Chapter 11
Pros and Cons of Digital Textbooks Technology

ABSTRACT

Students do not necessarily enjoy using textbooks. One of the main reasons is that multimodal texts are harder to process by brain patterns. Digital textbooks technology aims to reduce this pitfall, offering multimedia feedback and interactivity as the main features of the powerful learning environment. There are two ways: a) using and developing the digital textbook as a pedagogical resource and b) using and developing digital textbook as a learning tool. The first way offers speed of finding, purchasing, downloading, as well as digital reading. The second way adds the power of assembling digital content through representation in a person’s own manner as well as group development of content. Educational outcomes in a digital textbook learning environment are better than in scholastic models. This chapter presents pros and cons of the digital textbook technology in concept of postmodernism philosophy. The role of the digital textbook technology for learning is proved.

INTRODUCTION

Mobile information technology is changing the education landscape by offering learners the opportunity to engage in asynchronous, ubiquitous instruction (Hyman, Moser & Segala, 2014, p.1). While education requires learner-centered learning environment, humans brains have the ability to recognize patterns and metappatners and, then, transform them into concrete, actionable steps for actions or activities. Previous research was shown (Basulto, 2013) that learning results from massive, hierarchical and recursive processes. Reading is recognizing the patterns of individual letters, then the patterns of individual words, then groups of words together, then paragraphs, then entire chapters and books.

The multimodal texts are harder to be processed by brain patters. The cause is that multimodal texts involve new forms of labour and types of patterns (Kabuto, 2014; Simon, Acosta, & Houtman, 2014; Malinowski, 2014). The digital textbook content, as a metappatterns, is used and developed as a pedagogical resource and/or as a learning tool. Its functionality is a guaranteed hardware, software and educational technologies. The sustainability of technologies is in usability, networking and interoperability (Cheng, Chou, Wang & Lin,
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Global challenges to formal and non-formal education evidence the person-centric complexity, in which human adaptability is the result of the human strengths including intellect, emotions and energetics. In addition to these, there are really the environments’ requirements about daily decisions regarding the use of the digital technologies as tools for synchronous and asynchronous communication. Digital technologies break time and place constraints give students new degrees of freedom to interact any time and place. The sense of real-virtual networking with online or/and offline activities and synchronous or/and asynchronous communications is new to the learning designer. What is, however, missing, is that there today exist no reasonable psychological and pedagogical considerations in digital textbooks’ use and development that would make a change in educational technology.

However, existing eTextbook market hinges strongly with “prescribed textbooks”, which may be in one university course only recommended reading, but in another not be used at all. As was noted by Hallam (2012) the eTextbook paradigm represents a microcosm of the changes that are likely to occur, where digital pedagogies have been encouraged by a technology-enabled personalised learning environment where self-directed and inquiry-based learning can flourish. Therefore, initially the role and potential of players in use and development of digital textbooks should be investigating. Then, not less important is to understand the methodological and technological phases for digital textbook use and development. New postmodernist learner-centric solutions focused on new learning ideal, either as sources or as learning tools are needed to better fulfilling this need.

This chapter is dedicated to technology, described in concept of the new learning ideal and postmodernism philosophy. In such approach the integrity of hardware, software and educational technologies is identified with learning design as requirements for the personal development of multiliteracies in multi-cultural setting of real-

2014; Wiklund-Hornqvist, Jonsson & Nyberg, 2014; Reid, 2014 etc.). Moreover, digital textbooks are available more than ever. In addition, they influence the academic achievement (Lang et al., 2014; Moser & Segala (2014) etc.). Studies in digital textbooks area are focused on solving digital learning issues (Song, Kim, Byun, Song, & Lee, 2014; Kim & Park, 2014; Hyman, Moser & Segala; 2014; Marshall, Kinuthia & Richards, 2013 etc.).

Why is it important to research the integrity of hardware, software and educational technologies in using and development of digital textbooks? In order to solve this problem we state: Only a small part of the scientific and social knowledge is “transformed” into didactic material. The other part involuntary comes from real environment and processed unconsciously. People learn better when investigate, than read the printed text. Knowledge is a result of investigated phenomena, objects and processes, which serve as “learning objects”. During life, pupils use different tools of investigation (according to theirs intellect, emotions and energetics. However, these tools are more and more sophisticated.

New digital textbook technologies impact learning because Digital Age is for Knowledge Society. Learning requires learning platforms and digital devices in order to understand how to read real-virtual signs and how to de-codify the speech and visual information from hypertext and multimodal text. In real life people solve parallel, non-linear and integrated cognitive activities, using digital to investigate world and to assemble “meaning” for non-standard solutions, visions, culture, and strategies. Pedagogics aims to develop new methods as tools for personal development in sustainable, secured and durable habitat. However, the primarily product tool and resource is humans’ capital. This means that quality of life depends mainly on the capacity to learn and to communicate verbally and non-vernally in real-virtual learning environments. During all life we are teacher or/and students.