The Effects of Online Interactive Games on High School Students’ Achievement and Motivation in History Learning

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ABSTRACT

Many studies demonstrate that Digital Game Based Learning (DGBL) can foster learning effect. The purpose of this study is to survey whether the online game in junior high school students can encourage learning effect in Taiwan’s History. So, the research applied Interactive Game-based Learning System (IGLS) to junior high history teaching as an ancillary tool to enhance users’ learning motivation and academic performance. After a four-week experiment conducted on eleven students, the paired sample t test analysis considerably impact on experimental group to significance .05, and one-way ANCOVA showed login IGLS the number of days every week more learning effect to be better. Besides, questionnaires exhibited that IGLS not only magnetized over ninety percent of students’ participation but invigorated their learning will. The research presents positive results on enhancing students’ learning motivation and academic performance.

Keywords: Digital Game Based Learning, History Education, Learning Motivation, Online Game, Taiwan

INTRODUCTION

With rapid growth in information communication technology, online games have gradually become part of people’s life in recent years. It is believed that digital games, as a catalyst, can be very useful teaching media. According to the Taiwan Institute for Information Industry in 2010 published report of using broadband network. Taiwan’s Internet users most commonly used online gaming services (50.28%), the largest proportion of 12-19 years accounting for 83.08%-90.91%. For this reason, teachers must elevate students’ learning ability and knowledge through temporary assistance like information technology. To teachers and students, the meaning of this incoming digital trend counts for more challenges than opportunities. History, a subject about facts, should also be inextricably linked to digital world. Being a junior high history
teacher, the researcher found that it would be better to use a lively way-learning by playing— we can use some digital assistance to arouse students’ learning motivation and academic performance. Moreover, traditionally teacher-centered didactic instruction is progressively substituted by student-centered various interactive learning patterns. The innovating digital learning which claims for enhancing learners’ motivation and initiative exploration is available to all. Terms like E-learning, U-learning, Digital Game-based Learning (DGBL) gradually represent information technology integrated into teaching in school. DGBL was first proposed by Marc Prensky in 2001. Through digital games, learners obtain sense of achievement in solving problems and dealing with challenges. Digital game based learning takes both entertainment and education into consideration. In Prensky’s opinion, digital game based learning will be the main learning pattern in the 21st century, the traditional learning style such as emphasizing reading and writing is going to be replaced. Online games stand for part of teenagers’ culture, so it’s undoubtedly inevitable to integrate it into school education.

Moreover, successful learning definitely needs motivation. Learning motivation is the key factor whether digital game based learning and web base learning community work or not. Munn et al. (1969) defined that motivation, as a sort of intrinsic power such as interest, attitude and desire, can influence personal behavior. On the other hand, Keller (1983) regarded motivation as people’s choice of experiences and goals, and how they make efforts to achieve them. Besides, Reilly (1983), Lewis, and Tanner considered motivation to be the power inside oneself. Of all digital learning motivation theory, Keller’s (1983) ARCS theory is the most universal one. The theory is composed of four aspects: attention, relevance, confidence, and satisfaction. Taran (2005) placed specific emphasis on attention, so he promoted ten skills for maintaining learners’ online learning attention to strengthen motivation. That proves the importance of motivation to academic performance. Paras and Bizzocchi (2005) combined ARCS theory with Csikszentmihalyi’s (1991) Flow theory because they thought that a good digital game design immerses learners in games, and then brings about effective learning process.

Games, one of the oldest learning methods, are part of human cognition development. They have positive effect on learning basic cognition operation, understanding complex grammar structure, and abstract thinking. According to Vygotsky (1966), learning by playing helped promote Zone of Proximal Development (ZPD). In Bruner’s (1960, 1989) research, it indicates that games can adjust teaching for both fast learners and slow ones to attain the spirit of spiral curriculum. Cheng and Chen (2008) also found that peer cooperation and coordination through digital interactive games enriched learners’ learning motivation and academic performance. Prensky (2003), a game designer, pointed out the integration of games and learning will change from the traditional idea “learning is depressing” to “learning by playing, learning through playing.” To realize this ideal purpose, letting students learn actively will make the process of learning become more and more interesting.

After Lippitt (1981) introduced the term “learning community,” most scholars and experts generally acknowledge that it is characterized by learning by sharing. Web base learning community, online virtual space, means a group of learners form common learning culture in which they brainstorm, make efforts and understand each other. By integrating scholars’ viewpoints of online learning community, Wang (2003) offered a clear definition: web base learning community is a kind of computer-mediated communication which includes sharing ideas, knowledge, experience and information, forming common purpose, investigating, and enhancing knowledge and ability. Within the atmosphere of support, care, openness and compliance, learners can challenge his/her own belief, value, knowledge and experience. Furthermore, learners enhance his/her knowledge and ability as a result of introspection. The learning culture figures that learning relies on social interaction which derives from personal active communication, sharing and investiga-
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