

Technology-Enhanced Project-Based Learning for Emergent Bilingual Students

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Introduction

In a rapidly evolving digital landscape, the integration of technology into the educational realm has become more crucial than ever (U.S. Department of Education, Office of Educational Technology, 2010). Technology-Enhanced Project-Based Learning is an innovative educational approach that combines project-based learning with the integration of technology tools and resources. The Buck Institute for Education defines Project-Based Learning as “a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge,” (Buck Institute for Education, n.d.). Technology-Enhanced Project-Based Learning, or TEPBL for short, essentially allows students to engage in Project-Based Learning while leveraging technology tools to enhance their learning and skills acquisition. In other words, it provides students with immersive, hands-on experiences where they collaborate, problem-solve, and create meaningful projects and presentations using technology. Particularly for Emergent Bilingual/English Learner students, TEPBL presents a promising approach to facilitating language acquisition while fostering critical thinking and 21st-century skills.

An Emergent Bilingual or English Learner (EB or EL student) refers to a student who is in the process of acquiring proficiency in the English language while maintaining or developing their native or home language skills. Emergent Bilingual or English Learner students face the exciting, but oftentimes daunting challenge of learning English as an additional language and keeping up with academic content, thereby allowing them to engage in meaningful communication and academic tasks (in both social and academic contexts).

This literature review explores the effectiveness and benefits of TEPBL in increasing motivation, improving language proficiency, and the overall academic performance among EB

students. By examining a range of texts and studies, this review seeks to provide valuable insights into the potential positive impact of TEPBL in the context of English language education and acquisition for EB students.

Increasing the Motivation of Emergent Bilingual Students Using TEPBL

Motivation is the set of factors that initiate, direct, and sustain goal-oriented behavior. It is a complex phenomenon influenced by considerations like our goals, our beliefs about our abilities, and our emotions. Motivation plays a crucial role in the learning process of English learners, as it is the internal energy that drives them to persist in learning the language despite difficulties and setbacks.

Dörnyei (1988) states that motivation is a fundamental strength for students when learning a language. Additionally, according to Cambridge English, children with a positive attitude toward learning English are more likely to work hard and continue learning even when presented with difficult challenges (Cambridge English, n.d.). Motivation might come from various sources, including the desire to communicate in a new language, the need to meet academic requirements, or the benefits of learning about a new culture. There are several factors that could enhance a student's motivation, including the learning environment and the teaching methods used (Pintrich & Schunk, 2002).

TEPBL, which enables students to take an active role in their learning by working collaboratively and reflecting on their learning projects, in combination with effective teaching methods, is shown to be an effective approach to boosting motivation in EB/EL students. In “Effects of Project-Based Learning on Students' Motivation and Self-Efficacy,” Myeong-Hee Shin of Hannam University conducted a study to examine the impact of project-based learning on students' motivation and self-efficacy. The study involved seventy-nine students who were

taking an English elective course. The students were divided into thirteen teams, where each team had a common goal; to improve their English speaking and listening abilities (p. 102). Students were then assigned tasks within their teams to help achieve the shared objective. The project and presentation in this study involved video production in English where the topic was a resume and cover letter video that prepared students for future job interviews and required collaborative work among the individual student groups. Students completed the project without interference from the instructor but had the option of reaching out to the instructor via email or other networking platforms. The students proceeded to work together to address a real-world and authentic problem.

Students had to submit their projects YouTube or on their personal websites, and on presentation day, “each team shared their feedback and engaged in peer correction. Students also needed to complete the English motivation, self-efficacy, and participation of project-based learning questionnaire” (Shin, 2018).

The results of the study indicated that project-based learning positively influenced students' motivation to learn and cooperation skills. The students also expressed positive perceptions of project-based learning in a post-project survey.

Particularly, it showed that sub-factors of motivation influenced attitude and relevance.

Thus, in order for learning to happen, it was found that the students had to be interested in learning, and the relevance of the project must be related to the students' experience, purpose of learning, and real life. (p. 108).

It is important to note that the findings of the study also suggested the need for further research of a larger sample size to explore the effects of project-based learning on motivation and self-efficacy in different student groups.

In a different study, Rieg and Paquette (2009) presented the idea that ELs' decoding skills, fluency, vocabulary, syntactic knowledge, discourse knowledge, and metacognitive thinking could be enhanced through music, drama, movement, and readers' theater activities. These activities were a departure from standardized, summative tests and instead encouraged students to demonstrate a creative and arts-themed understanding of their learning. According to the authors, drama, and kinesthetic interpretations of learned content increased students' motivation and reduced their anxiety to learn academic material. With this in mind, we could synthesize that EB students might be more motivated to apply and demonstrate their learning to products and presentations that allow them to express themselves in a non-traditional, creative way. Incorporating technology into this can also facilitate authentic, meaningful, collaborative, and active learning environments (Henderson et al., 2010). For example, if EB students had a virtual language learning buddy/accountability partner in another class, school, or country where they could work together to make meaningful connections to learning while completing authentic, project-based activities.

Considerations for Technology and Motivation in Emergent Bilingual Students

The findings of the study from Shin above indicated that:

in order for learning to happen, it was found that the students had to be interested in learning, and the relevance of the project must be related to the students' experience, purpose of learning, and real life. [Also] In terms of self-efficacy, students who had low self-efficacy tended to avoid doing difficult class activities, while students with high self-efficacy tended to accept challenges. (p. 108)

In addition, Glenn Stockwell writes in "Technology and Motivation in English-Language Teaching and Learning" that Computer Assisted Language Learning (CALL), or the use of

computers to facilitate the learning of a second or foreign language, has the potential to demotivate ELs. He cites two studies conducted by Chen & Cheng (2008) and Castellano, Mynard and Rubesch (2011) in which CALL had negative effects. He also provided understanding into 'what is necessary to avoid unintentionally harming learners' motivation to study using technology' (p. 165). His determinations were to make sure learners have the necessary tech skills or language 2 (L2) proficiency to use technology, and to provide sufficient guidance and support throughout the learning process.

Improving English Language Proficiency of Emergent Bilingual Students

TEPBL provides learners with opportunities to engage in authentic and meaningful language practice that leads to proficiency. In an article entitled, "Enhancing the Writing Development of English Language Learners: Teacher Perceptions of Common Technology in Project-Based Learning," authors and Professors Teresa Foulger and Margarita Jimenez-Silva explored the role of technology in developing writing skills for English Learners within the context of project-based learning. The pair used a theoretical framework created by Professors Nancy L. Hadaway, Sylvia M. Vardell and Terrell A. Young that named seven teacher practices that support the skill of writing in EL students. The teacher practices are time and opportunity to write, a real reason for writing, a genuine audience, access to role models, a safe environment, useful feedback, and a sense of community (Hadaway, et al, 2002). Foulger and Jimenez-Silva sought to isolate technology supports within the framework.

The study included fourteen K-8 classroom teachers who reflected on specific classroom events where technology was used to support activities in which ELs wrote within a project-based environment. The authors analyzed the qualitative data from teachers and professional developers who supported them and concluded that the framework by Hadaway,

Vardell, and Young (2002) could be strengthened by integrating technology to expand their identified seven teacher practices for EL student writing.

The findings suggest that technology supports ELs in developing their writing skills by offering new avenues for collaboration and creation of content, and it enhances their writing skills by opening new learning opportunities. Teachers viewed technology as a facilitator of writing development, and this article highlights the potential of technology for writing development in ELs in project-based learning contexts.

Overall, the article offers valuable insights for teachers and administrators seeking to integrate technological tools into writing instruction and presents opportunities to advance ELs' writing skills. Moreover, the research findings may extend to different student populations aiming to amplify learning opportunities.

In “Becoming Little Scientists: Technologically-Enhanced Project-Based Language Learning” (2016), Melinda Dooly and Randal Sadler also demonstrated that TEPBL provides learners with opportunities to engage in authentic and meaningful language practice that leads to proficiency. This article detailed a 10-week study of young, beginner language learners in two different countries with two different languages, respectively. The study involved connecting the diverse ELs via video conferencing, immersing them in the use of the target language (English), and then providing ELs the opportunity to work on science-related projects that involved real-world problems, research, communication, and the use of technology. The technology and tools used to support learning and language practice included avatar representation of instructors, short video clips filmed in a virtual world called Second Life, online cartoon strips created in Bitstrips, and Skype. These resources provided visual and auditory support, making language input more comprehensible and engaging.

Dooly and Sadler's study demonstrated that authentic, technology-enhanced project-based activities facilitate the development of students' language skills while fostering problem-solving, critical thinking, and creativity. In addition, TEPBL fosters active and collaborative learning by promoting the use of language in realistic contexts.

The design of the project ensured that there was a real purpose for the students to use the target language (communicating real ideas) and also reinforced the use of English as a means of authentic communication with others who do not share the same language. The students soon came to realize that they had to use English as it was the only way to converse with their online peers. (Dooly & Sadler p.60)

A Focus on Academic Performance

TEPBL has proven to have an overall positive impact on student learning. Referring back to "Becoming Little Scientists: Technologically-Enhanced Project-Based Language Learning" (2016), at the end of the study, the ELs participated in an online talk show where they conversed with their virtual peers in English about the topics about which they had learned. The results from the show indicated that after engaging in TEPBL:

a majority of the class participants not only assimilated the core curricular objectives set by the teachers but also that several students were able to produce target language structures [in English] far beyond the expected output of learners at this age and level (e.g. the use of modality and the creative "free-form" reproduction of language structures in other contexts).

Similarly, "Revisiting the Effects of Project-Based Learning on Students' Academic Achievement: A Meta-Analysis Investigating Moderators" (Chen & Yang 2018) examines the impact of project-based learning (PBL) on students' academic achievement. The study utilized a

meta-analysis approach, which involved the systematic review and synthesis of existing research studies on the topic. Their comprehensive approach ensured that a broad scope of research involving 12,585 students in 189 schools from nine countries was considered and enhanced the credibility of their findings.

The pair found that overall, PBL had medium to large positive effects on students' academic achievement compared to traditional instructional approaches. Moreover, they identified some moderators that influence the magnitude of this effect. For example, they found that PBL is particularly beneficial for older students and those in higher educational levels. Additionally, the duration of PBL activities and the use of specific implementation strategies, such as information technology support and collaborative learning, can enhance its effectiveness further.

The findings of this research article highlight the importance of project-based learning in promoting academic achievement while effectively using technology as a support. Their research shows the promise TEPBL has to increase educational outcomes for all students and for Emergent Bilingual/English Learner students in particular.

Conclusion

TEPBL has been shown to increase motivation among EB students by creating a meaningful and authentic learning experience that taps into their interests. This intrinsically motivates EB students by providing them with a purposeful and engaging context for learning. TEPBL has also been found to enhance language proficiency among EB students through interactive digital tools that provide opportunities for immersive language experiences. The use of technology also facilitates authentic and meaningful language use, allowing students to improve their listening, speaking, reading, and writing abilities. Lastly, TEPBL has demonstrated

positive effects on the overall academic performance of EB students by promoting critical thinking, problem-solving, collaboration, and creativity. These skills are essential for academic success across various subjects and enable EB students to demonstrate their knowledge and understanding in engaging and authentic ways.

The successful implementation of TEPBL for EB students requires careful consideration of their linguistic and cultural backgrounds, as well as individual learning needs. Educators must provide appropriate linguistic support, technology support, scaffold instruction, and ensure equitable access to technology resources to maximize the benefits of TEPBL for EB students. TEPBL offers tremendous potential to transform the educational experiences of English Learner students by increasing motivation, improving language proficiency, and enhancing overall academic performance. By embracing TEPBL, educators can create engaging learning environments that empower EL students and equip them with the skills needed for success in both academic and real-world contexts.

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