The Impact of Multimedia on Social Learning

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Abstract: Considering the ever-changing world around us, people in or out of the educational area show numerous interests in pursuing the possibility of incorporating technologies in learning procedures, to meet the new requirements for individual developments and social goods at large. This article, after dissecting the pedagogical theory of social learning in practical contexts, claims that multimedia has the potential to positively promote people¡¦s social learning process.

Keywords: multimedia, social learning, technology-supported learning

1. Introduction

In this day and age, multimedia almost permeates into every corner of people's daily life. In the education field, there also exists numerous technology disciples who speak highly of the combination of learning and educational multimedia, but such optimistic expectation goes with little progress. In this article, it will first illustrate the need of multimedia in Education and explain the reason behind the slow development. After that, it will describe a practical use of multimedia in social learning, both the pedagogical and pragmatic aspects.

2. What is Multimedia?

Multimedia, as a word is the combination of "multi-" and "media". "Multi-" means many and "media" indicates the sense of agency, channel or instrument in the Merriam-Webster Dictionary. As to an engineer, it "is the combination of different elements (whether medium, modality, technology, algorithm, or application) that provides a fuller experience of the effect of that combination" (Chen, 2004), while multimedia in the education is often regarded as the synonym of Information and Communication Technology (ICT), together serving as the umbrella terms for numerous digital technologies (Eurelings, 1998). People's use of multimedia in education has been for years. For example, it is not uncommon to see the videos, audios or still pictures play their roles in the classroom. However, such utilization is just "repackaging" the content in a contemporary way, or we can put it here, in a electronic way. What we need, actually is to "reengineering" the learning process (Collis, 1997). Accompanying the change of the medium transferring information, people's methods of obtaining information should also undergo a reform.

3. Why Multimedia?

The current education system needs change, people should not stand still until one day it cannot continue as normal. This call comes from the novel affordances of the technology, the inborn genes of contemporary students as well as the challenges of the society as a whole.

3.1 From the Society

In recent years, the twin force of economic development and digital technology innovation have ensured a worldwide platform of competition, just as shown by Thomas Friedman in his outstanding bestseller book The World Is Flat (Friedman, 2007). People began to worry that the existing education system that inherited from the nineteenth century might not scale up to its destiny of fostering individual innate capabilities and ensuring people's progress in the real world (Robinson & Aronica, 2009). Meanwhile experts' favor of multimedia-mediated education research has provided some constructive perspectives as how to upgrade people's learning experience (Cheng, et al., 2010). Concepts like Multimedia in Problem-based learning, Multimedia in distance learning, Multimedia in social learning et al. were heard more frequently. Political efforts, from the forums sponsored by OECD and UNESCO, to conferences run by some developing countries, and academic endeavors , such as Berkeley, MIT sharing their open courses online (Bonk, 2009),both hope to exploit multimedia and ICT solutions to put forward an effective nationwide or even worldwide educational reform (Iiyoshi & Kumar, 2008).

3.2 From the Students

Students nowadays are often tagged as millennials, digital generations, technology consumers or more frequently, as digital natives. No matter what the adults name them, the sharing attribute they embody is the capability to search information independently with the help of digital media and the Internet, which means the simply way of teaching as information transmission, employed wildly in the existing formal education system, will no longer cater to the current students' needs, for most of the basic information is just exposed to them outside the classroom. With the spread of open source trend, represented by wiki and linux, actually, students will be more accessible to the information they need.

On the other hand, multimedia and ICT tools have actually become an indispensable part of the digital natives' routine life. Every day they communicate with instant messages, share updated status with Facebook and twitter, read on the blog, and watch on the YouTube. It will dramatically impede the learning efficiency, increasing cognitive load, if schools determine to build a completely different learning environment compared to their living environment. What is worse is that the knowledge students absorbed in the school cannot apply in their future digital-supported career life. Due to the above mentioned reasons, it is high time for schools to "connect with children's out-of-school experiences" (Buckingham, 2005).

3.3 From the Technology

It is not only the educators are technology enthusiasts, but also people from all walks of life are obsessed with technologies. As a matter of fact, technology has indeed transformed the ecosystems of many industries, from the newspaper publishers to retail businesses and to other sectors where contents can be digitalized in an appropriate way (McHaney, 2011). But, before we ask what the technology can offer to the education field, it will be more rational if we can identify what the learners really need (Laurillard, 2008a).

From Skinner's behaviorism in the 1950s, to Piaget's Cognitivism in 1970s (Smaldino et al., 2012), until the contemporary learning theories concerning the Constructivism. High-level meaningful learning are repeatedly related with adjectives like active, collaborative, cumulative, reflective and so forth. Fortunately, the integration of multimedia in education brings with it such characteristics. Mayer (2005) believed that people would conduct deep learning under circumstances with words and pictures. Eurelings (1998) continued that multimedia in education would shape an authentic learning environment featuring the improvement of students' activities. Ivers and Barron (1998) also suggested that multimedia projects would diverse students' way of constructing their own knowledge and solving problems.

It seems that integrating multimedia and ICT promises numerous sweet and romantic stories. Concerning the pressure from these aspects, such a marry is not just a need, but almost seems like a must. The education reformers and technology enthusiasts are so eager to construct an image of multimedia utopian where a best possible learning environment will ensue:

- Learners to become increasingly active;
- Teachers to become increasingly collegial;
- Materials to become increasingly authentic. (Lieshout, Egyedi, & Bijker, 2001)

But, why compared to incorporating technology in workplaces, the progress in the education field seems relative slow? Laurillard (2008b) combined the explanations given by Laurillard (2006), DfES (2005), Readings (1996) and Elton (1999), concluding that the educational system per se and the traits of ICT serve as the main culprits. The ICT change is too radical to follow; the complex education system run by a hierarchical command, similar to a national enterprise and the leaders are generally not welcome this trend of change, which might ensue crisis. Similarly, Buckingham (2005) pointed out that the major causes for gap between rhetoric and reality was first the irrational allocates of investments, then the limitation of profit model of the current learning technologies and also the continuous changing nature of the technology. To sum up, maybe, to some cases, people's eager to incorporate multimedia in education needs more detailed and realistic objectives (Goodyear, 1997). In the following passages I would like to share the concrete practice of embedding multimedia and ICT in social learning.

4. The Impact of Multimedia on Social Learning

The idea of social learning is not a contemporary new one, having been a crucial part of early developments of science of psychology (Salomon & Perkins, 1998). Currently, with the growing favor of Vygotsky's sociocultural theory and Piaget's socio-cognitive conflict theory, as well as Lave and Wenger's situated learning theory, the concept of social learning has steadily been in the spotlight, which, of course, cannot ignore the aid of political slogans like 'learning society', 'knowledge society', etc.

Generally, social learning consider our understanding as something constructed through 'conversations' and 'interaction' with 'others', focusing on how we are learning instead of what we are learning (Brown & Adler, 2008). Here 'others' should include not only the people but also the surrounding learning environments.

4.1 "Interaction"

Vygotsky laid considerable emphasis on social interaction, regarding it as a key component in social learning (Tu, 1999). Whilst Piaget stressed that in such social interaction, "disequilibrium forces the subject to go beyond his current state and strike out in new directions" (Piaget, 1985). In this sense, Piaget emphasized that people could learn more from peers, as among age peers there was mutual control over the interaction (Palincsar, 1998). Vygotsky was critical of Piaget's theory, he proposed that there were two development levels: the actual and the potential levels of development where he introduced the construct of the Zone of Proximal Development (ZPD) (Vygotsky, 1978). "The actual development level is determined by independent problem solving and the ZPD is determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 85).

The conflict between Vygotsky and Piaget is typically considered as stemming from the view of learning from different aspects, and neither of them neglects the value of the other (Laurillard, 2009). In this respect, multimedia provides new possibilities of peer-learning, for it creates the possibility that the age peer learning and the novice-expert or apprentice- scholarship learning style can co-exist in a harmonious way.

4.2 "Conversation"

Dewey (1916) insisted that communication served as the central role in education. Laurillard (2002) argued that dialogue was fundamental to education. Mayes and Fowler (1999) considered reflective thinking as a kind of dialogue with oneself. Such argument, to some extent, led the clout of conversation to a new level, for reflection triggered transformative learning and was generally analogous to high-order mental processes (Mezirow, 1990). Meanwhile, Sharples (2005) pointed out that "learning is a continual conversation: with the external world and its artifacts, with oneself, and also with other learners and teachers" (p.3). Laurillard (2002) combined the idea of Conversation Theory with learning technology, resulting in her well-known Conversational Framework.

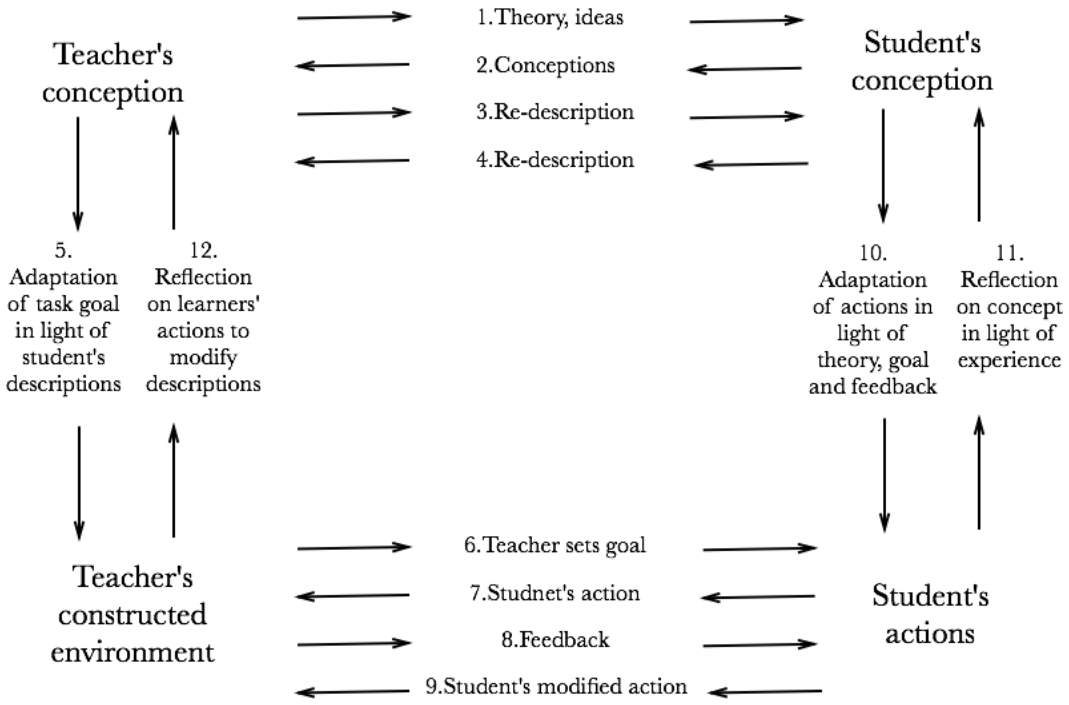

Figure 1. A Conversational Framework from Laurillard (2002) p.87

That is, also, where multimedia works. The Conversational Framework shows the relationship between the learner and the partner; actually the partner can be a teacher, an expert, a peer or even a computer, a learning system. With the emergence of more and more social networks, instant messaging tools, people, especially the digital natives are used to communicate more in the virtual world than in the real world. The distribution of virtual communities of practice in which people work together voluntarily to update and maintain the open source software exemplifies such trend (Brown & Adler, 2008).

Besides dealing with above mentioned pedagogical issues, the multimedia and ICT, can also offer some practical remedies for the anemia of our current education system, owning to the characteristics like accessibility and flexibility.

To the developed world, the flexibility is conducive to the ambitious goal of personalized education. The academic (deep) learners can choose to grasp knowledge in a more deep way, searching some related materials and resources from the Internet. Thanks to the OER movement and the spirit of sharing engaging in the web 2.0 era, whatever learners want to pursue is just at their disposal. On the other hand, the surface learners will be more likely to continue their exploring of certain concepts grounding on the most ideal learning experience of the one-to-one guide and tutor (Laurillard, 2008c) which is the feature embraced by learning technologies.

Such personalized feature embodied in the technology can be persuasively demonstrated by the Long Tail phenomenon. First introduced by Chris Anderson in his New York Times bestseller book The Long

Tail, the long tail theory was initially implemented in the e-commerce industry, where Anderson found that contrary to the traditional nature of the market, the Internet-based companies- Netflix, Amazon, Rhapsody and the like- made most of their money from the niche products, products that were not on the top-seller lists (Anderson, 2008).

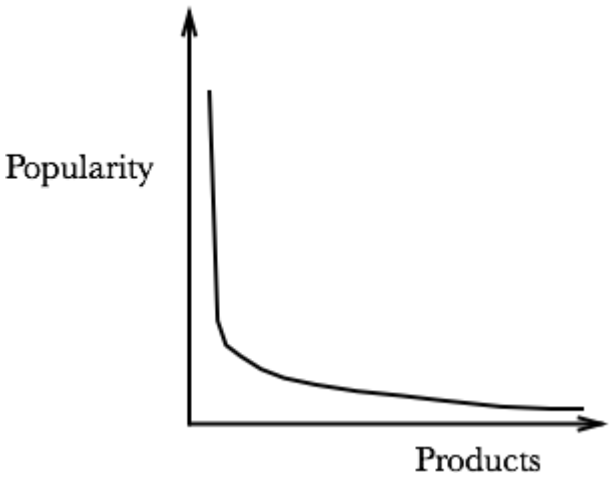

Figure 2. The Long Tail: adapted from Anderson (2008)

When it comes to the educational field, it means that apart from the mainstream theories people can obtain from the school education, they can explore their individual interests through the Internet (Brown & Adler, 2008).

To the developing world, the multimedia and ICT can also find their places. As the most intense problem in the underdeveloped regions is the disproportionately distributing education resources, the accessibility trait of multimedia would assure the learners in the remote or poverty-striking areas be in a position to approach high level learning resources and experience through the active interaction and communication with other learners from different cultures, customs and even continents which might simultaneously contribute to the equal development of the whole area and foster mutual understanding to some degree.

Of course, the flexibility and accessibility will also play their roles in attracting disabled and disaffected learners to the learning system who require specialist attention and understanding (Laurillard, 2008a). Meanwhile the aspiring politic slogans like ‘No Child Left Behind’ and ‘Every Child Matters’ and social ideas like ‘life-long learning’ and ‘knowledge economy’ might be realized to some extent, not only on the blueprint of the governments.

5. Conclusion

The recent development of society calls for the adaption of the learning system. Learning, nowadays, is no longer a specific-period activity. People should update their knowledge for their companies, schools and community they live. Fortunately, with the help of emerging technologies like multimedia and ICT, such catastrophic change might occur. But the infusion of technology into a certain sector has never been a short-term task. We should scheme it in a long-term way, putting all the related factors in. When educators turn to educational multimedia, they should guarantee it is not out of their favor of novelty, but from the real needs of learning. In this article, it shares one example of integrating multimedia in social learning. Undoubtedly, multimedia can also have its impacts on other learning concepts, but no matter what kind of learning is, its corporation with multimedia should be based on the sound pedagogical reasons (Jones, 2007).

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