

# Chapter 20

## MoBip Project: To Raise Awareness about Bipolar Disorder through an 3D Pop-Up Book

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### ABSTRACT

*This study aims to set forth a framework for how the design and scenarios should be handled, and how mHealth ecosystem and Universal Design principles should be used in the designing of an “interactive augmented reality 3-D pop-up book” that can be viewed on mobile devices. This book, which will pursue the goal of increasing university college professors’ awareness about students with bipolar disorder, will be the first mHealth study handled in this scope in the literature. In the background section of the study, the authors first elaborate on the rapid advancement of mobile devices, their proliferation and their reflections on mHealth projects in the healthcare sector. Then the authors include mHealth-related applications that raise awareness, the authors analyze the importance of social awareness about mental health, and finally, the authors get to the core of bipolar disorder and present the current situation. Within the scope of this study, the authors construct a theoretical framework that will assume the guiding role in the completion of an interactive 3-D pop-up book.*

### INTRODUCTION

This study aims to develop a framework for designing an interactive augmented reality 3-D pop-up book and increase the awareness of university teaching staff about learners with bipolar disorder. With the help of this book, it will be possible in the future to act out scenarios that are very hard to actualize in real life. In addition, the spatial adequacy of the college professors who use this book rather than interacting with a 2-dimensional printed book will be positively enhanced.

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In the book which is to be designed, scenarios will be formed corresponding to the daily problems of people with bipolar disorder and will be acted out in an augmented reality pop-up book which will be presented to university teaching staff through a digital storytelling technique. Individuals with bipolar disorder who spend significant amounts of time at educational institutions tend to have frequent interactions with the professors there. However, due to a lack of empathy on the part of these academicians, the bipolar individuals often become isolated and feel excluded. Mood swings are a large proportion of the lives of persons with bipolar disorder, their quality of life should be enhanced, and they should be provided with equal opportunities. Support for these individuals, which can be quite productive when steered in the right direction, is of utmost importance to reintegrate them into society.

A review of the literature shows that although there are many mobile applications for people with bipolar disorder, there is no study involving augmented reality interaction, edutainment, and scenarios enhanced with usability to increase awareness about these individuals. Among the analyzed mHealth projects that target increased social awareness, there is no augmented-reality-supported project that seeks to reintegrate bipolar individuals into society.

Despite the development of various mobile applications for people with bipolar disorder and efforts to raise social awareness on special days in recent years, it is apparent that these efforts are inadequate. This study aims to alleviate this deficiency in the literature, and a novel study will be conducted.

The seven principles of Universal Design and the “health,” “technology” and “finance” components of the mHealth ecosystem will be combined to construct the theoretical matrix. Scenarios prepared with ZooBurst software will be acted out to create interactive AR 3-D pop-up books; these books will be implemented to academicians at the universities. In the final stage, the efficiency of the study will be evaluated.

## **BACKGROUND**

### **Development of Mobile Technologies**

The revolutionary developments in information and telecommunication technologies have a great impact on people’s lives. Mobile technology has transformed many aspects of life. Cellular mobile phone technology is regarded as one of the fastest adopted technologies in the history of humanity (Brian & Ben-Zeev, 2014). According to International Telecommunication Union [ITU] (2012), in more than 100 countries, mobile cellular penetration has already exceeded 100%. This simply shows that mobile cellular subscribers have outnumbered the people living in those countries. Likewise, according to an ITU (2014) report, the number of mobile broadband subscriptions is 2.3 billion, whereas the number of mobile cellular subscriptions is 7 billion. According to Cisco (2012), the number of mobile devices is expected to exceed the world population and reach 10 billion, and there will be 1.4 mobile devices per person in 2016. These data show that use of mobile devices will increase even further in the future and that they will be an indispensable part of daily life.

In addition to the SMS, GPRS and Bluetooth features of mobile devices (World Health Organization [WHO], 2011) their functionality has increased with new added features such as GPS, accelerometer, and many different sensors; their mobile data speed has increased with 3G and 4G; touch screen technologies have advanced; processor capacity and memory have increased. Also, mobile software and applications

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