



How do apparel students perceive the use of VR technology in pre-study tour class?

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Keywords: Virtual reality, study tour, technology acceptance model

Introduction. Virtual reality (VR) technology has been widely used progressing the digitalization of many areas of human life (Koivisto & Hamari, 2019). VR is defined as “the illusion of participation in a synthetic environment rather than external observation of such an environment. VR relies on three-dimensional (3D), stereoscopic, head-tracked displays, hand/body tracking, and binaural sound. VR is an immersive, multisensory experience” (Gigante, 1993, p. 3). Researchers have shown the educational value of VR and the contribution of the use of VR to learning in various disciplines (Mikropoulos & Natisis, 2010). VR technology can provide students with an experiential learning experience by engaging the senses and immersing in experience beyond the online website information. The practice can be memorable and unique by giving students a sense of movement within the virtual environment. However, little research examined the use of VR technology from a student perspective.

When the university stopped allowing students to travel due to the COVID-19 pandemic, a pivot to virtual study tours was required for students to complete their degree requirements. Zoom was successfully incorporated into all students’ industry contacts and communication; however, the cultural experiences were not possible. With the utilization of virtual experiences afforded by the Oculus Quest 2 VR Headsets, those experiences may be possible in the virtual environment. Even as travel is being resumed, the use of VR technology could have a positive impact on learning in the pre-study tour class. The primary goal of this study is to understand how VR technology influences the learning experience in the pre-study tour class. The study aims to examine factors affecting students’ class attitude and satisfaction.

Theoretical Framework and Hypotheses. The technology acceptance model (TAM; Davis, 1989) is adopted to examine students’ acceptance of the use of VR technology in the pre-study tour class. TAM explains users’ technology adoption behavior is determined by perceived usefulness, perceived enjoyment, and perceived ease of use (Davis et al., 1993). Davis et al. (1993) define that perceived usefulness and enjoyment refer to individuals’ belief that using a particular technology would be useful and enjoyable. Perceived ease of use refers to individuals’ belief that using a particular technology is easy to use (Davis, 1989). Perceived ease of use influence both perceived usefulness and perceived enjoyment (Davis, 1992). The three factors—perceived usefulness, enjoyment, and ease of use—influence attitudes toward using new technology (Davis et al., 1993). Finally, attitude may lead to higher satisfaction with class outcomes. Hence, we propose the six hypotheses (see Figure 1).

Method. Twenty-eight students enrolled in the pre-study tour class at a public university in the Midsouth university were recruited to conduct an online survey. The online survey was developed using Qualtrics software. Reliable and valid scale items were adapted from existing literature to measure the five variables. For example, scale items measuring three variables (i.e., perceived usefulness, ease of use, and enjoyment) were adapted from Davis et al. (1992) and Kim et al. (2009). Five items measuring attitude were adapted from Spears and Singh (2004). Three scale items measuring satisfaction with class outcomes were adapted from Peltier et al. (2021). All scale items except demographic information were measured using five-point Likert-type scales. Participants were asked to watch two YouTube videos among five videos (e.g., garment district tour, Mood fabrics, and New York walking tour) using a VR headset for an assignment in the pre-study tour class. Next, participants were asked to indicate their opinions regarding the experience of watching two YouTube videos with the use of a VR headset. Participants were also asked to report what they liked and disliked about using a VR headset. A total of 27 participants completed the survey. One student could not watch any YouTube videos because the student felt sick when using a VR headset. Path analysis was employed in Mplus 7.0 to test the six hypotheses in the theoretical framework.

Results. The majority of participants were Caucasian or European American female students (81.5%) between 20 and 23 years old. Almost 52 % of participants (N=14) indicated that they have used the VR headset previously. Exploratory Factor Analysis with varimax rotation in SPSS determined one factor for each variable based on an Eigenvalue greater than one criterion. All items were retained with factor loadings of .50 or higher on one factor, but below .30 on the other factor. All Cronbach α values exceeded .86 which supported reliability for all variables (Nunnally & Bernstein, 1994). The average variance extracted (AVE) values exceeded .50 for each variable (Fornell & Larcker, 1981). As shown in Figure 1, all hypotheses were supported, however, the path model yielded an unsatisfactory fit with the data.

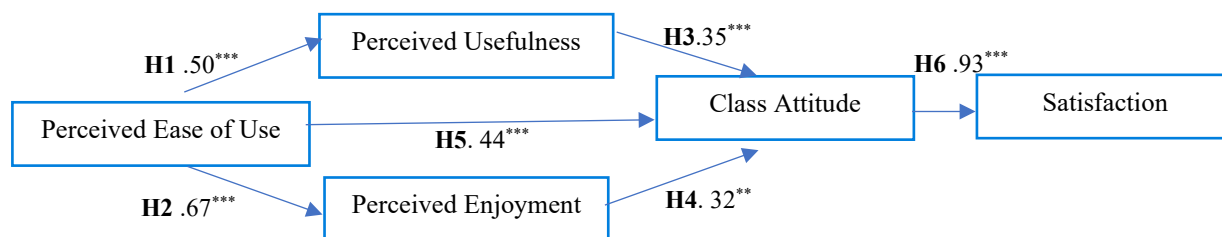


Fig. 1. Research Model. [$\chi^2 = 13.39$ ($df = 4$)], CFI=.93, RMSEA=.30, SRMR=.10. ** $p \leq .05$ *** $p \leq .001$

We examined an alternative model that improves model fit indices (see Figure 2).

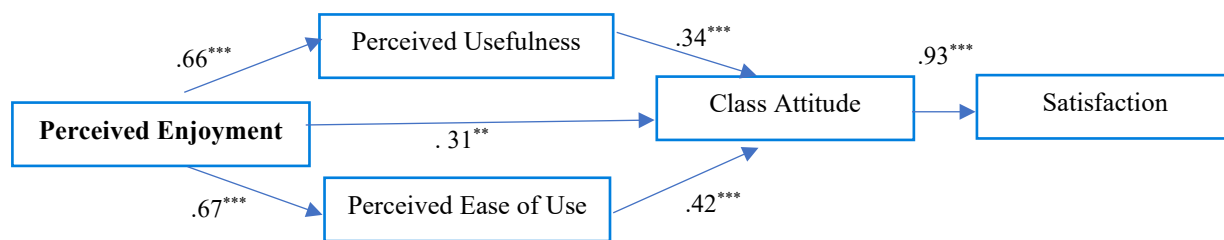


Fig. 2. Alternative Model. [$\chi^2 = 5.56$ ($df = 4$)], CFI = .99, RMSEA = .12, and SRMR = .03. ** $p \leq .05$ *** $p \leq .001$

Discussion. The results showed that most participants perceived VR technology as useful, easy to use, and enjoyable in the pre-study tour class. Perceived enjoyment positively influenced both perceived usefulness and ease of use. While both perceived usefulness and ease of use positively influenced class attitude, perceived ease of use had a stronger impact than usefulness. Class attitude enhanced satisfaction with class outcomes. We found the alternative model fits better with the data. When participants use new technology such as a VR headset, the positive feeling (i.e., enjoyment) is crucial to enhance their perception of the usefulness and ease of use of the technology. Whereas most participants had positive experiences with using a VR headset, some had negative experiences. Participants (60%) indicated that they enjoyed watching YouTube videos using the VR headset. They liked feeling like they were walking around New York. They also indicated that VR technology helps their learning be more interactive and engaging. However, almost 40% of participants reported that they did not enjoy using VR technology because they felt nauseous, dizzy, uneasy, and they got headaches. These participants also reported that wearing the VR headset made them feel uncomfortable.

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