An Integrated View of Communicational, Educational and Technological Categories Applied to the Content Production for IDTV and Mobile Devices

Elizabeth Sucupira Furtado, Universidade de Fortaleza (UNIFOR), Fortaleza, Brazil
Rafaela Ponte Lisboa Cardoso, Universidade de Fortaleza (UNIFOR), Fortaleza, Brazil
Hermínio Borges Neto, Universidade Federal do Ceará (UFC), Fortaleza, Brazil

ABSTRACT

The improvement of the Brazilian system of interactive Digital Television (iDTV) has amplified usage perspectives for television in the educational realm, due to new possibilities of interaction. Thus, there is a growing discussion over the development of educational content that will address the needs of this new reality. The present article describes concepts of the technological, communicational and educational categories in an integrated proposal for the definition of educational content for iDTV. An interdisciplinary team applies steps and resources of integration, having T-ViLO (Video interactive Learning Objects for Television) as a representation of the content developed. Results showed that the integration proposal led the professionals both to realize the integration among the elements in the T-ViLO production and to analyze this integration in the produced T-ViLO.

Keywords: Communicational Elements, Educational Production Content, Interactive Digital Television, iDTV, T-ViLO

INTRODUCTION

Distance Learning (DL) has gained ground around the world due to the development of several means of transportation and communication (Lisboa; Gussi, & Borges Neto, 2009). With the appearance of the Brazilian Interactive Digital Television Standard (called SBTVDi), in 2007, iDTV has become a viable means for DL in the Brazilian scenario. It stands out that the

DOI: 10.4018/ijicte.2014100104
Presidential Decree No. 4901 established the following goal for SBTVDi: “II – To encourage the creation of a universal network for distance education [...]” (Cruz, 2008). There are still other reasons to educate through TV: the use of TV as a tool to promote education in Brazil began in 1960, with Educational Television stations in several Brazilian states offering high-quality DL programs (T-learning); TV has reached nearly all Brazilian households (N=96%), and the market offers its own system of free-to-air TV. The SBTVDi has a middleware called Ginga (Ginga, 2010) able to interpret alternative programming languages to implement interactive application (called iDTV application) (Moura, 2003).

The iDTV in Brazil is being gradually implemented thanks to a series of governmental investments, which finance projects managed by companies and/or universities. Among those is the project that originated this research, which focuses on teaching Mathematics via iDTV. Although this context is auspicious, in order for DL on iDTV to become a reality, the ecosystem of SBTVDi educational content production must be developed and certain issues must be resolved. This ecosystem includes defining the content (what do its topics include, to whom it applies), describing its specifications (what is the content script and its details for production), producing it (what are its technical solutions), integrating such produced content with iDTV applications, and making them available via SBDTVi. In this ecosystem, a multidisciplinary team of professionals is necessary (teachers, content producers, designers, system developers, TV engineers) to work with an entire value chain (from designing a course, to the reception thereof by users – the learners). In this diversified context, they need to build an interactive product considering the important elements of each area that they work.

In the related work section, we showed that there are efforts to provide DL by thinking about technological elements (such as the usability features of the contents, etc.). There are studies in the area of Human Computer Interaction (HCI) that go beyond the technological perspective, by analyzing the user experiences with technological solutions. This area has been gaining significant ground considering also that the focus of the concepts is on the application of communicational elements for the design of interactive systems for human use (De Souza, 2005). During the interaction between a user and a system, a communication process is established.

In the specification of educational content, we considered essential for professionals to have an understanding of a series of elements on user experiences and on communication with Learning Object (LO) via an interactive system. In many communication processes, the message (what is said about a LO) may not be received exactly the way the sender (the learner) intended. It is, therefore, important to check that the objects of communication are clearly defined and the message understood. The application of communicational elements in the definition of an audio content may help to avoid the barriers to effective communication. However it becomes difficult for the professionals to apply various strategies because they have different knowledge and use specific concepts.

The goal of this paper is to present integrated concepts and resources related to the educational, communicational and technological categories useful to a process of production of contents for T-learning; such process is driven by an educational methodology. We analyzed the acceptance and difficulties of the professionals who made the definition, specification and validation of a specific content using the resources proposed here. Difficulties were communicated and improvements were identified and implemented so far.

In this paper the resources proposed here will be shown in the fourth section after the description the research questions. In the fifth section, one T-ViLO is developed and the resources proposed to integrate these categories are described. Finally, we evaluate the results obtained with the development of this content, before the conclusion section.
Distance-Learning for Advanced Military Education: Using Wargame Simulation Course as an Example
www.igi-global.com/chapter/distance-learning-advanced-military-education/40524?camid=4v1a