

Evaluating the Use of a Virtual Escape Room to Reinforce APA Style

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Abstract

The use of a virtual escape room as an educational tool has not been well studied. Escape rooms (ERs) have been shown to increase engagement from students and provide an effective method for enhancing learning, particularly of duller subject matters (Morrelle et al., 2020; Veldkamp et al. 2020; Woodworth, 2020). Additionally, APA style can be challenging for students as the material is often dull (Clark & Murphy, 2020; Daniels & Kennedy, 2019). This study was designed in order to create accountability for student learning, increase the rigor of studies measuring the effectiveness of ERs as an educational tool, and explore the use of an asynchronous online escape room. A quantitative, pre-post design study was implemented to examine the effectiveness of using an ER to reinforce APA style. A convenience sample of post-licensure BSN, MSN, and DNP students was utilized. Data analysis will include comparison of the pre- and post-test knowledge scores to assess for knowledge acquisition.

The COVID-19 pandemic demonstrated that many educators were under-prepared to make the switch to a fully online environment. Many activities were independent, self-paced, asynchronous modules that lacked engagement. The use of virtual escape rooms as a learning tool is one method to increase learner engagement in the virtual classroom. The purpose of this study was to investigate if a virtual ER is effective at enhancing students' understanding of APA style.

Background

Prior to the pandemic, escape rooms (ERs) were increasing in popularity,

particularly amongst nursing and other STEM fields (Taraldsen 2020; Veldkamp et al., 2020). ERs have been shown to increase engagement from students and provide an effective method for enhancing learning, particularly of duller subject matters (Morrell et al., 2020; Veldkamp et al. 2020; Woodworth, 2020). Cates and colleagues (2020) found virtual ERs to be an effective method compared to didactic methods (e.g., lecture).

Veldkamp and colleagues (2020) found that many of the ER studies lacked quantitative evaluation methods, thus suggesting a need for more rigorous future research. Evaluation methods for ERs are

not well studied. In their systematic review, only 3 out of 39 studies used a pre-test/post-test evaluation method. Taraldsen and colleagues (2020) suggested that more rigorous studies were needed to evaluate the effectiveness of ERs. However, they noted previous researchers did tend to show positive results for their study goals. In most ER studies, researchers utilized post-activity assessment surveys that used Likert scale questions to measure changes in the researchers' desired domain (Veldkamp et al., 2020). Few studies have been done on virtual escape rooms as a learning tool.

American Psychology Association (APA) Style is particularly challenging for students as the subject matter lacks intrigue, and educators struggle to create engagement (Clark & Murphy, 2020; Daniels & Kennedy, 2019). Clark and Murphy (2020) showed an increase in knowledge gain by utilizing classroom games to assist in APA instruction. Online tutorials have potentially shown to be an effective method for APA instruction (Mages & Garson, 2010). Zafonte and Parks-Stamm (2016) found that while blended instruction of APA style was effective, the gains were much higher when students engaged in a purely face-to-face program. However, researchers noted a definitive lack of accountability in their blended format versus face-to-face in a physical classroom. Thus, they recommended a digital tool followed by additional instruction and assessment methods.

APA style presents its own challenges as the writing style lacks quantifiable measurements. Several studies utilized a pre-test/post-test method of evaluation (Clark & Murphy, 2020; Mages & Garson, 2010; Zafonte & Parks-Stamm, 2016). However, as every research team utilized their own unique quiz and many of the studies were conducted before the release of APA 7th edition, reliability and

validity data is unavailable (Clark & Murphy, 2020; Mages & Garson, 2010; Zafonte & Parks-Stamm, 2016).

Thus, this study was designed to create accountability for student learning, increase the rigor of studies measuring the effectiveness of ERs as an educational tool, and explore the use of an asynchronous online escape room.

Methods

A quantitative, pre-post design study was implemented to examine the effectiveness of using an ER to reinforce APA style. A convenience sample of post-licensure BSN, MSN, and DNP students was utilized. Following consent, students completed a demographics and an APA knowledge pre-test. Students then completed the APA ER activity. The ER utilized a parallel design that allowed the participants to complete the puzzles in any order but required all puzzles to be completed before they could take the post-test. Following completion of all puzzles, students were provided a code that allowed them to complete the post-test APA knowledge test, as well as several questions to assess satisfaction with the activity.

Results & Discussion

Students had an overall mixed opinion of the Escape Room. No statistically significant discernible relationship was found between student's overall opinion of the ER and their change in test score. 61.7% (71/115) students felt ER puzzles were "difficult" or "very difficult." 44.3% (51/115) students rated the puzzles as "difficult." 17.4% (20/115) rated the puzzles as "very difficult." This left skew of student ratings indicates puzzles are challenging but may not be too challenging. Pre-activity 21.7% (25/115) students rated comfort level as "Comfortable" or "Very Comfortable." Post-activity students 56.5% (65/115) rated

their comfort level as “Comfortable” or “Very Comfortable.” Post-activity comfort improved by 160%, or a percent change of +34.8%. Students showed a statistically significant increase in test score following the ER ($p < 0.005$).

Conclusions & Implications

As we continue to see online learning in all levels of nursing education, it is imperative for faculty to seek innovative ways to engage students in the online environment. Using an escape room to teach materials is an innovative strategy, and it is vital to assess its overall impact on student learning outcomes. Examining data regarding overall knowledge acquisition, as well as satisfaction with the activity allows

faculty to determine the effectiveness and level of student support for this type of innovation. As with any new educational pedagogy the process is a constant cycle of planning, implementation, assessment, evaluation, and refinement. As this was the first trial of this teaching modality more work will need to be completed to refine the process.

References

- Cates, A. L., Krueger, J., Simpson, S., & Stobart-Gallagher, M. (2020). Comparing the effectiveness of a virtual toxicology escape room at two emergency medicine residencies. *Cureus, 12*(10), 1-53. doi:10.7759/cureus.11262
- Clark, D. A., & Murphy, W. (2020). The efficacy of a classroom game for teaching APA style citation. *Teaching of Psychology, 48*(3), 209-214. <https://doi.org/10.1177/0098628320977263>
- Mages, W. K., & Garson, D. S. (2010). Get the cite right: Design and evaluation of a high-quality online citation tutorial. *Library & Information Science Research, 32*, 138-146. doi:10.1016/j.lisr.2009.10.004
- Morrell, B. L. M., Eukel, H. N., & Santurri, L. E. (2020). Soft skills and implications for future professional practice: Qualitative findings of a nursing education escape room. *Nurse Education Today, 93*, 1-7. <https://doi.org/10.1016/j.nedt.2020.104462>
- Taraldsen, L. H., Haara, F. O., Lysne, S. M., Jensen, P. R., & Jenssen, E. S. (2020). A review on the use of escape rooms in education – Touching the void. *Education Inquiry, 13*(2), 169-184. <https://doi.org/10.1080/20004508.2020.1860284>
- Veldkamp, A., van de Grint, L., Knippels, M. C., & van Joolingen, W. R. (2020). Escape education: A systematic review on escape rooms in education. *Educational Research Review, 31*, 1-18. <https://doi.org/10.1016/j.edurev.2020.100364>
- Woodworth, J. A. (2021). Escape room teaching pedagogy in the didactic learning environment for nursing. *Nurse Educator, 46*(1), 39-42. DOI: 10.1097/NNE.0000000000000869
- Zafonte, M., & Parks-Stamm, E. J. (2016). Effective instruction in APA style in blended and face-to-face classrooms. *Scholarship of Teaching and Learning in Psychology, 2*(3), 208-218. <https://doi.org/10.1037/stl0000064>