

A Relational Design Oriented Seamless Framework to Support Idea Sharing and Social Network

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Abstract: Mobile technique and device development have become mature. Online community and application of social networking facilitate our connection and communication with other people. However, the design of social networking supporting learning activity still remains many gaps. The aim of this study is to demonstrate the relational design oriented seamless framework and the seamless learning environment architecture. Currently, a platform named cocoing.info is under construction based on the proposed frameworks. In the future, the users' behavior on the platform will be collected and analyzed.

Keywords: Social learning network, seamless framework design, concept map

1. Introduction

With the mobile technology evolution, online social networking is affecting students with its effective communication and convenient usage. However, using social networking on facilitating students' learning still have many problems. For examples, social networking is a casual interactive platform where the students' interactions mostly are occasional. Meanwhile, social networking learning environment structure is weak to support a compact learning activity. Therefore, a systematic framework is needed to help teachers as well as students to integrate the social networking into the learning activity. This study aims to design an online relationship-based social networking cloud platform, in which learners can create and share their personal knowledge with concept map. The framework describes the relationship between knowledge and social communities, and how they work on courses. Furthermore, to evaluate the possibility of the framework, an online learning platform named CoCoing.info is designed and implemented according to the guidelines of the framework.

2. Related Work

2.1 Concept Map Assisting Learning Activity

Many studies indicated adopting concept map in learning strategy has many advantages comparing with traditional learning (Chu, Hwang, & Liang, 2014; Hwang, Yang, & Wang, 2013; Liu, Chen, & Chang, 2010). More specifically, as assistance of online computer software, computerized concept map facilitates learners to (1) create and edit the concepts anytime and anywhere; (2) extend the scope of learning topic by the relationships of concept maps; (3) integrate online learning resource into concept map, such as webpage and multimedia; (4) share their concept maps with others; (5) construct content of concept map with peers. For example, Liu et al. (2010) implemented a computerized concept mapping learning strategy on English reading comprehension. Concept map was used as a tool for students to easily understand the English article structure when they were reading. Key point words of article were displayed and connected as a graph that helped students to recognize text. The results of this study indicated computerized concept map is helpful on reading for low-level students and enhance the using motivation.

2.2 Social Networking

Mayer-Schönberger and Cukier (2013) indicated that social networking is getting powerful in big data era. Online community becomes as a Learning Management System (LMS) or a Knowledge Management Tool (KMT) that allows learners assess information and discuss their knowledge with each other. For example, the online community platform, Facebook, is popular applied in education and discussed in many studies (Wang, Woo, Quek, Yang, & Liu, 2012; Lampe, Wohn, Vitak, Ellison, & Wash, 2011; Selwyn, 2009). Such social networking provides a comprehensive way to share and offer ideas appropriately through intimacy degree or professional knowledge contents.

3. Method

3.1 Seamless Framework Design

Figure 1 displays the seamless learning environment architecture and its framework. The platform includes four servers including web server, database server, mail server and notification server. Mail server and notification server work to connect the relationship of each learner to assist the development of social networking. There are many APIs in this platform which were constructed of the programming languages include HTML 5, JavaScript, jQuery, and PHP. Those APIs provide learner to use many cloud services with varied devices, for example, creating, editing, and sharing their concept maps. Additionally, they can invite peers to join the friends list and organize private friend groups. Therefore, learners in this platform create many interactions and learning activities by social networking. Finally, the data of learner's social networking, preference, behavior, and concept maps was collected and store in the database. The analysis result of data can provide more adaptive learning content and material for each learner based on the concept maps and social networking.

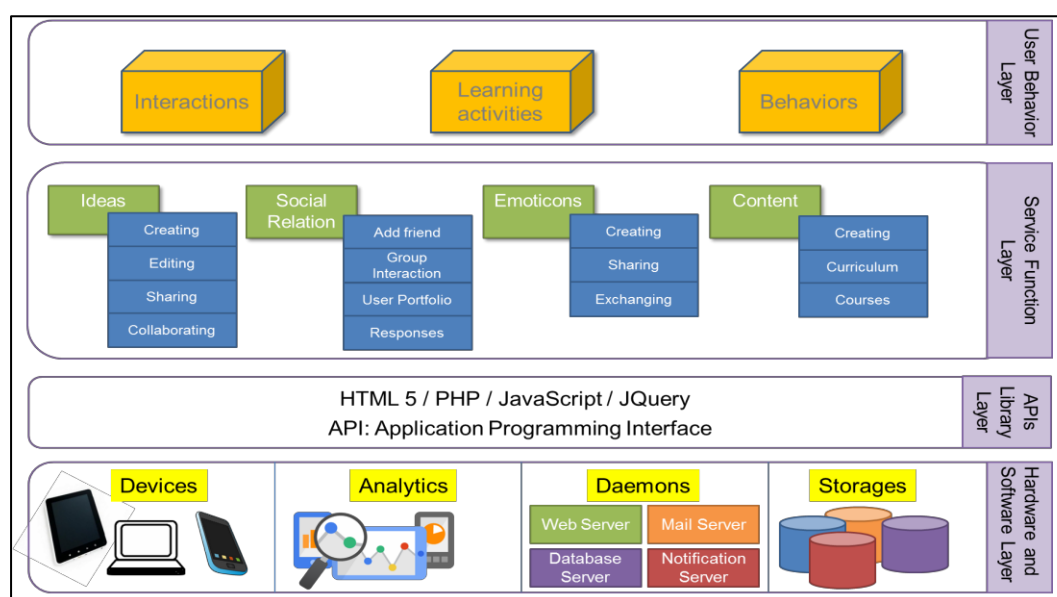


Figure 1. Seamless Learning Environment Architecture and its Framework.

A seamless framework in this study has two sections of implementation, software and idea delivery. First, technology devices have become heterogeneous in this digital age (Wong, Milrad, & Specht, 2015; Chan *et al.*, 2006) that cloud-based application has more convenience and benefits than offline application. Most of application works in this study are functioned on cloud computer. Then, learning and sharing have become seamless and ubiquitous with PC and mobile device. Second, another seamless environment design is to create a space and scheme for learner to produce ideas and share through the social learning networking. The reflection of idea sharing affects not only the sharer but also the peers who browse, review and comment. Thus, new discussion and idea are creating and sharing based on the reflections by social learning networking. Such circuit displays as a seamless framework of knowledge sharing and delivery. To sum up, both sections of seamless framework was

developed in this study in order to provide an online relationship-based social networking cloud platform.

3.2 Benefits of Concept Oriented Design and Social Networking

Based on the concept oriented design and social networking, knowledge creating and sharing becomes more easily and convenient. The features of concept map such as knowledge deconstruction and relational connection are an important role in this progress. Additionally, through social networking, each learner can be a concept map provider and mentor which interacts with peers. The concept oriented design with social networking can bring many advantages, learners can do such works including (1) saving their ideas; they can create concept maps for extracting personal knowledge and store on cloud platform; (2) sharing their ideas; they can deliver and share concept maps with peers and friends; (3) building their own community; through social networking design, they can add friends, and manage their friend list; (4) using authoring tools to create their curricula; the platform provides functions for creating curricula which construct of their own concept maps and online learning resources, such as web pages, images and videos.

4. Conclusions

Social networking is getting mature to implement into learning activity to assist student's learning. However, how to build a social networking with seamless learning platform still remain some problems. To this end, this study designs a framework of how to design a relational oriented seamless learning environment. The framework provides a structure which may be a reference for implementing a scheme of integrating social networking and concept map for supporting knowledge sharing and exchanging. To evaluate the possibility of the framework, a relationship-based social networking cloud platform is under construction based on the proposed frameworks. Currently, it is an idea proposal. The website based on the idea is still under construction. In the future, the users' behavior on the platform will be collected and analyzed.

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