New opportunities with Web2.0 technologies and Constructivism theory in culturally diverse classrooms

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ABSTRACT

This paper attempted to explore how Web 2.0 technologies present new opportunities for culturally diverse students. Web 2.0 considered as a new way to the web applications and Internet services. This paper suggested the constructivist theory as theoretical framework, As constructivism has affected the various educational fields throughout the world. The constructivist's learning theory' have included many goals such as: developing higher order critical thinking skills; making the participants active in their own learning; where learners will construct their own knowledge; providing flexible time frame; helping students understand their individual learning styles; interacting with other students to share and reflect as they construct learning meaning and solve problems .in regard, this paper underlines collaborative learning, students' motivation, flexibility, style of learning, and critical thinking as fundamental features of Web 2.0 technologies for teaching and learning especially for learners/students– regardless their cultural backgrounds.[1]

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الملخص

تسعى هذه الورقة العلمية للكشف عن كيف تقدم تقنيات الويب ٢.٠ فرصًا جديدة للطلاب ذوي الثقافات المختلفة. حيث يعد الويب ٢.٠ طريقة عرض جديدة لتطبيقات الويب وخدمات الإنترنت. وقد اقترحت هذه الورقة النظرية البنائية كإطار نظري، حيث أثرت البنائية على مجالات التعليم المختلفة في جميع أنحاء العالم. وقد اشتملت نظرية التعلم البنائية على عدة اهداف مثل: تطوير مهارات التفكير النقدي العليا. جعل المشاركين نشطين في تعلمهم ؛ حيث سيقوم المتعلمون ببناء معارفهم الخاصة ؛ توفير إطار زمني مرن ؛ مساعدة الطلاب على فهم أنماط التعلم الفردية الخاصة بهم ؛ التفاعل مع الطلاب الآخرين للمشاركة والتفكير أثناء قيامهم ببناء معنى التعلم وحل المشكلات. في هذا الصدد، تؤكد هذه الورقة على التعلم التعاوني ، وتحفيز الطلاب ، والمرونة ، وأسلوب التعلم ، والتفكير النقدي باعتبارها سمات أساسية لتقنيات Web 2.0 للتعليم والتعلم خاصة للمتعلمين / الطلاب بغض النظر عن خلفياتهم الثقافية.

Web2.0 technologies and Constructivism theory in culturally diverse classrooms

One of the greatest technological inventions of the 20th century is the Internet and its increasing influence among people across the world. The Internet has transformed education over the last decade and with changing technologies, the ways in which the Internet as educational online environment can be used effectively in education is continuing to build up new and exciting learning opportunities. The technology is a place where learners/students can have fun and learn while exploring many exciting things through its opportunities. It is also a way for learners/students to have control over their learning. If technology can be used effectively in education, learners/students' learning opportunities will increase notably. Advancements in technology have made the world seem smaller and increased the interaction between people from different cultures. As we can all see clearly that the Internet presents excellent opportunities for the user to create content, share it with others, and interact on a global scale (Richardson, 2010). The tools that allow for such interactions can be identified as Web 2.0 technologies.

Nowadays, lots of learners/students use Web 2.0 applications ─e.g. blogs, wikis, podcasts, social networks, and virtual worlds─ more commonly than ever into and outside of the classroom settings. *What is Web 2.0?* According to O'Reilly Radar Team, (2007) ,"Web 2.0 is a set of social, economic, and technology trends that collectively form the basis for the next generation of Internet – a more mature, distinct medium characterized by user participation, openness, and network effect" (p. 12). This means that Web 2.0 technology refers to the second generation of Web development and design concepts that are more organized than its predecessor Web 1.0 technology. Web 2.0 technologies facilitate users to shift from static to more dynamic web pages. Based on the

next generation Internet access through cellular and handheld devices, Web 2.0 tools enable users to develop a collaborative virtual society to share information interactively and interoperable. Web 2.0 applications are those that make the most of the intrinsic advantages of the Web 2.0 platform.

Web 2.0 applications have become popular and are gradually making their way into education. The implementation of emerging Web 2.0 applications can result in a positive impact on supporting learners/students' learning processes and outcomes (McLoughlin & Lee, 2008). Web 2.0 tools are beneficial in their way in supporting learners/students to become creators and not only recipients of knowledge. This creation of information has gone from a one person attempt to collaboration with people from many different cultures and from all parts of the world. Each Web2.0 tool has the flexibility that it can be used in different ways by different people. Instructors need to continually find innovative ways to use these technologies in education (Williams & Chinn, 2009). And learners/students of the 21st century need to understand the technological opportunities and advantages that can help them to solve unique and complex educational issues. Since this technology has become an everyday aspect of the digital generation, we question why it is not found more often within the classrooms in particular culturally diverse classrooms. Imagine a classroom where the teacher frequently uses technologies such the Internet as a platform for social interaction, a tool for discovering new information, and as a way for learners/students to gain multiple perspectives from people all over the world.

There are some factors that motivate us to come up with this topic. From researcher previous experience and perspective, studying abroad at an international

university, such as USA where Web 2.0 applications have been presented and used as part of the teaching and learning support, research found these applications are very useful to encourage active learning inside and outside the classrooms. An excellent example, in a course that focus on Educating Culturally Diverse students– the professor used to use YouTube – as a pedagogical resource for sharing some effective instructional videos from different coulters and countries. this is one illustrative example of Web 2.0 as a powerful educational and motivational tool– toward achieving learning objectives..

From the wider perspective, although Web2.0 technologies has been extensively used in many higher learning institutions especially in USA and has been proven to be valuable in supporting general teaching and learning, the use of these technologies is still in its infancy in culturally diverse classrooms. Therefore, we find it exciting to think of the possibilities for educators and educational institutions to use these readily available educational tools and resource that already has learners/students essentially motivated in their personal lives. In this paper, we will attempt to explore how Web 2.0 technologies present new opportunities for culturally diverse students. Initially, this paper suggests that the constructivist theory as theoretical framework for this paper must be taken into consideration.

Constructivism

The constructivist theory has existed since the 18th century in the works of Giambattista Vico (Cardellini, 2008). John Dewey applied constructivist theory to education when he began his experimental school in Chicago which ran between 1896 and 1904. John Dewey used a progressive curriculum based on student interest, practical learning, and a community in which democracy was vital key (Fallace, 2009). In the 1950's, Jean Piaget further developed constructivism through his theory that students build conceptual structures to store information (Powell & Kalina, 2009). In the 1990's, constructivism has been included once again in educational environments to promote student learning (Land & Hannafin, 2000). The learning focuses on students constructing knowledge based on their experiences and then actively constructing new knowledge and reflecting on the encounter (Loyens & Gijbels, 2008).

Constructivism is a learning theory that is centered on the learners. It can be defined in many different ways, however to put it simply, it is allowing students to construct and build upon their own knowledge by using their senses. The core of constructivism is that learners actively construct their own knowledge and meaning from their own personal experiences, beliefs, and curiosities (Fosnot, 1996). Constructivists believe that learning is more active and self-directed than either behaviorism or cognitive theory would postulate. Since the 1990s, constructivism has made a strong influence on education, particularly in the field of instructional technology (Woo & Reeves, 2007). Modern educational practices encourage and support teaching practices grounded in the principles of constructivism. In a constructivist learning situation, students/learners bring

unique previous experiences, beliefs, ideas and knowledge which is constructed uniquely and individually, in multiple ways, using a variety of tools, resources, and contexts.

The constructivist perspective helps and supports students/learners to learn through interaction with others. Jonassen, Davidson, Collins, Campbell, and Haag (1995) believe that a constructivist approach to knowledge construction and learning can be well supported in online environment settings through technologies. Web 2.0 technologies, for example, provide new opportunities for social interactions and collaboration among students, teachers, subject matter experts, professionals, as well as a host of others around the globe (Alexander, 2006). These technologies encourage and allow teachers, learners, and others to share experiences, ideas and collaborate in innovative ways.

Anderson (2007) stats that learners/students' familiarity with Web 2.0 technologies open up a new space for and style of learning. This new style of learning focuses on collaborative knowledge building, shared assets, problem solving, and the breakdown of distinctions between knowledge and communication tools such as blogs, videos, and interactive tutorials. The constructivism sight of collaborative learning points out that learning in Web 2.0 technology environments can be based on the experiences and interactions which take place in the phases of collaboration between learners (Schneckenberg, Ehlers & Adelsberger, 2011). Web 2.0 technologies might be prominent to enable teachers to create personalized, active and cooperative learning environments (McLoughlin & Lee, 2008).

Web2.0 ─as effective instructional tool─ helps culturally diverse learners/students to build the skills they need for the future—such as problem solving, critical thinking,

collaboration, and creativity—with partners in learning context. One of the benefits of using these types of instructional tools is increased collaboration between learners/students. Another benefit is that they can be used at any time, not just in the classrooms time. Therefore, constructivist designers prefer Web 2.0 application tools to open and support learners/students control, non-linear learning and that allow collaboration between them (Karagiorgi et al. 2005). Web 2.0 technologies enable students/learners to connect to and collaborate with others with diverse interactions (Selwyn, 2007). This paper also suggests that Web 2.0 technology─ as collaborative educational tool ─ have been presented to help students/learners in a diverse education and this must also be taken into consideration. This paper also suggests that understanding possibility using Web 2.0 applications to help culturally diverse students must be also taken into consideration.

Web 2.0 Technologies and Culturally Diverse Students

When we consider meeting diverse students and diverse learning needs, we should consider technology tools ─such as Web 2.0 tools─ to deliver and receive education (Moreno, 2010). This diversity includes different elements, such as "socio-economic, world-view, race, age, cultural, gender, sexual orientation, physical abilities, cognitive abilities, life experiences, and developmental stage" (Haring-Smith, 2012, p. 8). Whether learners/students are taught in online environments or in traditional classrooms, there is no doubt that the skills, experiences, and knowledge students bring to the classroom are indeed reflections of their cultural background. Student populations are divers and this, "Diversity includes students from various cultures; with varied abilities,

disabilities, interests, experiential backgrounds, and even language use" (Basham, Meyer & Perry, 2010, p. 340).

The increasing use of technology such as the Internet in educational contexts around the world has prompted debate about the relationship between cultures and technologies (Holmes, 1998). Using Web 2.0 tools, for instance, in the culturally diverse classroom involves learners/students in activities that expand their problem solving skills as they are required not just to find information but also to judge its value and accuracy. Collis and Williams (1987) argued that culture is a vital factor in influencing how people accept, reply to, and use the Internet. Every culture has something to offer in terms of knowledge, ideas, values, perspectives. Web 2.0 technology ─ as one of the greatest technological advancements of the twenty-first century ─ is viewed as a group of educational technology tools that enable social learning through user creation of content and collaboration (Anderson, 2007). Web 2.0 technology tools offer online learning course facilitator an array of options for keeping attendance in online environment, providing instant feedback to students, and for communicating with other students during a course. Such activities can be delivered using Web 2.0 technology tools such as blogs, wikis, screen casts, avatars, and social networking sites (Tunks, 2012). We believe that the use of Web 2.0 technologies is the best way to bridge the cultural gap in educational context, and in collaborating with different cultures, as well as in exchanging ideas. For instance, Web 2.0 technologies offer new opportunities for learners/students to collaborate, read, learn, research and much more anything of interest, and understand cultural diversity. Importantly, these technologies help learners/students connect to the outside world which in returns aids in their understanding of cultural diversity.

Under the constructivist theory "students are assumed to learn better when they are motivated to learn things themselves rather when they are told the information" (Oluwafisayo, 2010, p. 19). Learners/students who participate in international collaborative online learning environment using Web 2.0 applications as educational tools will be height motivation in diverse classrooms, improve reading and writing skills, and enhance engagement. Adams & Carfagna (2006) argued that cross-cultural deliberation through Web 2.0 technologies helps to break down stereotypical notions regarding cultures other than one's own. Web 2.0 technology is particularly attractive for the support it can potentially provide for collaborative learning. This fundamental feature must be also taken into consideration.

Collaborative Learning

A central strategy for constructivism is to create a collaborative learning environment. *What is collaborative learning?* According to Reeves, Herrington and Oliver (2004), it is a place where "learners, enrolled in a common unit of study for training, continuing professional development, or the pursuit of an academic degree, will work together online to solve complex problems and complete authentic tasks" (p. 53). This place gives learners/students chance to develop, understand and compare several perspectives on an issue. They should be able to explain and justify their thinking and "openly negotiate their interpretations of and solutions to instructional tasks" (Cobb, 1994, p. 1051), leading towards the establishment of consensual meanings. The learning environment should make it possible for students to build their theories and articulate these theories to one another. Web 2.0 easily lend itself to constructivist principles by

providing students with opportunities to communicate with people all over the world, conduct research, discuss issues and work cooperatively.

Today many people use technologies such as the internet ─and its applications such web 2.0─ for multiple beneficiary reasons such as research, social networking, communication, online collaborative learning, and so forth. Through such technology, a learning community is created that is a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct meaning and confirm mutual understanding (Garrison, 2007). A Web 2.0 technology which is known as an umbrella term of recent internet applications such as wikis, blogs, social networking, and virtual societies enable culturally diverse students to contribute their personal views, ideas and reflections in order to collaboratively create and edit collective online contents. As Schneckenberg et al. (2011) argued that one of the common uses of Web 2.0 application as collaborative learning tool is to build online collaborative learning communities for diverse populations of learners.

In culturally diverse classrooms, collaboratively, students need to be able to learn from and work with individuals from diverse cultures, religions, ideologies, and lifestyles in an environment of openness and mutual respect. Schneckenberg et al. (2011) stat that there are two most important features that make Web 2.0 technologies appropriate for facilitating collaborative learning communities. One of these features is the relatively simple and intuitive use of Web 2.0 tools which enable students to simply contribute and experiment in online learning communities. Furthermore, Web 2.0 technologies advance online collaborative learning by expanding the role of users from being passive receivers of knowledge to active participants in the construction of knowledge (Brown & Adler,

2008). While these features of Web 2.0 tools give opportunities for more social communication, interaction and participation between students, Duffy and Bruns (2006) indicate that collaborative construction of knowledge in online learning environments can be supported by socially based technologies. Web 2.0 technologies as educational tools give also students adequate opportunity to critically reflect on others' opinions, and create, post, and share their ideas more critically. In the next section, this fundamental feature will be highlighted under the guidance of constructivist learning theory.

Web 2.0 Technologies and Critical thinking

One of the primary goals of using constructivist teaching is to develop higher order critical thinking skills (Anctil, Hass & Parkay, 2006). Critical thinking has been regarded as an important outcome of education (Yang, Newby, & Robert, 2005). *What is the critical thinking?* According to (Scriven & Paul 1996), "Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action". Undoubtedly, learners/students need a set of core knowledge, along with thinking skills that consist of critical thinking, problem solving, and decision making. Critical thinking is a skill that we can teach to our learners/students regardless their cultural backgrounds. Today's learners/students have more access to information than ever before with the help of Web 2.0 technologies. As instructors, we must remember that simply accessing information is not enough. Learners/students need to be able to analyze, synthesis, and evaluate information. Staib (2003) pointed out that critical

thinking is an accurate way of thinking in daily life of pursuing reliable and relevant world knowledge, as well as of deciding what to do or believe. Lancy (1990) informed that computers are effective in developing higher-order thinking skills, including defining problems, judging information, solving the problems, and drawing appropriate conclusions. Richardson (2010) found that Blogs, Wikis, and other Web 2.0 technology tools have great potentiality in terms of its use in educational context. And, he highlighted those technology tools can promote and encourage critical thinking and can promote, creative and intuitive thinking.

Introducing Web 2.0 applications to higher education environment is to design learning processes that encourage students to active participation addition, Safran, Helic, & Gutl (2007) emphasized that Web 2.0 tools make it possible to support critical and analytical thinking through ease access to rich information and interacting and create in depth learning through interaction joint creation using critical thinking and collaboration. Learning with social media presents an excellent opportunity for both individual reflection and interest by the use of personal blogs and for collaborative learning through shared ideas and knowledge construction in a Wiki as new Web 2.0 technology tools. It is not only social media can support a more reflective approach to learning, but also offer the opportunity to make teaching more practical and application oriented. In addition, among different Web 2.0 technologies and websites, blogs present unique pedagogical affordances. And they give students enough opportunity to critically reflect on other students' opinions, and create, post, and share their ideas more critically (Gooding & Morris, 2008). Wang and Woo (2010) discussed that blogs have been shown to facilitate teaching and learning critical thinking skills in classrooms. Blogs allow students to

provide a large number of audiences with excellent information, and they also encourage students to think deeply. Schank, Berman and Macpherson (1999) found that constructive learning encourage collaborative learning, promote the development of critical thinking skills and problem solving skills as well as creativity.

Discussion and Conclusion

Learning is not a simple task, and understanding how learners/students learn is a big challenge for educators because it is something that is difficult to view, and students have their own unique cultural background, language, and style of learning. Learning is a social activity associated with the human connection with other human beings, teachers, and peers. In addition, the future is changing so significantly and quickly that it poses a nightmare for instructional decision makers, planners and strategists. We are educating learners for the unknown, so the best thing we can do is to provide them with the essential conceptual, cognitive, attitudinal, and social materials to continue learning, anywhere, anytime. With experiencing rapid growth in the number of students of color, culturally and linguistically diverse students in many school districts in the US, we need looking for new ways and strategies that can be useful to solve any educational issue especially these issues which related to culturally and linguistically diverse students. Therefore, some new methods have come into sight, such as Web2.0 tools, which are increasingly being used to present opportunities for learning and teaching environments.

With the introduction of Web 2.0 technologies, the classrooms in today society are creating a constructivist learning environment. As Enonbun (2010) claimed that Web 2.0 technologies increase learners /students environment such as the classroom knowledge which is available anytime anywhere. Therefore, they can interact and

communicate with peers in the same age as them from different countries and cultural background and this collaboration motivates their learning (Enonbun, 2010).

Web 2.0 consists of applications and web tools that facilitate users' interaction, creativity, information sharing, and human collaboration. These applications enable "the creation of friendly, social and interactive environments for the retrieving and sharing of information" (Sadeh, 2007, p. 307). Web 2.0 tools facilitate communication between learners/students and their instructors or peers, and provide information about resources and links related to course materials. Moreover, they allow learners/students to follow announcements about classes and courses, departments or schools, delivery of homework and assignments by lecturers. Introducing Web 2.0 tools to education environment is to design learning processes that support students to active participation addition and these applications make it possible to support collaborative learning and critical thinking.

As it mentioned earlier, constructivism is mainly a theory which based on observation and scientific study; it is about how students can learn and says that students construct their own knowledge and understanding of the world, throughout experiencing aspects and it can be reflected on those experiences. In the classroom, students can be able to gain more knowledge by encouraging them to use students' activity which can contribute to gain understanding. Importantly, constructivism offers a new paradigm for this new age of information brought about by the technologies of the last few decades. Most recently, with the advent of the Web 2.0 tools, it is now not only possible for diverse learners/students to access tons of information almost instantly, but it is also possible for them to be in control of the direction of their own learning.

Learners/students─ regardless their cultural backgrounds─ can take part in collaborative learning by sharing information, exchanging ideas, and working together based on interests, and needs. Examples of student collaboration include taking part in activities such as joining academic groups related to their schools, departments or classes and carrying on group works by sharing homework, projects, and ideas. Web 2.0 tools support learning from a constructivist's perspective through collaboration. They offer many different and effective ways for culturally diverse classroom students to learn collaboratively through interaction with others. For example, Web 2.0 tools help facilitates an environment to discuss context by allowing student/learner to share her/his experiences with others. And they also can provide the answer to meeting the needs of today's diverse students/learners by enhancing their learning experience through personalization and rich opportunities for networking and collaboration. A study was conducted by Anson and Miller-Cochran (2009) found that students were hesitant to take the lead in the class and that the facilitator needed to either choose to guide the process or find a way to ensure the students that the tools created are there for everyone to edit. Use of web 2.0 tools can supply to constructivist environment not only the participation but also the collaboration and interactivity. For collaborative Web 2.0 tools to become a seamless way to share information, the students must be convinced the tools are used to enhance collaboration for building knowledge or facilitating learning that can take place over space and time and not as something that challenges the authority of the instructor (Anson & Miller-Cochran, 2009).

Ultimately, international students with different cultural background, would like to emphasize that teachers and students who take full advantage of Web 2.0 emerging

tools will participate in more, collaborative, cooperative dynamic, immediate, and communicative environments that provide opportunities for meaningful experiences through social constructivist learning. Therefore, researcher would strongly recommend most of Web 2.0 tools to be integrated into culturally diverse classrooms due to their effectiveness in teaching and learning.

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