communication tools feature. This is not suitable anymore for today's generation. Other problems such as boredom and lack of understanding the unique teaching advantages of electronic media are probably related with the need of social element which can be supported by web 2.0 technologies (Gary, 2007). All those problems might be solved using web 2.0 in e-learning. This is means we are looking for the use of e-learning 2.0 which is more open. Example of e-learning 1.0 is e-learning that has been compact into CD.

E-Learning 2.0 is a term coined by Stephen Downes in 2005 to designate "the use of Web 2.0 technologies in education" (Gary, 2007). The term e-learning 2.0 system here is referred more to the system that is used by a person, using available tools to connect with others without much restriction. Those tools make it possible for learners to share information and knowledge. Concept of sharing in learning has started since it introduced by Célestin Freinet on cooperative learning concept. Célestin Freinet cooperative learning starts after the hands-on learning technique which involves the students start sharing and discuss their work. This communication with others creates the concept of sharing in learning (David and John, 1990). Thus, adapting from the sharing in learning concept, e-learning 2.0 system which is in electronic version, it is a system used by a person and not limited for him/her but the learning is open and the communication with other people exist and it create the knowledge sharing. E-learning 2.0

include aspects of open learning environment into consideration. The system openness is in term of editing and sharing content and ideas, using various teaching and online technology and access from various communications medium worldwide (Vladimir, 2003).

Even though currently we are on e-learning 2.0, there is still comment from the user who brings out the issue of the need of web 2.0 technology (Amin Embi & Najib, 2010). This urges to the need of a true e-learning 2.0. Fully functional e-learning 2.0 systems must provide space for real interaction. As Yang (2009) reminds that social negotiation is an important aspect; we agree that the elements are required in other to see the e-learning success as a true e-learning 2.0 system. In brief, social negotiation is the elaboration, corroboration and refinement of thoughts and ideas, and it is mainly ensues in discussion and chat (Yang, 2009). From discussion of various articles, the features that need to be highlighted in other to be entitled successful and fully utilize e-learning 2.0 system are; chat, forum or discussion board but with the existing of social negotiation; materials and content sharing tools in existing of collaboration; other application integration in existing of sharing; and customize tools in existing of learner's independency (Yang, 2009; Andi, 2011; Khoroshilov, 2011).

3. Comparative study based on features

For this study, Moodle is being chosen for the e-learning system comparison and represent all the other e-learning 2.0 system to show if the e-learning system has the true e-learning 2.0 features. The different version of an application is sometimes not related with the web technology phases, but because the purpose of this study is to see the features of different version of e-learning 2.0, different version of Moodle is being chosen. Because of it openness since the first development, Moodle can be one of the system for the next generation after VLEs (virtual learning environment) which is Open Learning Environment (OLE) (Vladimir, 2003). Other reasons for the choice of this system are; free, use all over the world, and it include social tools (A. Al-Ajlan, H. Zedan, 2008). An analysis is done by listing the features in Moodle 1.9 and Moodle 2.1 to see the changes developed by Moodle towards fully utilize e-learning 2.0 systems.

Table 1. Comparison between Moodle 1.9 and Moodle 2.1 features (Al-Ajlan, A., Zedan, H., 2008)

Features	Moodle 1.9	Moodle 2.1
Communication tools		
Discussion forum	Yes	Yes (comment display throughout Moodle)
Discussion management	Yes	Yes
Email	Yes	Yes (treated more as message-more engaging)
Blog	Yes	Yes (improved with support comment for each entry)
Real-time chat	Yes	Yes
Video services	Yes (need to enable Youtube plugins)	Yes (features on messaging using media icon)
Course (Community hubs)	No	Yes
Group (Cohorts)	No	Yes
Materials and content tools		
File exchange	Yes	Yes (existence of file picker ease file selection)
Group work	Yes	Yes (improved interface on some modules)
Community	Yes	Yes (new block to keep track course)
Student portfolio	Yes	Yes (supported more format and plugins)
Other application integration		
Plugins	No	Yes
Customize tools		
Users profile	Yes	Yes (can be customised with blocks, news, feeds, info)
Language	Yes	Yes (New web portal for groups to collaborate on translating Moodle)
Security	Yes	Yes (enhanced and recommendation settings)
Appearance	Yes	Yes (new themes, core support for custom menus in all themes)
Front page	Yes	Yes (more option for info and structured)
Notification	No	Yes
Advanced features	No	Yes
Registration	Yes (self-registration)	Yes (self-registration + register to specific hub)
Total features	**21**	**21**

Total available	16	21
Total missing	5	0

The Table 1 shows the comparison between Moodle 1.9 and Moodle 2.0 features according to the categories which has been discussed in section 2; chat, forum or discussion board with the existing of social negotiation (communication tools); materials and content sharing tools in existing of collaboration; other application integration in existing of sharing; and customize tools in existing of learner's independency. Following the Table 1 is the elaboration of the features category.

3.1. Chat, forum or discussion board in existing of social negotiation

We can see from the Table 1, the lack of this version is in term of social element or collaboration. The communication tool is being chosen as it reflects the differentiation between web technology 1.0 and web technology 2.0 which is communication using social media. But this lack is cover up by the version 2.1 which has its own space for features options of activity modules and it is more engaging and interactive. The activity modules are place under plugins. Version 2.1 also includes the community hubs and cohorts. According to Moodle, a community hub is a term given to describe a course while cohort is refers to a collection of users which easily identify as group (http://moodle.org). They create this community hubs tools to make it easy for cohort to roll on or roll out in certain course they prefer.

3.2. Materials and content sharing tools in existing of collaboration

Even though the Moodle already has the social element, the system is still lack of the strength of collaboration (Roberto, 2009). As proposed by (Roberto, 2009), the process-based collaboration structures which are called learn flow need to be assessed in other to support a meaningful learning process. And (Ching-Tsorng, 2010) also proposed a module, designed for sharing course content and collaborative teaching. Those proposals show the need of collaboration which supports the use of open e-learning system. Fortunately, in Moodle 2.1 it is more like web 2.0 systems as it has its own space for file sharing.

3.3. Other application integration in existing of sharing

From (Lei, 2011), the study revealed that most of the instructors want more function on Moodle system and one of them is the integration of Web 2.0. Activity modules that contain many applications have been included in Moodle since Moodle 1.4. Since then, many applications have been added and Moodle 2.1 offer the plugins feature that manage applications include over 30 type of plugins to be choose such as question type, activity modules (such as Wiki, workshop and glossary), authentication methods, enrolment methods, messaging processor, block, repositories (such as Dropbox, GoogleDocs and Youtube Video), and course reports.

3.4. Customize tools in existing of learner's independency

From Table 1, even though Moodle 1.9 doesn't have notification or advanced features, the features contain in it is located under other features. In management perspective, we can see that the latest version of Moodle is more structured, separate the function of activities under plugins compare to Moodle 1.9 which put activity under modules. Activity comprised the features such as forum, chat and lesson. This means, if the activity is under plugins, the authorization to change on what the activity can do is higher.

This finding indicates that social element which fall in communication tools is important in supporting the group activity in other to create knowledge sharing. This is strongly agreed by (Keith, 2006) which said the need to collaborate and share become the factor of transforming to e-learning 2.0 learning. Thus, we can see the issue of unsuccessful e-learning 2.0 systems can be solved or improved; indirectly it is shown as the strong element to be

highlight in e-learning 2.0 systems. This bring the solid reasons for the transformation to the true e-learning 2.0 so more existing e-learning system will make a move towards the transformation. As predicted, the creation of activity modules or collaborative element as the tools in e-learning can solve the lack of connection and communication with other people in unsuccessful e-learning 2.0 systems. The connection is important in providing meaningful learning.

4. Discussion and conclusion

From what have been analysed, from Moodle 1.9 towards Moodle 2.1, there are changing in allocating the features that can be categorized under web 2.0 technology. Moodle 1.9 has 5 missing features and covered by Moodle 2.1. In sum, the issue of earlier systems in e-learning is the missing of some elements of collaboration, social and knowledge sharing which most included under other application integration feature. Those are features that are included in e-learning in other to be entitled e-learning 2.0. The communication and collaboration tools are highly develop nowadays. The tools can provide the rich of knowledge by knowledge sharing. From the study, features of Moodle shows a great sign as a true e-learning 2.0 but the existing of social negotiation, collaboration, sharing and independency are depend on other factors which need further research. Other than that, Moodle seems working towards e-learning 3.0 as it seems to start engage some of web 3.0 features which one of them is personalization. With the vast information today which involve in knowledge sharing through various web tools of communication, it is wise to ensure we are using the true e-learning 2.0 so we can utilize all those features that contain in open e-learning to make learning process more meaningful.

Acknowledgements

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