

Shakespeare and Social Presence: The Power of Virtual Reality in Remote Education

John Funchess Ott, Jr. & Tammi Kolski

DOI:10.59668/1269.15660



This mixed methods study focuses on a remote educational intervention using Quest 2 headsets to facilitate a virtual reality book club studying the works of William Shakespeare. Students engaged with one another, a teacher, and a live actor in virtual reality using VRChat and Bigscreen for this online learning experience. Social presence and academic growth were evaluated. Data was collected using a pre-post assessment test, writing prompts, multiple-choice questions, and student interviews to measure knowledge of Shakespearean works. Three quantitative measures, student interviews, and writing prompts were used to assess social presence. Results suggested that students can learn about Shakespeare while also building social presence in virtual reality. The majority of students interviewed stated it was easier to make friends in virtual reality than in an in-person setting. This study can serve as a model for future research on the social and academic elements of innovative educational technology.

Introduction

Social presence is an important element of online education. Social presence has been defined as a “sense of being with another in a mediated environment” (Biocca & Harms, 2002, p.10). The community of inquiry model’s conception of social presence focuses on group cohesion, affective expression, and open communication (Garrison & Arbaugh, 2007). Research suggests achieving a sense of community can be a challenge in online learning (Sun & Chen, 2016). This study considered social presence regarding group cohesion and cognitive effect as well as interpersonal interactions in an online environment (Arbaugh et al., 2008). To what extent social presence should refer to factors besides the salience of another individual and their interaction in a mediated environment has been discussed in the literature (Kreijns et al., 2014). Previous scholarship has discussed virtual reality within the context of Shakespeare (Witteck & McInnis, 2021). Although past research has been conducted on virtual reality and education, there is a gap in the literature relating to virtual reality being used as the medium for students participating in online learning (Kavanagh et al., 2017). This study examines an intervention using virtual reality for remote education.

The purpose of this mixed methods study was to implement and evaluate the impact of a virtual reality book club on the social presence of students. This research examined participant responses using virtual reality headsets to study the works of William Shakespeare. Students participated in a virtual reality book club focused on four different plays. Social presence and academic growth were evaluated. This study examined two research questions: 1) How does the implementation of a virtual reality technological innovation affect students’ knowledge of Shakespearean works? 2) How does the implementation of a virtual reality technological innovation affect social presence in students?

Methodology

Nine students used Quest 2 virtual reality headsets to participate in the virtual reality book club. Students came from a variety of educational backgrounds. Some students attended a traditional public school district in rural South Carolina while others had charter school backgrounds. Several were homeschooled. Four different plays by William Shakespeare were studied in the virtual reality book club: The Tragedy of Julius Caesar, Macbeth, Hamlet, and Richard III. VRChat was used to take students to various virtual worlds related to the content being studied?

Bigscreen was used to show students visual art based on the plays, Shakespearean passages, and animated scenes of the works. A live actor provided Shakespearean performances within virtual reality.

The virtual sessions were held during the evening hours for eight consecutive weeks. Students used VRChat to meet up on a farm for the first virtual reality session. The teacher put down a portal, and students walked through to visit the Pantheon. The teacher led a discussion on Julius and Augustus Caesar next to a statue in the virtual world. The students and the teacher walked to the amphitheater. The live actor joined and recited lines from the work. After the actor's performance, the teacher asked about the content of the Shakespearean performance. The next week students used Bigscreen to view animated scenes, watch the live actor perform, and engage in discussion. On the third week, the actor performed a portion of Macbeth while in a throne room in VRChat. In the fourth week, students used Bigscreen to watch animated scenes of Shakespeare and discuss the text. In order to study Hamlet, students visited the Temple of Herod, a cemetery, and a Victorian house. Students watched the actor recite portions of the work in both the cemetery and the Victorian house. The last two sessions focused on Richard III. Students learned about the era of the Renaissance by visiting a cathedral and examining various paintings. Students also visited the throne room and discussed a quote from the play. In the last session, students watched animated scenes of Richard III and discussed choice and destiny within the context of Shakespearean works.

Students were assessed on social presence using three different measures: the Social Presence measure on the Community of Inquiry Survey, the Adapted Networked Minds Social Presence Measure, and the Social Presence Survey. The Shakespeare Knowledge Assessment was used to assess student knowledge of the works. Students were provided with the Shakespeare Knowledge Assessment early in the intervention as well as after the final virtual reality session. The website myShakespeare.com was used by the researcher to create most of the Shakespeare Knowledge Assessment questions. Multiple-choice questions and writing prompts were also provided after each session to evaluate knowledge of Shakespeare. The Community of Inquiry survey (Stenbom, 2018), a social presence survey based on previous research (Nowak and Biocca, 2003), and an adapted version of the Networked Minds Measure of Social Presence (Harms & Biocca, 2004) were used to assess social presence. Modifications were made to various assessment questions. Interview questions were also used in this research.

Results

Descriptive statistics and nonparametric statistics were used to examine the results of the Shakespeare Knowledge Assessment. Students showed an average growth of 16.04% in their knowledge of Shakespeare. Though the average amount of student knowledge did increase, the results were not statistically significant ($p < .07$, $W = 4.50$). Numerous students also correctly answered multiple-choice questions about Shakespearean works. The Community of Inquiry survey showed that students tended to agree that they experienced social presence while participating in the virtual reality book club ($M = 4.12$ out of 5, $SD = 0.83$). Results from the Community of Inquiry survey showed that students tended to agree that they experienced a sense of belonging and felt other participants acknowledged their perspective. Students also tended to feel comfortable participating in conversation. The Adapted Networked Minds Social Presence Measure also provided evidence students experienced social presence ($M = 4.84$ out of 7, $SD = 1.55$). The Social Presence Survey showed that students tended to feel as if they were together with other virtual reality book club participants in the same room ($M = 0.32$, $SD = 0.31$). Students also tended to believe they could get to know an individual they met solely in the virtual reality book club ($M = 0.36$, $SD = 0.22$).

Five students participated in interviews about their experiences in the virtual reality book club. Structural Coding, Emotion Coding, In Vivo Coding, and Process Coding were used to analyze writing prompts and interview data. These methods of coding have been discussed in previous scholarship (Saldaña, 2021). Twelve categories were created which were used to support the emergence of three themes: 1. Students enjoyed sharing a common virtual reality experience while developing a sense of social cohesion, 2. Virtual reality played a powerful role in creating social connections among students, and 3. The immersive nature of virtual reality furthered students' knowledge about Shakespeare. Student interviews provided insight related to the use of virtual reality technological innovation. For example, one student noted that "it's very straightforward and to the point, how you're teaching." A student noted in their interview response, "I just...I feel like it helped in a lot of ways, including just making it easier to talk about how you felt and talk about your opinions." The majority of the students interviewed stated they found making friends in virtual reality to be easier than in an in-person setting.

The interview data of students demonstrated the power of using virtual reality to teach Shakespeare. One participant stated "It's kind of like a field trip at your house. And you don't have to, like, go anywhere.

And it's much easier than flying somewhere, which made it really fun and felt like real life." Another student noted that they "thought of Shakespeare as boring or reading books, but, like, when I can see everything...that made it much better." Both qualitative and quantitative data supported that virtual reality can be used to create an engaging experience for students learning about Shakespearean texts.

Discussion

This research has important implications for how virtual reality could be used to help introverted students participate in remote education. The findings of this study suggest virtual reality could help introverted students improve their social skills. As one student noted, "In real life, a lot of times people respond to you they, like, say, like, something, like, really jerky and mean. But, like, they would respond nicely in VR, and it made me feel happy and accepted." Another student noted "a change of confidence" in relation to a student who was shy in real life but outspoken in

virtual reality. The small sample size of this study is one limitation. Past scholarship has discussed how a limited sample size leads to a lack of validity (Faber & Fonseca, 2014). Future research could conduct similar research on virtual reality and education on a larger scale. Another limitation is that students who participated in the study might have had an interest in virtual reality before the research began. Additional research is recommended on both the social and academic elements of using virtual reality for online education.

References

- Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, D. R., Ice, P., Richardson, J.C., & Swan, K. P. (2008). Developing a community of inquiry instrument: Testing a measure of the community of inquiry framework using a multi-institutional sample. *The Internet and Higher Education*, 11(3-4), 133-136.
- Biocca, F., & Harms, C. (2002). Defining and measuring social presence: Contribution to the networked minds theory and measure. *Proceedings of the Fifth Annual International Workshop on Presence*, (pp. 1-36).
- Faber, J., & Fonseca, L. M. (2014). How sample size influences research outcomes. *Dental Press Journal of Orthodontics*, 19(4), 27-29.
- Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, 10(3), 157-172.
- Harms, C., & Biocca, F. (2004). Internal consistency and reliability of the networked minds social presence measure. In M. Alcaniz & B. Rey (Eds.), *Seventh Annual International Workshop: Presence 2004*. Universidad Politecnica deValencia.
- Kavanagh, S., Luxton-Reilly, A., Wuensche, B., & Plimmer, B. (2017). A systematic review of virtual reality in education. *Themes in Science and Technology Education*, 10(2), 85-119.
- Kreijns, K., Van Acker, F., Vermeulen, M., & Van Buuren, H. (2014). Community of inquiry: Social presence revisited. *E-learning and Digital Media*, 11(1), 5-18.
- Myshakespeare.com (n.d.) <https://myshakespeare.com/>
- Nowak, K. L., & Biocca, F. (2003). The effect of the agency and anthropomorphism on users' sense of telepresence, copresence, and social presence in virtual environments. *Presence: Teleoperators & Virtual Environments*, 12(5), 481-494.
- Saldaña, J. (2021). The coding manual for qualitative researchers (4th ed.). Sage Publications.
- Stenbom, S. (2018). A systematic review of the Community of Inquiry survey. *The Internet and Higher Education*, 39, 22-32.
- Sun, A., & Chen, X. (2016). Online education and its effective practice: A research review. *Journal of Information Technology Education: Research*, 15, 157-190.
- Wittek, S. & McInnis, D. (2021). Introduction. In *Shakespeare and virtual reality* (pp.1-11). Cambridge University Press.

Acknowledgement

Special thanks to the researcher John Ott, Jr.'s father, John Ott, for providing Shakesperean performances in virtual reality for this research.



This content is provided to you freely by The Journal of Applied Instructional Design.

Access it online or download it at

https://jaid.edtechbooks.org/jaid_13_2/shakespeare_and_social_presence_the_power_of_virtual_reality_in_remote_educat