

Iceberg Theory-based Interview Simulation System of Mixed Reality

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ABSTRACT

The purpose of this study is to create a mixed-reality (MR) system for interview simulation scenarios. This system is established not only to reduce the difficulties faced by interviewees but also raises their confidence during the interview and help the interviewees improve the selection rate. This system uses frequently asked questions and the corresponding answers, and provides scores to check if the responses are correct or not. This system uses Unity3D to build an active and immersive exploration of the practice of a virtual interview system and imports the Vuforia kit to provide an augmented reality picture effect. The reliability and validity of the system were evaluated among 13 users to explore the ability of the MR system to improve job seekers' competitiveness. After the exercise, the users became familiar with the interview and improved their performance. This study observed an improvement in interview skills and an increase in the election rate. Moreover, this study presented an MR interview system that can be used for the academe and business.

Keywords: Interview, Mixed reality, Virtual reality, Augmented reality.

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1. INTRODUCTION

According to Posthuma et al. (2002), resumes, psychological tests, and interviews are all processes used by companies to select talents, with interviews being the most common method. According to McClelland (1973), other factors aside from labor intelligence should be considered in work performance, such as attitude, cognition, and personal traits. These factors are collectively referred to as functions. Spencer and Spencer (1993) proposed that iceberg theory can be used to explain the concept of function. People have explicit traits (techniques and knowledge) and potential traits (values, motivations), similar to iceberg structures. The exposed parts of the icebergs are explicit traits, which means that they can be strengthened through training and learning. The portions of icebergs below sea level are potential traits that are less difficult to assess and are difficult to change through training. Potential traits often affect work efficiency.

Kwon et al. (2013) proposed that an immersive virtual environment has the potential to help people overcome phobias, such as anxiety in interviews, and provide a virtual environment with therapeutic value, eliminating the use of traditional

interview methods, such as written, video, and face to face. The present study uses a mixed-reality (MR) system to simulate interviews. This system is based on the first-person perspective, simulating the feeling of restlessness in tense situations and strange places. Through this system, jobseekers can identify the interview-related items that may be asked by using MR, which could effectively deepen the sense of the scene. In this way, the system can reduce the anxiety of jobseekers during the interview and increase their self-confidence.

This research mainly focuses on actual simulation interviews, and the process takes more time and money. Professional experts need to be invited while conducting face-to-face exercises. The research objectives are as follows: (1) To establish an MR simulation interview system based on iceberg theory and conduct interview exercises from the first-person perspective to improve users' ability to answer frequently asked questions and (2) to use iceberg theory and the Situation, Task, Action, and Result (STAR) rule to practice structural and situational interviews to enhance interview skills and increase the chances of successful interviews.

In addition to using iceberg theory to assist in the classification of questions, the STAR rule is used to assist jobseekers while practicing for interviews. If an individual masters the STAR rule, then they will be able to answer in a logical and emotionally stable manner when they are being questioned by the interviewer. Intelligence quotient is a key in the completion of the work, and the emotional quotient supports job completion (Helmiatin, 2018).

2. LITERATURE REVIEW

Interview situation, mentality, and items: New jobseekers and people in the middle of their careers all have to undergo job interviews. Finding a suitable job depends on the improvement of interview skills. A study by Ko and Lee (2014) found that people are fully prepared for the "interview code of conduct," which increases their success rate. Hu and Wang (2008) pointed out that companies conduct interviews based on the job ability and attitude of jobseekers. Their research suggests that language skills, communication skills, work attitudes, and living habits should be emphasized.

Augmented Reality (AR) uses computer 2D or 3D technology to embed simulated objects into the real world for observation or training purposes. For example, in the mobile game Pokémon GO, the player sees the real environment and the virtual protagonist in the game through the camera of the mobile device.

In Virtual Reality (VR), a virtual world simulates real space. Jobseekers play the primary role in connecting to the virtual world through computers or handheld devices, allowing them to interact with the scene through handheld controllers. In terms of navigation applications, Kersten et al. (2017) reconstructed three-dimensional historic buildings and cities to provide opportunities for people to experience, thereby creating a combination of education and entertainment. They applied VR to create 3D reconstructions, including virtual city models and VR interactions.

Mixed Reality (MR) is a combination of VR and AR. For medical applications, Chao et al. (2017) presented a clinical scene with virtual and real integration screens. Students were able to increase their motivation and experienced learning knowledge under the arrangement of plots and problem clues. In AR, the detected information of

the learning point in the receiving space environment is captured, and the set image is captured to instantly obtain the information of the cloud reading teaching material.

Ajzen (1985) proposed the theory of planned (TPB) which is an extension of the theory of reasoned action (TRA). When predicting individual behavioral intentions, only the rational behavior of people is considered. Thus, TRA lacks the factors of objective environment and resource limitation. TPB added perceived behavioral control to make TRA more complete. On the basis of TPB, this study considers the influence of internal and external factors on behavioral intentions. When an individual has an intention to pursue a job, he or she will perform actual job-seeking behaviors (Chang et al., 2012).

3. METHODOLOGY

Unity3D software is widely used by amateurs and professional developers. Its software support for 3R, such as AR, VR, and XR, has built-in kits, such as Vuforia, Google AR Core, Apple Kit, and Windows Mixed Reality. Peters et al. (2016) suggested that Unity3D software is used for development because of the richness of teaching files and ease of use, and the availability of developer forums, resources, and scripting languages. Therefore, this study chose Unity3D for implementation and testing and development.

This system adopts TPB. When a jobseeker intends to apply for a job, familiarity with the test should be ensured. For example, the test may include professional subjects, mathematical logic tests, and personality values. The system will also provide an in-depth discussion of resume research writing and its interviews. At the same time, the system is expected to increase the chances of interviewees to obtain jobs. The total respondents in this study numbered 13 and had a background in information management. To ensure an environmentally friendly approach, the questionnaire was designed by using Google Forms.

The collection period of the materials was from May 15 to 16, 2018. The Mixed-Reality Satisfaction Questionnaire covers qualitative interviews and quantitative analysis. The questionnaire is scored as follows: low (No) is minus 1 point, medium (no opinion) is zero, and high (yes) is positive 1 point. The quantifiable data are divided into three parts: (1) satisfaction with the system description, (2) use effect, and (3) system presentation. The qualitative interview is the fourth part of the questionnaire.

4. RESULTS

Quantitative analysis

The quantifiable data were divided into three parts. In the first part, about 69% of the respondents were satisfied with the overall system. The second part provided an analysis of the effects, as shown below. A total of 78% of the respondents affirmed the use effect. All respondents believed that the MR system helped them become familiar with the interview process. A total of 85% of the respondents believed that the MR system helped them understand the interview content. Moreover, they found this system helpful for self-thinking and preparation for job hunting.

The third part presents an analysis of the visual presentation, as shown below. A total of 73% of the respondents affirmed the visual presentation. A total of 92% of the respondents believed that the prompts in the MR system can attract the attention of the

respondents. A total of 77% of the respondents believed that the system enables respondents to understand how the system performs. The respondents indicated that the system is easy to use and are satisfied with the fluency of the system.

Qualitative analysis

The key factors asked in the verbatim draft are organized as follows: With regard to the level of system development, most respondents perceived its attractive pictures, novelty, and multiple scenes, which are new topics. With regard to the practicality of the system, most respondents found the system easy to understand, easy to use, and highly practical, indicating that the system is good. All 13 respondents agreed that this system helps jobseekers become familiar with the interview process. People's familiarity with the interview environment can reduce tension and improve their performance.

The respondents agreed that the system helps jobseekers succeed in interviews and reduces the need to travel and costs related to time and money. The respondents felt that the system has jobseekers in mind and that it benefits job seekers. Some respondents expressed that the sense of reality was not inadequate, that is, the level of interaction needs to be enhanced. If the system is perfect, then people can use it easily with their equipment. This system helps jobseekers score well during the interview, given that it allows people to practice by themselves at home before their interview.

5. CONCLUSION

This study established an MR simulation interview system based on iceberg theory. This system covers the VR and AR functions, and is a new topic. This study sought information management experts to conduct a survey on system satisfaction. Through the finalization of the above process, the research objectives and results were integrated into conclusions. The survey found that the system has many sustainable advantages. The respondents believed that the MR system helps jobseekers improve their focus during interviews and their understanding of the current situation of the company.

The system constructs the practice structure and situational interview by using iceberg theory and the STAR rule. The respondents believe that the system is fully aware of the concepts that the system is to express and also helps jobseekers fully integrate into the context of the system. Moreover, the respondents are willing to recommend this system to others. In the qualitative interview, the verbatim draft picked the key factors. In sum, the experimental system enhances interview skills and increase the chances of successful interviews.

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