"SOCIAL KNOWLEDGE CO-CONSTRUCTION" CONCEPTUAL FRAMEWORK AND GOOGLE+ APPLICATIONS

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-Abstract-

In the current century, power and prestige of individual or community are related with their knowledge and the capability to use information effectively. For effective and individualized knowledge construction process, e-Learning design changes to more social and collaborative design with new generation technology (Young, 2011). WE-learning is the combination of mobile learning and e-learning called ubiquitous learning integrated with social networks for collaborative knowledge construction process. Social interaction is so important that Siemens (2006) stresses that a major challenge today is not what you know but who you know. Social media support creating knowledge collaboratively through its network and collaborative services (Chatti, Klamma, Jarke & Naeve, 2007). Social network platforms provide participant information exchange, then knowledge construction, and finally learning and development (Salmon, 2003). It is popular that nowadays, according the social network literature researchers have focused on how to integrate social network tool trends into the knowledge construction and collaborative learning process to create new knowledge creation experiences and practice across communities. So the aim of that study is to present the *new framework as* "social knowledge co-construction model" *based on* online collaborative knowledge construction process and as a social network system, contributions of Google+ applications for the collaborative knowledge construction process. The framework includes the integrated of formal and informal knowledge construction and learning process within a social context with social networking web system and its applications. As a result, four phases which are web search, social interaction, shared workplace/environment and team works/discussion were analyzed and defined to form Social Knowledge Co-Construction Framework. As in the natural knowledge creation process, the process of the social knowledge co-construction framework is spiral cycle.

Keywords: Social Knowledge Co-Construction, Collaborative Knowledge Construction, Social Networks, Social Learning, Google+, Google+ Hangouts, Google+ Circles, Google Drive, Google+ Search, Knowledge Construction Framework

JEL Classification: A30

INTRODUCTION

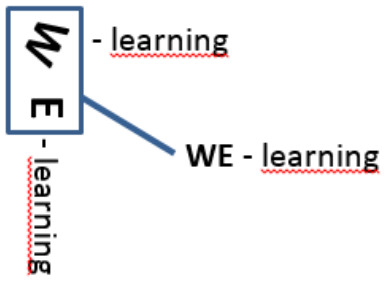
In conventional learning design and approach, instructor is seen as the source of the knowledge. The design of the learning process is wholly teacher centered and all the conversations occurs student to teacher not the student to student. The students are passive listener or receiver in the traditional learning design. According to Vygotsky (1978), social interaction and cultural influences had a major effect on the formation process of learning. Also, Polanyi and Sen (2009) emphasize on conversation within an open community to promote learning and knowledge and they defined knowledge is as socially constructed. According to Wenger (1998) emphasize that knowledge is not be able to construct in individual minds however it build up with participation in social practices.

Knowledge construction and learning can be seen as a social process. Especially, knowledge construction is defined as adding, elaborating and evaluating ideas, summarizing and synthesizing external information, and combining different facts and ideas (Veldhuis-Diermanse, Biemans, Mulder & Mahdizadeh, 2006). For this structure of knowledge construction and learning process is considered as active and dynamic rather than passive and static. Social interaction is so important that Siemens (2006) defines that in decades major challenge is not what you know but who you know. He promotes connectivism as a new learning and knowledge creation theory to emphasize the process as a connection/network-forming process. In the connectivism, learning is the act of encoding, connecting and organizing specialized information sources to facilitate data, information, and knowledge.

Social media consists of networking and collaboration services to support collaborative knowledge creation as well as media sharing and aggregation. According Laurent, Wanda, and Michel (2009) social network users are proactive behaviors. Some of the trainees have almost reached objectives with technology enhanced cooperation and collaboration. Also, in social environment learners can collaboratively discuss and summarize about topic or problem to solve. Online socializations provide participant to exchange their information, to construct knowledge, and then to learn and develop their knowledge (Salmon, 2000).

According the social network literature researchers have focused on how to integrate social network tool trends into the knowledge construction and collaborative learning process to create new knowledge creation experiences and practice across communities. Based on collaboration culture with new trend technology as an enabler, the one-size-fits-all, centralized and static models of conventional learning should be replaced with a more social, personalized and dynamic model for learning (Chatti, Klamma, Jarke & Naeve, 2007). We present that a social knowledge co-construction model/framework includes the integrated of formal and informal knowledge construction process in a social context with social networking web system and its applications.

Learning is basically about people so this requires a change in focus from static-content to people driven dynamic content models of learning and knowledge construction. For effective knowledge construction process, e-Learning design changes to collaborative we-learning design (Chatti, Klamma, Jarke & Naeve, 2007). Collaboration working culture can encourage knowledge based networking and community building so it can provide life-long learning. A kind of ubiquitous learning, we-learning is going to free us from the computer such as the social network sites enable sharing knowledge easily and collaboratively. We-learning approach can provide learners synchronous or asynchronous social collaborative working platforms to construct collaboratively knowledge and experience. Ubiquitous learning is a fundamental of modern learning approaches that can be called as we-learning as shown in the figure 1.



WE-learning is the combination of mobile learning and electronic learning called ubiquitous learning integrated with social networks for collaborative knowledge construction process.

Figure 1: The Form of WE -learning

In the next parts, researcher will present the *new framework* based *on* online collaborative knowledge construction process and as a social network system,

contributions of Google+ applications for the collaborative knowledge construction process.

THE FRAMEWORK: SOCIAL KNOWLEDGE CO-CONSTRUCTION

In this decade, currently we are in a change process about knowledge construction approaches. The shift can be happen from conventional knowledge creation process to collaborative social knowledge construction process. Rapid development and ubiquitous of information technology affect the lives of young generation. With mobile technology and social networks learner overcome setting and connectivity boundaries for learning and sharing knowledge. In this century, learner should learn complex concepts with deep understanding and gain information use ability to construct knowledge (Sawyer, 2006). Also, teamwork and lifelong learning are some of 21st century competencies (OECD, 2010). These terms are also the key concepts of the Social Knowledge Co-Construction framework. The figure 2 shows the process of the Social Knowledge Co-Construction framework.

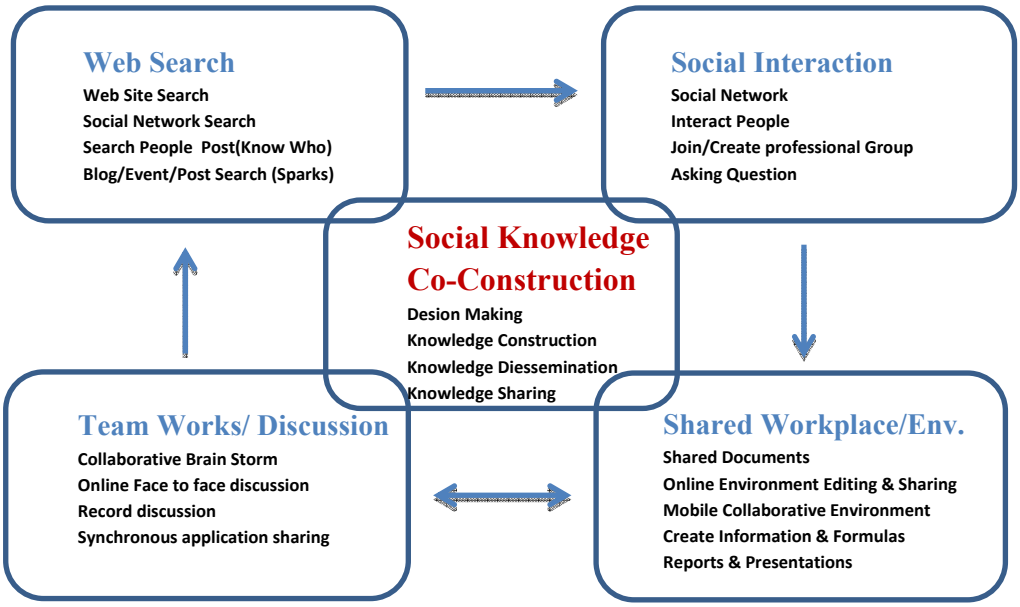


Figure 2: Social Knowledge Co-Construction Framework

Teamwork, socialization and higher order thinking skills are integral part for workplace of knowledge economy. Processing of complex information, thinking systematically, asking question, communicating new people, brainstorming and being flexible new information, making decision, creating and sharing solution to real-world problems are important for learning and 21st century skills (OECD, 2010), as in the framework.

As in the knowledge creation process, the process of the social knowledge co-construction framework is spiral cycle. Progress between phases is not linear means that each phase can trigger any other phases. It can be listed five phases of the framework.

- Web Search
- Social Interaction
- Shared Workplace/Environment
- Team Works/Discussion
- *Social Knowledge Co-Construction (all comprehensive integrated)*

Almost all Google+ services and applications can be adapted for knowledge construction use. In the next part researchers present and examine the services and application and how to use for supporting the framework.

GOOGLE+ AND GOOGLE+ APPLICATIONS

In the framework all the progress is online and with the help of social network system. Also, some social network applications are needed to support process of knowledge construction. Google+ is not only the combination of social networks but also integration of Google services and applications. Google+ social platform enable a simplified dashboard interface to use and manage almost all Google applications and service. Google+ is available as a website and application on mobile devices with independent operating system and with free of charge.

Google+ and its application can be used to support social knowledge construction process. Google+ as a social network can engage and stimulate students to share their resources, knowledge and contributions. Also it make easy to monitor and comment peers' contributions. Google+ and its applications support the externalization process by giving voice to everyone and providing a space to capture personal knowledge and distributed discussions across sharing status and hash tags, immediately document thoughts, and annotate information with Google Drive application.

When any users have to learn new information to use in the work, they start with performing internet search to find relevant information via search engine. Generally, nature of learning process, the approach is that if users are not sure about what they are relevant with looking for, they are taking advices from experts in the area. There is a sense that it is not what you know but who you know. Also, Mao, Shen and Chengzheng (2011) states that search engine with social network optimized has more positive effect than basic search engines on probability to get relevant information as they need. Google+ Search allows users to search Google+ posts, Google+ people and the web (Google, 2012) so it can provide opportunity us to start with native and right way to construct knowledge. Also, it start with social supported Web Search in the process of the Social Knowledge Co-Construction framework.

Online socializations enable participant to exchange information and create knowledge for learning (Salmon, 2003). Instructor can use the social network for externalization process in a specialized or general group. To provide this kinds of situation, Google+ offers easy to use and manageable Circles feature like groups. In the classroom case, each circle can be thought as a course section. Instructor can share with personal or any number of circle. It is similar to private class or public class for learning process. This type of online socialization is more manageable and eliminating some limitations such as time and schedule issue with other applications. For example, Yensen, (2012) uses the Google+ Circle and Google+ Event integrated calendar application for mentoring class, he states that asynchronous and synchronous social communication within circle are positive effected and the sharing of files, and documents is more painless. Externalization is importance and difficult to manage process while creating knowledge. In the framework, this difficult process can be supported with Google+ Circle, Google Events, sharing instant and asking question and discussion with expert user about the topic in the social platform. Also, an example Stanford University created a shared Google+ Circle of different organizations on campus who are on Google+ network (Google+, 2011).

Google+ Pages and Document Sharing with Google Drive and YouTube application support the third stage of cycled framework, namely shared workplace and environment. Google+ Pages allow you to create a Google+ Page for your organization or group so it facilitates shared environment within or public area (Google, 2012). For example Washington University in St. Louis uses their Google+ Page to inform campus news and updates. Another page Georgia Tech students promote the newest volume of their research journal (Google, 2011). According to Yensen, (2012) Google Drive application provide the sharing of

folders and files with circle members and any e-mail address and can be accessed through Hangouts or browser, or the client side application on desktop or mobile device. The shared users can work together asynchronously and synchronously. These applications provide shared workplace to gather information shared document and report for group or organization asset.

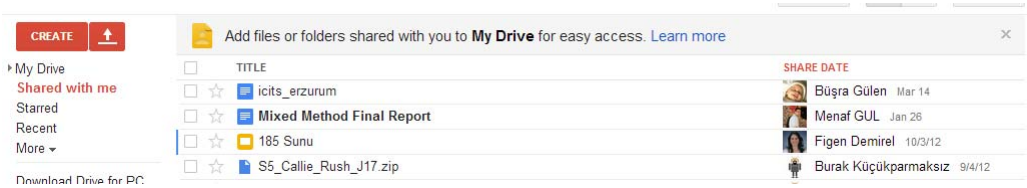


Figure 3: Google Drive Screen Capture

Google+ Hangouts video-conferencing application is powerful tools to trigger externalization via open participation, dialogue, and discussion. The nature of human, we always tell more than we write down. Google+ Hangouts gets created, with a minimum amount of effort. Also participant can record and shared any other interested people. This free video-conferencing tool provides opportunity for social interaction and collaborative knowledge construction process capturing. Google+ Hangout application allow up to 10 people to video-conference at no charge (Google, 2012). The application is one of best video-conferencing tool in the current technology both desktop and mobile device support. Moreover, with YouTube integration user can be able to easily live video broadcast on user's channel.

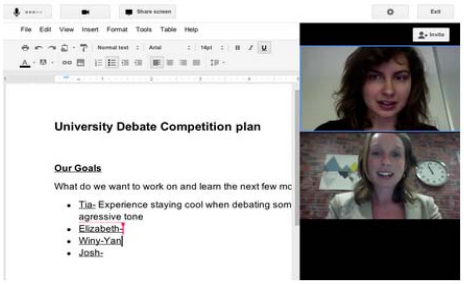


Figure 4: Share Docuement with Google Hangout (Google, 2012)

As can be shown in Figure 4, with Google+ Hangouts, instructor or user can be able set up a Hangout with students or colleagues to review their work. Another example, researchers can launch a Hangout with peers to discuss and work collaboratively your upcoming journal article (Google, 2012).

As mentioned above in the article, Google+ Hangouts is used for video conferencing tool in a remote education course or collaborative work. It provides participants to share documents using Google Drive or to share their own screens. The combination of these Google+ functions adds considerable support to the student team works remotely and discussion (Yensen, 2012). The most popular application in the Google+ social platform is Hangout application and there is a lot of example to use for collaborative construction knowledge process. There are a lot of possibilities that can be imagined when using Google+ into formal and informal knowledge construction process. Social Knowledge Co-Construction framework is flexible and not linear cycle for process. Depends on you, it can be change or modify for your own knowledge creation process. For example, according to Taylor Bell (2011) indicates that he uses Google+ Hangout to interact with fellow students and learning process in the math course. The users attended the scheduled hangout section or later study from playlist state that tool is effective and flexible for studying tool individual or collaborative knowledge construction.

After four phase of the Social Knowledge Co-Construction framework process, Google+ Community pages and Stream application to get feedback and discussion to final decision and to construct knowledge. These application and tools can facilitate user to construct knowledge with socially interacting expert and peers via ubiquitous social platform. Social Knowledge Co-Construction framework is the online collaborative knowledge creation process outline for formal or informal knowledge and the framework can be changed because of its flexible and not linear structure cycle.

DISCUSSION AND CONCLUSION

For K-12, Facebook can be appropriate but Facebook are not ideal for university settings because of Privacy concerns always throttle the ‘need’ of instructors for social media (Oberer & Erkollar, 2012). Management of privacy issue is difficult on Facebook with groups. On the other hand, Google+ with circles offer manageable and flexible platform to share links and build a class community or circles (Curran, Morrison, & Mc Cauley, 2012). Google+ is not only social network platform but also combination of other type of social network features integrated google services. Google+ can become a dominate tool for personal and professional social knowledge creation needs (Curran, Morrison & Mc Cauley, 2012). Google+ services and application provide more flexible and easy to use management to control whole process of the Social Knowledge Co-construction

framework. Also, Google+ is a dynamic content-driven platform or to put it another way people-driven models of learning and knowledge construction process as in the framework. As in the natural knowledge creation process, the process of the social knowledge co-construction framework is spiral cycle.

Literature review and studies show that Social Knowledge Co-construction Model framework based on online social network and online collaboration studies can be applicable by Google+ applications to support collaborative knowledge construction process. However, Social Knowledge Co-construction Model framework needs to apply on real online learning environment and investigate the results to understand if this framework with the support of Google + applications is applicable or not.

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