Chapter 13
Flipping the Paradigm of Education:
Developing a Comprehensive Educational Program Integrating Virtual Immersive Learning Environments

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ABSTRACT

The purpose of this chapter is to define a prototype for a comprehensive educational program that integrates virtual immersive learning environments into traditional educational settings to develop innovative educational programs. The Future of Learning (FoL) protocol combines an integrative curriculum guide providing educators with thematic modular units of study that are designed based on problem-based learning principles and a FoL learning management system where online learning environments are structured to be integrated into p-12 educational settings and provide a login protected interface for educators and learners to access all the aspects of the FoL protocol including 1) a home page for the educational program linking all aspects of the protocol, 2) a learner home page, 3) a learning analytic system and 4) access to a 3d simulation world. The comprehensive and modular design of the Future of Learning protocol means that it can be integrated in a multitude of p-12 educational programs and define the future of learning.

INTRODUCTION

The Future of Learning protocol's goal is to develop a comprehensive educational program that will focus on the development of advanced problem-solving abilities of learners through Units of Study that are designed around future trends. The purpose of this chapter is to define a prototype for a comprehensive educational program that integrates virtual immersive learning environments into traditional educational settings to develop innovative educational programs. The Future of Learning (FoL) protocol combines an integrative curriculum guide providing educators

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with thematic modular units of study that are designed based on problem-based learning principles and a FoL learning management system where online learning environments are structured to be integrated into p-12 educational settings and provide a login protected interface for educators and learners to access all the aspects of the FoL protocol including

1. A home page for the educational program linking all aspects of the protocol,
2. A learner home page,
3. A learning analytic system, and
4. Access to a 3d simulation world.

The comprehensive and modular design of the Future of Learning protocol means that it can be integrated in a multitude of p-12 educational programs and define the future of learning.

BACKGROUND

The nature of learning has changed as the internet has radically increased the amount and type of knowledge needed to be successful in a knowledge economy. Around 40% of the world population has an internet connection today. In 1995, it was less than 1%. In 2014 there were 2,980,719,590 Internet users in the world. The first billion was reached in 2005. The second billion in 2010. The third billion will be reached by the end of 2014. This has led to a rapid increase in the knowledge doubling curve. Buckminster Fuller identified the Knowledge Doubling Curve when he noticed that until 1900 human knowledge doubled approximately every century. By the end of World War II knowledge was doubling every 25 years. Today, on average human knowledge is doubling every 13 months. The current theory is that as a result of the "internet of things", the internet added to varied devices, will lead to the doubling of knowledge every 12 hours (internetworldstatscom).

However, in current p-12 programs standardized testing is the definition of learning. All knowledge learned is produced in the form of a test. As a result, the processes of teaching and learning, knowledge development has become preparing a learner to reproduce small isolated bits of information. This type of learning, memorizing these factoids for a test, is the antithesis of developing knowledge workers that can respond to the data deluge of an exponentially complex information base. As online technologies provide more open access to an increasing and changing base of information the knowledge workers of the future must be able to use information to solve problems, addresses issues, and create responses to authentic issues. The ability to do this is by learning how to infer, hypothesize, synthesize, relate, generalize, value, and evaluate information in a purposeful manner, not memorization for testing recall on a standardized test. The knowledge economy of the future is based on how effectively knowledge workers can use information productively in this expanding knowledge-based global economy. In order to do this knowledge workers must be productive and efficient learners. Learning is the commodity of the future that will separate out successful or less successful organizations and nations in the global technology-based knowledge economy.

The Future of Learning protocol is designed to develop these abilities in a program that can be integrated into traditional educational programs as a result of a comprehensive design procedure. The FOL educational program is modular and functional for integration in multiple learning environments because of the nature of the design template. By shifting the educational experience from passive to active learning, from a focus on teaching to a focus on learning, from the standardization of instruction and assessment to the individualization of the development of learning processes, and from breaking knowledge down to building functional knowledge to solve problems, the Future of Learning educational program is