Exploring the Use of Gamified Augmented Reality Apps in the Formation of Interest Among Vocational College Students

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Abstract: Gamification has become an important strategy for teaching and the growing use of mobile phones makes it possible to combine learning with AR. The study outlined in this paper aimed to explore the use of gamified augmented reality apps in the formation of interest among vocational college students. In this study, the researcher chose a class that used a gamified AR app named XploreRAFE+ in a vocational college in China as a specific case to understand the use of gamified AR apps in the formation of interest. Multiple qualitative techniques, namely observation, interviews and document analysis were used to collect data. The findings of the study indicated that the use of XploreRAFE+ apps could create a meaningful learning environment that cultivated students' interest.

Keywords: Learning interest, gamification; augmented reality; vocational college students

1. Introduction

In the context of the Fourth Industrial Revolution, the application forms of gamification are constantly changing. Augmented reality (AR), as an emerging technology, brings new digital learning experience to learners (Sachs, 2016). The use of gamification and AR technology has shown significant advantages in enhancing students' learning interest (Bressler & Bodzin, 2013). Interest, which is one important aspect of motivation and engagement, is a powerful motivational force (Harackiewicz, Smith, & Priniski, 2016). However, as the decline of vocational college students' quality and recognition degree of vocational colleges, as well as the outdated and backward teaching methods in vocational colleges, many scholars have found that students in vocational colleges generally have a problem of lack of interest in learning in China (Hu & Hong, 2020). Students' lack of interest in learning has become an urgent problem to be solved. Therefore, in this study, the researcher chose an English class at a vocational college that used a gamified AR apps named XploreRAFE+ as a specific case to understand the use of gamified augmented reality apps in the formation of interest.

2. Research Goals

The goals of this study were fourfold. The first goal was to explore the process of interest formation and its relevant influencing factors among vocational college students in a gamified AR environment. The second goal was to explore how a gamified AR environment triggers students in English language learning. The third goal was to explore how a gamified AR environment immerses students in English language learning. The fourth goal was to explore how a gamified AR environment extends students' learning experience.

3. Research Methodology

The researcher adopted a qualitative case study which focuses on the integration of a gamified AR apps named XploreRAFE+ on students' learning interest in a vocational college in China. Meanwhile, data

were collected through observation, focus group discussions and prolong interviews, and document analysis over the course of one month on thirty-eight vocational college students. The data were analyzed through the four phases, namely data preparation, reading and memoing emergent ideas, reading and memoing emergent ideas, and developing interpretations and drawing conclusions. A constant comparative strategy advocated by the grounded theory approach (Charmaz, 2006) was used in the analysis process as it is suitable for answering the research questions in the study (Merriam & Tisdell, 2015).

4. Results

This study suggests that a gamified AR environment constructed through the use of XploreRAFE+ apps could create a meaningful learning environment. In the learning environment, the process of interest formation is a dynamic loop including piquing curiosity, experiencing optimal learning experience, and perceiving meaningfulness. Further, its use has piqued students' interest to learn English by fostering students' autonomy, competence and relatedness with real-life experience, all of which resonates with the main psychological needs for intrinsic motivation. Meanwhile, the integration of the gamified AR apps could also enhance students' confidence and improve their English learning experience.

5. Future Plans

According to the findings of the study, to cultivate students' interest in learning, attention should be paid to the use of meaningful game elements such as play, choice, engagement and reflection in instructional design. Meanwhile, installing the features of AR technology offers novel perceptions, and supplementing virtual information on the real environment to different stages of interest formation is also significant to foster students' learning interest. Gamification elements such as leaderboard and timers also can be used in different stages to further stimulate or control students' engagement. However, these elements are, as claimed by Nicholson (2015), more suitable for short-term change. To cultivate students' interest in learning and foster a long-term behavior, the meaningful gamification elements combining the use of AR technology are significant as the combination can effectively enhance students' competence, autonomy, and relatedness. Especially, for vocational college students, it also improved their confidence and brought pleasure learning experience. These not only meet vocational college students' psychological needs, but also bring them positive emotional values.

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