

Chapter 65

Interactive Media Steer in Educational Printing Materials

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ABSTRACT

The development of digital technology has been highly accelerated since the 2000s. New media environments, which increase interactivity, have been provided to users. With technological convergence, all environments in the category of new media have had the opportunity to work together. With the support of digital technologies, traditional media have also started to include elements that will allow interaction. Support of digital technology does not allow us to see that traditional media is an interactive media but it permits interactive media guidance. Newspapers, books, and magazines, which are located in the category of traditional media, support readers by directing them to interactive media with augmented reality applications. Augmented reality applications in printed materials has been used in many fields. In particular, course books, which protects the existence as the basic learning material of distance learning, can support its content with augmented reality applications. The features of augmented reality applications that allow the presentation of additional information, such as visual, audio, animated text, are discussed in this chapter.

INTRODUCTION

Digital-based technologies which are integrated into every aspect of our lives, has provided a major contribution to educational activities. In our age when Individual differences should be taken into account, educational activities need to be developed in this direction as well. The presentation of learning environments that can give the opportunity to direct their learning in line with

the expectations and needs and to interact for the learners is increasing day by day.

The books, traditional learning material, are not lost importance despite the growing technology. With the popularization of mobile technologies increasingly, printed materials have the potential to guide the users for interactive media.

Augmented reality technology has also positioned as technological innovation which has provided access to different information and content,

to distance learners who use the printed material. In this context, we will see that augmented reality applications how it has brought into existence to the printed learning environment with the support of mobile technologies.

What is Augmented Reality?

Augmented Reality (AR) is a kind of interface, which combines digital objects and information with reality (Carmichael, Biddle and Mould, 2012). There is the size audio-visual of the virtual content are presented for actual circumstances. Virtual content has been composed with moving / still images, graphics, animation, text and sound which has positioned in real places. Augmented reality is not a virtual reality application. The user in virtual reality applications is located within a virtual world which has been composing with simulations entirely. Virtual reality is simulation of digital reality. However, augmented reality covers with digital objects which are placed in the real world. Therefore, augmented reality is not virtual reality. The position of augmented reality on virtuality and reality continuum is on the Figure 1.

According to Figure 1, augmented reality applications are positioned close to real environment on the virtual reality. A real environment describes the environment in which there are real

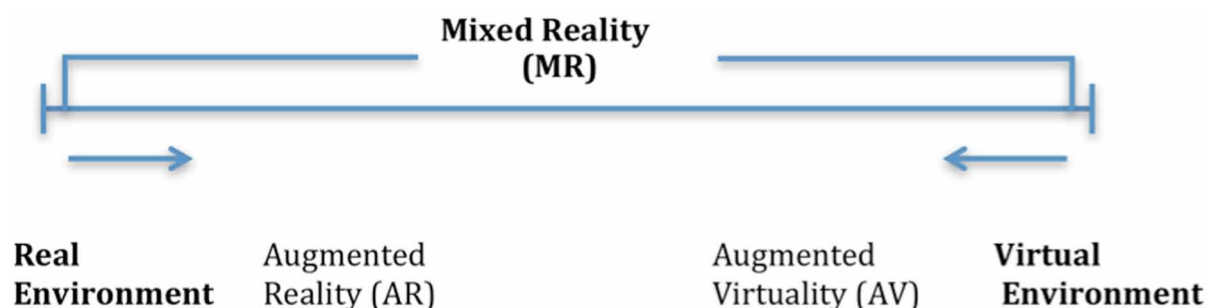
objects. Virtual objects, images and objects which have been positioned between real objects during augmented reality applications, are available. As the amount of virtual objects in the real environment is increasing, increased virtuality application takes place as long as person and objects which has been just created, has continued interaction in an environment without simulations. A virtual environment includes in a virtual reality application in which the description of the real world that is based on simulation completely has been experienced by the individual. The entire process between the real environment and the virtual environment is defined as the mixed reality.

An application should have 3 key features to be defined as the application of augmented reality (Azuma and others, 2001, 34):

- Real and virtual objects should be consolidated in real media
- Real and virtual objects should be interactive and they should be in real time
- The real and virtual objects should be linked to each other

Being used virtual objects which has been created in relation to the real environment in areas such as education, engineering, advertising, design, health, military, entertainment, has increasingly widespread day by day. 3 characteristics which

Figure 1. The position of augmented reality on “virtuality and reality continuum” (Adapted from Milgram, Takemura, Utsumi ve Kishino (1994) p.283)



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