Chapter 32
Web 3.0 Technologies and Transformation of Pedagogical Activities

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ABSTRACT

Web 3.0 creates the potential for implementation of new teaching strategies and new forms of teachers' professional pedagogical activities. Today, it is possible to assume the trends of Web 3.0 development. Most of these trends have been already revealed in the analysis of the current state of modern network technologies. New educational practices require both awareness of new opportunities in networking and acceptance and understanding of new educational strategies of learners. The chapter describes a concept of teachers' professional goals transformation in terms of Web 3.0, stressing movement towards learners' needs. The first pedagogical objective is to design the information educational environment. The second objective is to perceive a student via the informational environment. The third objective is to interact with other members of the informational environment. The fourth objective is to arrange the learning process. The fifth objective is to ensure professional self-development.

INTRODUCTION

During the last decade the issues of the web technologies have been actively discussed. The main reasons for the development of the web technologies - from Web 1.0 to Web 2.0 have been considered and identified. Today, however, there are witnessed some changes that allow to draw conclusions about the development of *Web 3.0.*

The basis of the Web 3.0 concept aims to implement possibilities of machining the information available on World Wide Web in various forms: *Semantic Web*, 3D and mobile content, data hubs. This idea is at the crossroads of studies on artificial

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intelligence and Internet technologies. It raises new problems of knowledge spaces organization in the Internet, methods and tools for knowledge extraction from natural language texts, as well as the use of knowledge to create spaces of applied intelligent systems operating in the Internet.

Internet users in the contemporary environment of Web 2.0 are active not only in the information retrieval, but they are also included in the social communities and collaborative networking activities. We can assume that *Web 3.0* technologies will provide an opportunity for a user to modify and configure different electronic recourses, to increase own network environment, to personalize, to collaborate, to manage knowledge resources, to perform the new role of an expert in network societies. That means that a user will become an "expert" of his/her own information activities and needs.

The chapter aims to focus on the question: how pedagogical activities will be transformed in the context of Web 3.0? It is obvious that the main groups of professional teacher's objectives will change in terms of Web 3.0 technologies, so it is necessary to outline the main trends in this way. Besides, the position of a learner in the high-tech knowledge society will change drastically: a learner needs to be prepared to act as an active personality, to be able to choose an individual educational route, to adopt the strategy of *lifelong learning*. The chapter is based on different areas of contemporary surveys in the field of Web.3, with the special focus on the ideas of Russian researchers.

RESEARCH BACKGROUND. WEB 3.0: THE NEW FORM OF REPRESENTATION, COMPREHENSION, AND USE OF INFORMATION. DISCUSSIONS ON THE TOPIC

Researchers have not come to a consensus about the concept of Web 3.0 yet. For some researchers it is more important to understand the processes unfolding in the Internet space from the position of developing information technology: the use of knowledge to create applied intelligent systems, adaptive content systems, and virtual reality systems operating in the Internet. For other researchers it is the behavior of Internet users that attracts attention: for example, the processes related to the accounting request and customer behavior.

Thus, A. Dolgin, the creator of the customized recommendations website imhonet.ru, believes that the social aspects of *Web 3.0* should come to the foreground. In his opinion the main difference between Web 3.0 and Web 2.0 is that users do not only generate content themselves, but they also certify it: note what needs attention of reference groups and communities they are involved (Dolgin, 2008). This idea is valuable precisely for its focus on protecting the interests of consumers, but it is contrary to the more common description of the term "Web 3.0" given by J. Calacanis (American Internet entrepreneur and blogger): Web 3.0 is a combination of high-quality content and services that are created by talented professionals on the technology platform Web 2.0. Web 3.0 is the Internet concept which involves the synthesis of the strengths of Web 1.0 and Web 2.0: Internet projects uniting professionals, but built on a network, polycentric principle (Calacanis, 2007).

Contradiction between these two approaches to Web 3.0 (Web 3.0 as a self-organizing system of consumers' recommendations and Web 3.0 as a system of content and services generation produced by a network of professionals) may be withdrawn within the concept of knowledge management (Andreeva, 2013). Web 3.0 should be understood as a new profession for people and new tools for people. This new profession - knowledge manager - should become a link between Web 1.0 (content) and Web 2.0 (communities and communication services). Thus, Web 3.0 can be understood as a hierarchical version of Web 2.0, based on the principles of self-organization, but with a class of professional experts. For example, this means the formation of consumer community