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ENGL231C

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Annotated Bibliography

How can incorporating gaming enhance and impact teaching and learning in classrooms?

Garcia, Chris. “Using video games to achieve academic standards.” Edutopia, 25 Sept. 2024. https://www.edutopia.org/article/using-video-games-school Accessed 14 Nov. 2025

This article discusses how video games and esports can be used in schools to support core academic standards. By creating gameplay activities with standard like Common Core State Standards (CCSS) and the Next Generation Science Standards (NGSS), it argues that games through narration, world-building, and strategic gameplay can further strengthen literacy, mathematics, science, and problem-solving skills. Like students studying scientific concepts in from ecosystems in building games like Minecraft or a student developing stronger problem-solving skills and strategic reasoning through a game like Rocket League. Although, this is not a peer reviewed source, it supports my topic by conveying the various ways that games can be applied to assist in student growth throughout schools and classrooms. It is also useful to educators to help them understand what kind of games can be applied to different subjects to maximize education potential. Since it only shows the effective ways to use gamification it should be supported with data when using it in the research paper.

Gui, Yang, et al. “Effectiveness of digital educational game and Game Design in STEM learning: A meta-analytic review.” International Journal of STEM Education, vol. 10, no. 1, 19 May 2023, https://doi.org/10.1186/s40594-023-00424-9.

This is a peer-reviewed meta-analytic review that combines 86 different studies to assess the impact of digital game-based STEM learning over traditional STEM learning with digital games. It also aims to investigate if adding game design to current versions of game-based learning can have an impact on the enhancement effect. It details the results of the two analytic reviews with the first one having an overall very positive general effect on STEM learning with gaming element. The second one conveys that added game design has an overall low effect over the current base versions. However, it conveys that game design did have a better effect on content learning over games based on game experience. This study features a large amount of information intake which could make it vary on being reliable or unreliable. It will help my research paper

because it provides strong evidence of the potential of digital games in education and the added importance of game design.

Marino, Matthew T., et al. “UDL in the Middle School Science Classroom: Can Video Games
and Alternative Text Heighten Engagement and Learning for Students with Learning Disabilities?” Learning Disability Quarterly, vol. 37, no. 2, 2014, pp. 87–99, https://doi.org/10.1177/0731948713503963.

This is a peer-reviewed study that is focused on examining whether incorporating games and alternative text can enhance engagement and learning for middle school students with learning disabilities. It compares a group with traditional learning with a group that is supported by gaming and Universal Design for Learning (UDL)-aligned resources. It tracks the differences of student engagement and performance between the two teaching processes. The findings in the study show that using the game design and supplemental text heightened student engagement and provided them with more ways of representation and expression. However, the study also noted that there weren’t many differences between test scores and student performance between the groups that had traditional instruction and video game supplemented instruction. This will be useful in my research because it provides evidence on video game enhanced learning. And shows a way that the path has been opened for gamification and instructional design frameworks.

Roediger, Amy. “Reflexing Our Math Muscles.” ReFlexing Our Math Muscles, 4 Aug. 2015, A Lever and a Place to Stand: ReFlexing our Math Muscles Accessed 14 Nov. 2025

In this blog post, the author describes herself using the online math learning platform “Reflex Math” to help her children practice math in the summer. The post explains how Reflex uses gaming elements like avatars, tokens, unlockable mini games, and timed drills to engage children. It motivates children to learn through showing math as a fun and playful experience. The author provides a real-life perspective of the improvement in fluency and speed over an 11-day period that using the platform has made to her child that has used it. This blog is not peer reviewed, instead it is a first person accounts which doesn’t hold much scholarly weight. However, it is a good representation of how gamification is applied to education and can assist with the motivation and engagement of learners. This will be useful in the research paper to discuss an example of how games have been applied to math and the advantages and disadvantages of it.

Schiner, Nick. “Game on: How to empower students to learn and play through gaming.” Digital Promise, 13 May 2022. https://digitalpromise.org/2022/01/06/game-on-how-to-empower-students-to-learn-and-play-through-gaming/ Accessed 14 Nov. 2025

This article details the position that gaming can have in the classroom and explores strategies that teachers can use to apply them. It highlights some effective methods such as aligning gameplay with learning objectives, using reflection prompts to connect gameplay with academics, and fostering student communication through choices and collaborative games. It is also helpful to teachers because it tells them about development resources they could use to integrate games with teaching. It is not a peer reviewed website, but it is produced by a ".org"/ non-profit organization website. So, its focus is less on trying to persuade you of something and instead more on providing accurate information, insight, and broad research areas. It will be useful in the research paper because it details actual ways that gamification can be integrated into education and illustrate how teachers can utilize game based activities to align with objective goals and student needs.

Team, Editorial. "Gamification in Education: Explore Its Benefits and Applications." Steps4Kids, 21 Mar. 2025, Gamification in Education: Explore its Benefits and Applications Accessed 14 Nov. 2025

This article explains the concept of gamification in education. I found the article when searching for the definition of gamification and how it can be applied to education. It details how game-based elements such as points, progress levels, rewards, and challenges can be used to increase student participation and motivation in the classroom. It highlights various advantages of gamification in education including increased engagement, allowing more personalized feedback, the ability to adapt to the learning objectives, and progress tracking for students. This source wasn't written to present academic data, but to assist teachers and parents in understanding the uses for it in education. This source isn't a peer reviewed article, but it does provide useful information about the application of gamification in schools. It should be supported by academic articles when used in the research paper, so that the information it provides can further be backed up. This source can also be used to describe common gamification strategies and give an explanation of why many educators incorporate it into their teaching.

Vankúš, Peter. "Influence of game-based learning in mathematics education on students'
affective domain: A systematic review." Mathematics, vol. 9, no. 9, 28 Apr. 2021, p. 986, https://doi.org/10.3390/math9090986.

This peer-reviewed article is a systematic review of research on game-based learning in mathematics education, that focuses on what effects it has on student's affective domain, which includes motivation, engagement, attitude, and flow. It uses a PRISMA statement to analyze 57 journal articles and reports that 84% have a positive effect of game-based learning on a student's affective domain. However, some mixed results

convey the importance of research design quality and thoughtful game implementation. It details that student qualities like engagement, motivation, and attitude are components for effective learning. In addition, it conveys that game-based instruction can support these qualities in addition to the gaining of better cognitive skills. This systematic review is good for my research paper because it conveys good evidence for the motivational benefits of game-based learning in math.

Wang, Liang-Hui, et al. “Effects of digital game-based STEM education on students’ learning achievement: A meta-analysis.” International Journal of STEM Education, vol. 9, no. 1, 17 Mar. 2022, https://doi.org/10.1186/s40594-022-00344-0.

This is a peer reviewed meta-analysis on the impacts of digital game-based learning on student achievement in STEM (science, technology, engineering, and mathematics) education. In the analysis, the author combines the results of 33 studies and conveys that digital game-based learning has an overall moderately positive effect compared to other traditional instructions. The analysis is a semi reliable source because it takes from other creditable sources to make a conclusion. However, it can also be considered unreliable for the same reason of it being taken from multiple sources, it is easy to misread or misinterpret information when taking from a bunch of sources. Overall, the research suggests that thoughtful integration of gamification can enhance student achievement in STEM subjects. Because of its strong evidence, it can be used in my research paper to help support that applying video games to different subjects have positive effect on student performance in it.