

REL Pacific Ask A REL Response

English Learners; Curriculum and Instruction
January 2021

Question:

Is there any research or guidance on improving English literacy or conducting English language education through digital gaming?

Response:

Following an established REL Pacific research protocol, we conducted a web-based search for resources related to English language education through digital gaming (see Methods section for search terms and resource selection criteria). Because the requestor represents a tertiary education system, we focused our search on college and university populations. Relevant articles with high school populations are, however, included. We also first prioritized studies in the Pacific and other Indigenous contexts for greater relevancy to our partners in the Pacific region; however, we included studies with more generalizable findings due to the limited amount of research available in these contexts.

References are listed in alphabetical order, not necessarily in order of relevance. Descriptions of the resources are quoted directly from the publication abstracts. We have not evaluated the quality of references and the resources provided in this response. We offer them only for your reference. Also, our search included the most commonly used research resources, but they are not comprehensive and other relevant references and resources may exist.

Research References

Apperley, T., & Beavis, C. (2011). Literacy into action: Digital games as action and text in the English and literacy classroom. *Pedagogies: An International Journal*, 6(2), 130–143.
<https://doi.org/10.1080/1554480X.2011.554620>

From the abstract: “Using data gathered from a three-year research project exploring digital literacy and pedagogy with respect to video games, including classroom games-based pedagogy and curriculum and ethnographic research on students’ digital game playing, this article locates and explores a key conceptual problem facing the incorporation of digital games into English and literacy classroom activities. This challenge is defined as ‘action’ and refers to the non-visual and non-textual elements of gameplay. This challenge is explored both theoretically and through a practical discussion of various strategies developed by teachers in the project to approach this issue. The article draws on contemporary game studies in order to map out and highlight several key areas where action-based projects lead to critical reflection.”

Chen, C. H., Shih, C. C., & Law, V. (2020). The effects of competition in digital game-based learning (DGBL): A meta-analysis. *Educational Technology Research and Development*, 68(4), 1855–1873.
<https://eric.ed.gov/?id=EJ1266151>

From the abstract: “Digital game-based learning (DGBL) is known to be widely used for improving learning in various fields. Among the elements of DGBL, competition has been very controversial. This meta-analysis, which included 25 articles written between 2008 and 2019, revealed that DGBL has produced improvements for learning outcomes with an overall effect size of 0.386. In addition, we explored multiple moderators to understand how competition in DGBL influenced student learning for different learners, contexts, game types, and learning outcomes. We found that competition in DGBL was effective for math, science and language, but not for social science and other subjects. It was effective for K12 students and college students. It was effective for puzzle, strategy, role-playing, and simulation, but not for action games. Finally, competition in DGBL was equally effective for cognitive and non-cognitive outcomes. Through the results of this study, we fill a critical gap in the research left by recent reviews, which do not examine the role of competition; a key gaming element. In addition, we offer a number of suggestions for future studies.”

Note: REL Pacific was unable to locate a free link to the full-text version of this resource. Although REL Pacific tries to provide publicly available resources whenever possible, this resource may be of sufficient interest to the reader to warrant finding it through university or public library systems.

Cornillie, F., Clarebout, G., & Desmet, P. (2012). Between learning and playing? Exploring learners’ perceptions of corrective feedback in an immersive game for English pragmatics. *ReCALL*, 24(3), 257–278. <https://eric.ed.gov/?id=EJ985860>; full text available at https://www.researchgate.net/publication/259425477_Between_learning_and_playing_Exploring_learners'_perceptions_of_corrective_feedback_in_an_immersive_game_for_English_pragmatics

From the abstract: “This paper aims to provide a rationale for the utility of corrective feedback (CF) in digital games designed for language learning, with specific reference to learners’ perceptions. Explicit and elaborate CF has the potential to increase learners’ understanding of language, but might not be found useful in a game-based learning environment where the primary focus for the learner is on meaningful interaction and experiential learning. Also, as CF can be perceived as a measure of performance, it could harm learners’ perception of competence. Eighty-three learners of English as a foreign language participated in a mixed-method experimental study that aimed to first explore the perceived usefulness of, and preferences for, explicit and implicit CF in an immersive educational game, and to secondly chart the relation between learners’ perceptions of CF as they pertain to three individual difference factors related to learners’ self-perception, namely intrinsic goal orientation, perceived competence and game experience. Survey and interview data showed that CF was found to be generally useful. A regression model indicated that the three measures of self-perception affected learners’ perceptions of explicit CF positively, and that there was no impact on perceptions of implicit CF. Further, learners reported having enjoyed the implicit CF, although they did not find it particularly useful for learning. These findings indicate that the type of CF should be considered in the design of effective and enjoyable educational games.”

Lee, M. (2019). “Her Story” or their own stories? Digital game-based learning, student creativity, and creative writing. *ReCALL*, 31(3), 238–254. <https://eric.ed.gov/?id=EJ1226280>.

From the abstract: “This qualitative study investigates a media transfer project in which a digital game was used to promote student creativity in an English as a foreign language (EFL) class. The paper first addresses the potential of opportunities for stimulating student creativity and motivation. Creativity has been highlighted as a core competency and has garnered considerable interest in many fields in recent years; however, creativity and creative writing are rarely cultivated

in EFL writing classrooms. This study uses a digital game and designs a creative writing project to provide an authentic learning opportunity through which students were able to develop their creativity, use the target language in a meaningful way, and enjoy learning. A murder mystery game, 'Her Story,' was selected because it provides a springboard for creative writing due to its fragmented and ambiguous narrative. Based on the game plot, 25 Korean university students reimagined the narrative in creative writing projects of their own. The study analyzes the students' writing according to three constructs in Torrance's model of creativity: originality, flexibility, and elaboration. The results demonstrate how the students' writing exhibits considerable creativity in all three constructs. Student reflection papers and surveys indicate that participating in the project enhanced the students' motivation for and engagement in learning."

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Rachayon, S., & Soontornwipast, K. (2019). The effects of task-based instruction using a digital game in a flipped learning environment on English oral communication ability of Thai undergraduate nursing students. *English Language Teaching*, 12(7), 12–32. <https://eric.ed.gov/?id=EJ1218677>

From the abstract: "The growth of Thailand's medical tourism industry has inevitably made English oral communication skills become increasingly important to Thai medical personnel, especially to nurses who have to act as medical mediators between doctors and patients. Thus, in order to prepare nursing students for their future career, it is necessary that English teachers find a way to help students improve their oral communication ability. Thus, in this study, as a means to overcome the students' difficulties in learning English and to enhance their English oral communication ability, the task-based instruction using a digital game in a flipped learning environment (TGF) was developed by integrating three language learning approaches, namely task-based language teaching, flipped learning, and digital game-based language learning. The development of the instructional framework for the TGF was described first. Then, to investigate its effectiveness in improving the students' oral communication ability, an experimental study, using a one-group pretest posttest design, was conducted with 23 second-year nursing students at a private university in Thailand for 11 weeks. The effects of the TGF on the students' oral communication ability were assessed by the participants' pre- and post-test. The finding revealed that the participants' average post-test score was statistically significantly higher than their average pre-test score ($p < 0.05$), indicating that the TGF was successful in enhancing the students' oral communication ability. Lastly, the factors contributing to this success were discussed."

Si, C., Zhang, S., Qi, G. Y., & Yang, J. (2020). Games literacy for teacher education: Towards the implementation of game-based learning. *Educational Technology & Society*, 23(2), 77–92. <https://eric.ed.gov/?id=EJ1261852>

From the abstract: "Game-based learning (GBL) has been widely recognised in research, and evidently benefited for learners. However, what GBL is perceived by teachers and learners has been a concern that might impact on quality of teaching and learning in the GBL environment. Game-based pedagogy meticulously designed from a teacher's perspective was regarded as harping on the same string without fun by learners. This paper aims to explore games literacy capabilities in supporting teachers to implement GBL that meets learners' needs and expectations. Semi-structured interviews and surveys with experienced teachers of GBL and experts in the relevant field

were conducted, followed by an Analytic Hierarchy Process seeking perceptions of a group of academics and researchers. Findings suggested five key capabilities in game literacy required by teachers in implementing GBL. They are (1) basic games literacy, (2) high-level games literacy, (3) instructional design for GBL, (4) organisation and management for GBL, and (5) evaluation of GBL. Amongst the five, instructional design for GBL and high-level games literacy were rated highly impacting on the quality of teaching. Based on the findings, aiming at informing teacher education and professional development, we proposed a framework providing a guidance to improve game-based design and pedagogical practices for teachers in the implementation of GBL in their classrooms. It concludes that teachers' capabilities in games literacy require specific attention to instructional design — that demands a thought-provoking process for GBL.”

Xu, Z., Chen, Z., Eutsler, L., Geng, Z., & Kogut, A. (2020). A scoping review of digital game-based technology on English language learning. *Educational Technology Research and Development*, 68(3), 877–904. <https://eric.ed.gov/?id=EJ1256268>

From the abstract: “Learning with games has been increasing in practice, but studies of the features and learning outcomes involving digital games to develop language learning are scarce. This scoping review investigates the current practices of digital game-based language learning to support English language learning, in terms of participants' characteristics, methodological features, gaming characteristics, and an association between game availability and gaming characteristics. Our results indicate: (1) vocabulary is the most dominant practiced language skills; (2) methods employed were primarily quantitative with researcher-designed tests; (3) commercial games contain the most elements of a good game; (4) use of good gaming elements is inconsistent among digital games. We provide strategies for educational researchers to improve their rigor in research, along with explicit criteria that digital game designers can apply toward language-learning game development. As educational technology continues to transform language learning, we emphasize the need for continued research and development that investigates how gaming elements in mobile learning environments may improve language-learning outcomes.”

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Additional Resources to Consult

Baek, Y. (Ed.). (2013). *Cases on digital game-based learning: Methods, models, and strategies: Methods, models, and strategies*. IGI Global. https://books.google.com/books/about/Cases_on_Digital_Game_Based_Learning_Met.html?id=W8ieBQAAQBAJ

Description from the publisher's website: “In K–12 classrooms, as well as on the college and university level, the incorporation of digital games has played a vital role in the educational system. While introducing teachers to new fields, these digital games have been designed and implemented for the classroom and have shown positive results at a variety of educational levels. *Cases on Digital Game-Based Learning: Methods, Models, and Strategies* analyzes the implementation of digital game applications for learning as well as addressing the challenges and pitfalls experienced. Providing strategies, advice and examples on adopting games into teaching, this collection of case studies is essential for teachers and instructors at various school levels in addition to researchers in game-based learning and pedagogic innovation.”

Dabbagh, N., Bass, R., Bishop, M., Picciano, A. G., Sparrow, J., Costelloe, S., Cummings, K., Freeman, B., Frye, M., Porowski, A., & Wilson, S. J. (2019). *Using technology to support postsecondary student learning: a practice guide for college and university administrators, advisors, and faculty* (Report No. WWC 20090001). What Works Clearinghouse. <https://eric.ed.gov/?id=ED594748>

From the abstract: “Despite increasing college enrollment and growing diversity of the college student population, college completion rates are low. Many colleges are exploring ways to leverage technology to improve student retention and increase the educational options for and success of their diverse student bodies. Web-based course or learning management systems and instructional technology centers can be found on almost every U.S. college campus. Colleges are even ranked based on the quality of their technology infrastructure and connectivity. Off campus, technology allowed more than six million college students to take online courses in the 2015–2016 school year. Colleges are using technology to improve the quality of student learning; make active and engaging learning available throughout institutional offerings; and help students become more successful learners. This practice guide, developed by the What Works Clearinghouse™ (WWC) in conjunction with an expert panel, focuses on promising uses of technologies associated with improving postsecondary student learning outcomes. This practice guide makes five evidence-based recommendations around how to use technology to support postsecondary learning. Each recommendation includes examples of technologies and how to implement them, advice on how to overcome potential obstacles, and a summary of the research evidence that supports the recommendation. It provides higher education instructors, instructional designers, administrators, and other staff with specific recommendations for supporting learning through the effective use of technology.”

Methods

Keywords and Search Strings

The following keywords and search strings were used to search the reference databases and other sources:

- “Digital gaming” and “literacy” and “Pacific”
- “Digital gaming” and “literacy”
- “Digital gaming” and “literacy” and “English Learners”
- “Digital gaming” and “literacy” and “English”
- “Digital game-based language learning”

Databases and Resources

We searched ERIC, a free online library of more than 1.6 million citations of education research sponsored by the Institute of Education Sciences, for relevant resources. Additionally, we searched the academic databases Taylor and Francis Online Journals, Google Scholar, and the commercial search engine Google.

Reference Search and Selection Criteria

REL Pacific searched ERIC and other academic journal databases for studies that were published in English-language peer-reviewed research journals within the last 10 years. Sources included in this document were last accessed in January 2021.

REL Pacific prioritized documents that are accessible online and publicly available, and prioritized references that provide practical information based on peer-reviewed research for the college leaders who requested this Ask A REL. For questions with small or nonexistent research bases, we may rely on, for example, white papers, guides, reviews in non-peer-reviewed journals, interviews with content specialists, and organization websites. Additional methodological priorities/considerations given in the review and selection of the references were:

- Study types—randomized control trials, quasi experiments, surveys, descriptive data analyses, literature reviews, etc.
- Target population, sample size, study duration, etc.
- Limitations, generalizability of the findings and conclusions, etc.

This memorandum is one in a series of quick-turnaround responses to specific questions posed by education stakeholders in the Pacific Region (American Samoa, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, Guam, Hawai'i, the Republic of the Marshall Islands, and the Republic of Palau), which is served by the Regional Educational Laboratory (REL Pacific) at McREL International. This memorandum was prepared by REL Pacific under a contract with the U.S. Department of Education's Institute of Education Sciences (IES), Contract ED-IES-17-C-0010, administered by McREL International. Its content does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.