College Students’ Attraction to the Mobile Augmented Reality Game Pokémon Go

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ABSTRACT

Recent headlines show instances of the popular augmented reality game Pokémon Go. Higher educators are watching students engage with schools in their community as they search for elusive Pokémon characters on mobile devices. But, technology is not without risk (i.e. privacy, physical harm) that must be considered. This article reports results of a mixed-methods study, in which 452 college students revealed their motivations for using the mobile augmented reality game Pokémon Go. The authors examined student survey data to find whether race, gender, or age influenced who played the game. In addition, the authors’ findings included student perceptions as to Pokémon Go’s risks and benefits, learning, and student recommendations for improving the game. Furthermore, based on their findings, the authors discuss how augmented reality games can be useful for learning, building community and social capital.

KEYWORDS

Health Benefits, Higher Education, Mobile Augmented Reality, Mobile Games, Pokémon Go, Pokéstops, Privacy, Risks, Social Connections, Student Learning

INTRODUCTION

In 2016, Time Magazine predicted that augmented reality (AR) and mixed-reality (MR) would be among the five biggest trends to influence the technology industry in 2017 (Bajarin, 2016). Caudell and Mizell (1992) first coined the phrase augmented reality (AR) to describe how digital graphics were blended onto a physical display in aircrafts. AR has been redefined to describe the overlaying of virtual 3D graphics that blend real and digital content in three dimensions (Klemke, van Rosmalen, Ternier & Westera, 2015). The New Media Consortium noted that “the powerful significance of the concept of blending information and the real-world in an increasingly experiential environment has pushed AR to the forefront in the realms of business, technology, entertainment, branding, and education” (Johnson, Smith, Willis, Levine, & Haywood, 2011, p. 16).

By 2018, Juniper Research estimates that nearly 200 million users will utilize AR applications (apps) through smartphones, tablets, and smart glasses (Wiggins, 2013). The ubiquitous use of mobile devices has spawned opportunities for MR through the blending of virtual world objects within

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real-world spaces (DaCosta & Seok, 2017). Also, “Smartphones and tablets contain sensors that integrate virtual information into a person’s physical environment without constraining the individual’s whereabouts to a specially equipped area” (Höllerer and Feiner, 2009, p. 1).

The purpose of this research is to explore college students’ interest in the mobile AR game Pokémon Go (Pokémon) as to the game’s attraction, usage, risks, benefits, and challenges. Specifically, this study will examine motivations for play within the demographic variables of race, age, and gender. In addition, recommendations students have for educational institutions will be considered. The following sections provide a review of relevant literature about AR and mobile AR, a detailed description of the study and mixed-methods used, analysis, findings, discussion, limitations, conclusion, and implications for the study.

LITERATURE REVIEW

One of the first immersive AR systems created was Virtual Fixtures, which used a pair of binocular magnifiers and two physical robots to simulate real-world dexterous tasks (Rosenberg, 1993). Historically, simple forms of AR have been used in various forms such as barcodes, QR codes, and tags (Madden, 2011). Early interest in AR within the video game industry peaked in the 1980s and 1990s with head-mounted displays and peripherals (e.g. Nintendo’s Virtual Boy and PowerGlove), flooding the market to give gamers a sense of spatial presence (Boyer, 2009). More recently, AR has been leveraged to improve efficiency and create safer environments for workers, customize real-time trainings, and aide in elements of medicine, military, education, and cultural experiences through mobile apps (McWhorter, 2014).

AR has been posited for revolutionizing the field of education (Delello, McWhorter & Camp, 2015), and building a community of practice as students learn through social interactions (Delello, 2014). Klopfner and Sheldon (2010) underscored the potential of AR for learning that enables “students to see the world around them in new ways and engage with realistic issues in a context with which the students are already connected” (p. 86).

MOBILE AR GAMES

Over the last decade, game design has made significant advances in terms of AR initiatives. For example, AR recently made numerous headlines due to the launch of the popular game, Pokémon (Pokémon), based on the popular Pokémon card game. Clark and Clark (2016) noted that the Pokémon is the first mobile AR (MAR) game to combine virtual, spatial, social, and physical elements into one. Also, Nintendo’s Pokémon Go is a free AR game launched as an application for mobile devices like Android and iOS smartphones. Pokémon was the third most downloaded application in 2016 (Eadicicco, 2016). ComScore (2017) reported 20 million daily visitors to the application Pokémon by end of July 2016 and 60% of the users were millennials (18-34). And, over 60% of individuals who download Pokémon were daily users (Schwartz, 2016). In fact, Pokémon surpassed every online game in daily usage its first month of play (Tabacchi, Caci, Cardaci & Perticone, 2017).

To play Pokémon, users walk around to catch Pokémon characters using an augmented overlay combined with a real-world global position satellite (GPS) map along with their smartphone. When a Pokémon (Pocket Monster) is in range, the mobile device vibrates. Additionally, opportunities are available to collect items such as PokéBalls needed to capture the Pokémon (see Figure 1). These locations (PokéStops) are located within communities such as museums, restaurants, and historical markers (https://www.pokemon.com/us/).

While playing Pokémon, users may customize their avatar; earn points, and level rewards like PokéBalls, medals, and potions for playing. An in-app shop allows users to purchase additional resources. During play and collection of Pokémon characters, additional levels can be unlocked allowing for better rewards and experience points (XP), without cost. Additionally, research noted
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www.igi-global.com/article/procedural-ethos-confirming-persuasive-serious/61149?camid=4v1a

Gamification and Smart Feedback: Experiences with a Primary School Level Math App
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