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Implementing Project-Based Language Learning and Teaching in Classrooms: EFL Teachers' Perspectives

Ram Bahadur Mouni

Durgalaxmi Multiple Campus, Far Western University, Nepal

Corresponding Author: *Ram Bahadur Mouni*, Email: ram.fwu3886@gmail.com

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Abstract

This study explores secondary level English as a foreign language (EFL) teachers' perceptions about Project-Based Language Teaching (PBLT) in terms of its benefits in EFL classrooms. Moreover, it investigates the challenges EFL teachers face while implementing it in English language instruction and recommends the solutions as perceived by the EFL teachers in the EFL context of Nepal. Backing up with theoretical perspectives on PBLT approach, this study adopts phenomenological qualitative research design to analyze the data obtained from the in-depth interviews conducted with three secondary level EFL teachers from three schools of Kailali district of Nepal. This study reveals that even though EFL teachers have knowledge about the importance and benefits of using PBLT in English language teaching, they still face some ideological, pedagogical and operational challenges in effective implementation of PBLT in classrooms. However, the EFL teachers suggest some solutions to overcome the challenges for successful implementation of PBLT for better language teaching and learning.

Keywords: learner-centred, instruction, pedagogical challenges, approach

Introduction

Recently, academic institutions have been making efforts to develop both hard and soft skills of language in the students. Hard skills include skills related to professional knowledge and knowledge that help to understand meaning (cognitive knowledge) and soft skills include skills required for social and group interaction and solving the communicative problems the students face in their daily life (Guo et al., 2020). However, achieving the goals related to such skills is not possible through traditional language teaching approaches. Even though modern learner

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centered approaches may address the issues related to hard and soft skills of language, Project-Based Language Teaching and Learning (PBLT) seems to be more efficient in developing cognitive and professional knowledge skills through team work and problem solving approaches. The popularity and influence of PBLT lies in its possibility of developing language skills that are required to the students to cope up with challenges in the 21st century. PBLT engages students to the real world tasks through the diverse projects they involve in while learning in and outside the classroom (Bell, 2010; Han et al., 2015). Similarly, Thomas (2010) claims that PBLT is not only beneficial for the students but also facilitates the teachers for their personal and professional development. In the same line, Han et al. (2015) and Kokotsaki et al. (2016) assert that earlier research shows PBLT is an effective approach to language teaching and learning. However, its success depends on how teachers understand and select criteria to successfully implement PBLT in the classroom. The selection criteria of PBLT directly incorporate with the students' development of language skills and knowledge of content. Thomas (2010) argues that the research is inadequate about the challenges faced by teachers in developing and implementing PBLT by themselves. Therefore, carrying out further research to investigate the benefits and the challenges of PBLT from the perspective of active EFL teachers seems to be essential for promoting use of PBL in the classroom practices.

Even though PBLT provides students with the opportunity to learn a language as a whole, especially English as a foreign language, 'through interactive way connecting students with communicative language teaching and learning' (Brown & Lee, 2015) and through 'learning by doing' (Dewey, 1915) connecting task based language learning, Thomas (2010) argues that studies on PBLT do not still have remarkable effects in the actual practice of PBLT in the classroom. He further argues researches are inadequate to explore the difficulties the EFL teachers face while designing and implementing PBLT by themselves in the classroom. The challenges primarily emerge from two perspectives: educating EFL teachers to effectively use PBL in the classrooms (Beckett, 2002 cited in Grant, 2017) and EFL teachers' constraints/reluctance to use PBLT in real classroom teaching and learning. Such challenges in PBLT are also prevalent in EFL context of Nepal as well. Hence, carrying out further research to investigate the benefits and the challenges of PBLT from the perspective of active EFL teachers seems to be essential for promoting use of PBL in the classroom practices in the context of Nepal.

The purposes of this study are to investigate perceptions of secondary level EFL teachers on how PBLT facilitates in ELT, what challenges they encounter while implementing PBLT in the classroom and how they overcome such challenges in

the context of Nepal. To achieve the purposes, the study answers these research questions:

1. How do EFL teachers perceive PBLT in English language teaching?
2. What are the challenges faced by the secondary level EFL teachers while implementing it in the EFL classroom?
3. How do they address these challenges?

Literature Review

This section primarily deals with the theoretical overview of conceptualization of PBLT, benefits and challenges that occur while implementing PBLT in different EFL/ELT contexts. This theoretical overview gives theoretical back for analysis and discussion for the data collected for the research. Even though the theoretical underpinnings discussed in this section are from different contexts and time, the insights obtained from the review of such theories are relevant to ELT research in the context of Nepal as well.

Conceptualizing PBLT

Scholars have defined and interpreted PBLT in different contexts. However, they seem to have a similar notion to it and they use similar philosophical and theoretical backgrounds for it. In project based teaching and learning as, Blank (1997, cited in Railsback, 2002) asserts, students have the opportunity to involve in making plans for projects, executing these projects in the classroom and evaluate their own projects which have real life application beyond the classroom. Similarly, project based instructional strategies, as Railsback (2002) states, are connected to several theories such as, ‘constructivist approach’ of Lev Vygotsky, Jerome Bruner, Jean Piaget and John Dewey. Karlin and Vianni (2001) opine learning as an outcome of ‘mental construction’ i.e. the learners learn through the construction of new ideas or concepts based on their present and prior knowledge. Similarly, Ravitz (2010) states that PBLT makes use of various kinds of ‘projects’ as tools to motivate students towards learning along with the presentation and demonstration of the language skills that the students have learned. Thus PBLT is said to be based on ‘constructivism. However, Guo et al. (2020), Barron and Darling-Hammond (2008) and Savery (2006) argue that PBLT is rather based on problem solving, and inquiry based teaching and learning approaches than the constructivism. The scholars use the ‘problem-based and ‘inquiry-based’ method interchangeably. Similarly, Krajcik and Shin (2014) indicate six hallmarks of PBLT which include a driving question, the focus on learning goals, participation in educational activities, collaboration among students, the use of scaffolding technologies, and the creation of tangible artifacts.

Similarly, Cocco (2006) describes project-based learning as a student-centered form of instruction which is basically based on three constructivist principles: first, learning is context-specific; second, learners are involved actively in the learning process and they achieve their goals through social interactions and the sharing of knowledge and understanding. Similarly, Al-Balushi and Al-Aamri (2014) opine that PBLT is considered to be a particular type of inquiry-based learning where the context of learning is provided through authentic questions and problems within real-world practices that lead to meaningful learning experiences (Wurdinger et al., 2007). However, Kokotsaki et al. (2016) argue that freedom and challenge that students experience as a result of solving the problems that arise in designing and building their projects result in 'high levels of student engagement' (Wurdinger et al., 2007) due to the cognitive challenge as well as the strong affective, ethical and aesthetic dimensions that form part of a well-designed project.

Gibbs and Carson (2013), on the other hand, perceive PBLT as a formal language teaching approach which traces back to Dewey's practical method of learning that is based on the principle of "learning by doing" (Dewey, 1915), Kilpatrick's (1918) project method and subsequent approaches to progressive education. Similarly, Hedge (1993) informs that PBLT began in the mid-1970s as a response to pedagogical theories of learner-centered teaching, learner autonomy, the negotiated syllabus, collaborative learning, and learning through tasks. PBLT has also been compared with other pedagogical practices such as experiential or collaborative learning. In this context, Helle et al. (2006) argue, project work is a collaborative form of learning as all participants need to contribute to the shared outcome and has elements of experiential learning with active reflection and conscious engagement rather than passive experiences being essential.

Benefits of PBLT

According to Han et al. (2015), the common goal for PBL is to help students acquire deeper content knowledge, skills as well as feelings of commitment and ownership of their learning. This requires active engagement of students' effort over an extended period of time. Scholars have clear views that PBLT is an effective method of teaching and learning in general and second language teaching and learning in particular. It is considered to be effective in sense that it incorporates social, cognitive and professional development of a learner through the projects, collaboration, motivation and learner autonomy. On this, Aksela and Haatainen (2020) claim that learning responsibility, goal setting, independence, and discipline are outcomes of PBLT. It promotes social learning as children practice and become proficient with the twenty "first- century skills" (Bell, 2010) of communication, negotiation, and collaboration. Implementation of PBLT allows children to discover

who they are as learners. It is important for the teacher to confer with students regularly to ensure that students are on track and developing their ideas and skills fully. Similarly, Bell (2010) asserts that these skills are critical for future success in both school and life. He further argues that PBLT promotes links among subject matter disciplines and presents an expanded, rather than narrow, view of subject matter. In the same line, Blumenfeld et al. (1991) opine that projects are adaptable to different types of learners and learning situations. Similarly, some studies on PBLT report unintended, beneficial consequences associated with its experiences: enhanced professionalism and collaboration on the part of teachers and increased attendance, self-reliance, and improved attitudes towards learning on the part of students (Thomas, 2010).

Challenges of PBLT

Even though there are a number of benefits of implementing PBLT in second language learning, there are some common barriers in implementing PBLT effectively. Such barriers include teachers' resistance to student-driven learning because they often see this as giving up control of the class. According to Mentzer et al. (2017), teachers with little practice on PBLT are more prone to resist the idea that students should self-determine their own the important concepts of the lesson. In this context, Aksela and Haatainen (2020) state that the other barriers with the implementation of PBLT are teachers' confusion on inquiry-based instruction with hands-on activities, inability to motivate students to work in collaborative learning, scaffolding instructions, the development of authentic assessments and overcoming student resistance to employing critical thinking. Similarly, Mentzer et al. (2017) mention that time issues, granting students sufficient autonomy and understanding what this entails as well as melding required curriculum with PBL are noted as barriers in PBLT research.

The previous studies reveal, as Thomas (2010) claims, that there are evidences that PBLT is beneficial both for teachers and students. Similarly, earlier researches show that teachers' understanding of the criteria for effective PBLT plays an essential role in how teachers implement PBLT, thereby also affecting students' content understanding and developing skills (Han et al., 2015; Kokotsaki et al., 2016). However, research studies on the challenges experienced by teachers in developing and enacting PBLT on their own, as Thomas (2010) argues, are inadequate. Therefore, more research work is required in exploring the benefits and the challenges of PBLT from the perspective of active teachers in order to promote the use of PBLT in practice.

Methods and Procedures

This study is based on phenomenological qualitative research design. It tries to explore secondary level EFL teachers' perceptions about the effective implementation of PBLT in Nepalese classrooms as a recent phenomenon of English language teaching. To fulfil the purpose of the study, the researcher selected three secondary level schools, two community schools located at Godawari Municipality and Kailari Rural Municipality and one private school located at Tikapur Municipality of Kailali district based on convenient sampling as the area of the study. The selected schools were coded as SSS for first school, JSS for second school and USS for the last school considering ethical issues. After selecting the schools, the researcher selected three secondary level EFL teachers (each from one school) who have been teaching English for more than ten years. The selected teachers were also coded as P1, P2 and P3 to maintain the research ethics.

As data collection technique, in-depth interviews were taken with the participants for obtaining information and semi-structured interview was conducted to obtain additional information. All of the participants were physically approached and interviewed for 20 minutes each to collect the data for the research. All the interviews were audio recorded by taking consent from the participants. Additional information was collected through telephone conversation. The participants (as they are EFL teachers) felt comfortable to give interview in English language even though the researcher offered them both Nepali and English language for the interview. The data were noted, recorded on mobile phone recorder, and the transcribed in written format. Then, the data were presented, discussed and analyzed qualitatively.

Findings and Discussion

Since the purposes of this study are to explore the EFL teachers' perception on how PBLT facilitates ELT in Nepalese context, what challenges the EFL teachers face in implementing PBLT in the classrooms and how they overcome the challenges, the data collected from the participants are discussed into three categories: factors facilitating English language teaching in PBLT, the challenges, and addressing the challenges. However, before presenting these three-category analysis, it is relevant to present the EFL teachers' knowledge about PBLT. During the interview, I first asked the participants about their understanding and knowledge on PBLT. The participants responded:

P1: PBLT is a learner based teaching approach which is based on learning by doing philosophy. It believes that language skills can be best learnt in a real context. Thus, students are given small projects to work on with the aim of developing particular language skills.

The response on the perception of PBLT from P1 reflects the Dewey's (1915) concept of 'learning by doing' philosophy. Further the response shows that real context is a significant factor that facilitates learning English as a second language. Additionally, the participant perceives that PBLT helps in developing the language skills in the learners through the 'projects' (Ravitz, 2010) assigned to them during teaching and learning.

P2: Project-based language teaching and learning means giving students a project to teach the language and the students complete any task based on that project work. It helps students to learn the language in collaboration. It not only helps to learn any language but also helps to gain knowledge about the culture of people who speak different languages.

Similarly, P2 agrees with the perception of P1 in that better language learning takes place through projects. However, P2 states that the projects the learners should complete should be 'based on tasks' (Thomas, 2010). The response of P2 also reflects that learning is more 'collaborative' (Helle et al., 2006) in PBLT which is also aligned with knowledge of culture as well.

P3: PBLT is a pedagogical method of teaching and learning. It is basically a student centered method where students learn by themselves by engaging in some project works.

The response about PBLT from P3 is similar to the perception of P1 and P2 in terms of using projects for language learning. Additionally, P3 perceives that PBLT as 'pedagogical' and 'student-centered' (Cocco, 2006) approach to language learning.

These responses from the participants EFL teachers show that they have a good knowledge about PBLT. They perceive PBLT as learner-centered approach as described by Cocco (2006), a pedagogical method of language teaching as described by Gibbs and Carson (2013) and a 'collaborative learning' (Helle, 2006) which involves projects (Kilpatrick, 1918) for developing language skills. The projects are based on problem solving, learning by doing (Dewey 1915). This knowledge of participant EFL teachers shows that they are capable in understanding and using PBLT in ELT in the Nepalese context. However, none of the participants specified the language items they use PBLT for, frequency and patterns of using PBLT in their classrooms. They responded that they sometimes/ occasionally use PBLT in the ELT classes.

Factors Facilitating ELT in PBLT

The second question of the interview was about how PBLT facilitates ELT in the classes of the participant teachers. The interview revealed that there are a number of factors in PBLT that facilitate ELT in the classroom. One facilitating factor they perceived is high quality collaborative group work which involves learning from each other and learning by doing. In this context, P2 replied:

Project-based language teaching and learning opens the way for students to learn languages together. They learn by doing and the learning retention is long. They also get knowledge about each other's language and culture. It promotes the collaborative learning and they know the true meaning of group work and collaboration as it is based on 'win-win' principle.

The response from P2 informs that PBLT provides students with the opportunity to work and learn in the group. Learning in group through the projects can develop interactive and equal participation, individual responsibility for learning and reciprocal learning skills. Such skills facilitate the students in collaboration through projects they perform (Cheng, et al., 2008). Moreover, using PBLT in the classroom can minimize the issues related to 'social class, power relation and gender differences' through equal participation and meaningful collaboration. As a result, students can feel more comfortable in learning. However, Crossouard (2012) argues that teachers' role is significant in supporting the students for group work and collaboration, developing sense of responsibility, and mitigating the issues related to equity and equality in learning. Thus, PBLT helps to enhance equity, equality and motivation in learning which creates 'a win-win' situation for the students of diverse potential and contexts.

Apart from the group process and collaboration, the participant EFL teachers perceived that use of technology can be a motivating factor that can enhance ELT in the classroom. Regarding using technology as facilitating factor in PBLT, P3 responded:

It makes the learners autonomous in learning. it can even make language learning more effective if technology is used to handle the project works. Students feel themselves responsible in teaching learning process and can improve learning.

Modern Technology in ELT can provide learner autonomy and responsibility to improve the learning of the students. Technology functions as an effective tool for planning, designing and performing the projects. Additionally, students can share their tasks among the group or class in a convenient way using the digital technology which can even increase their responsibility, confidence and presentation and

communication skills (Patton, 2012). However, for effective use of technology in PBLT, Bell (2010) insists that a proper support and guidance is necessary for the students to handle the technology for better learning.

Similarly, the other facilitating factor in ELT through PBLT is the teachers' skill to address the learning issues of the learners, skills to create real-life situations for projects, skills to support and guide the students properly and skills to collaborate with their colleagues. In this regard, P1 responded:

PBLT requires teachers' support to engage in the real life situation, it motivates students to use language in real life environment. All language skills are given equal importance and students are also actively involved in the activities which lead them to successful language learning.

Teacher's professional and personal skills are essential to facilitate students to involve in successful language learning in the classroom and in the real life as well. Effective scaffolded instruction within high-quality experiences will help reduce students' "cognitive load" (Hmelo-Silver et al., 2007), will enable them to make small successful steps and ultimately achieve "cognitive growth just beyond their reach" (Bell, 2010, p.41).

Challenges in Implementing PBLT

The third issue I discussed with the participant EFL teacher was the challenges they face while using PBLT in their language classes. Even though all the participants used different words, they indicated the similar kinds of challenges. In response to the question related to the challenges, the participant EFL teachers responded:

P1: Low language proficiency of the students is the main challenge. Similarly, it is time consuming and mostly active and talent students dominate the activity.

During the interview regarding the challenges in implementing PBLT in the classroom, P1 states that he had to basically face three types of challenges that hinder true implementation of PBLT, first, low proficiency of the learners in English language. Second is related to management of time and the third one is the issue related to the students' personality and performance; active students dominate the learning.

P2: The hardest part is getting the students to speak because they don't know the English language well and because of that they can't participate openly. Some students have a shy nature which stops them to give their best in learning. Similarly, some students do not like to work in groups.

Even though P2 uses different words, the challenges regarding students' language proficiency and personality faced by him in implementing PBLT in the classroom are similar. However, P2 does not perceive time management a significant factor as a challenge in PBLT. Instead he opines that some students (e.g. Shy and introvert students) may not like to work in group because of their personality constraints.

P3: The main challenges are- it is time consuming and all the students do not equally take part in the project works. Some of them can cheat in collaborative works.

In response to the questions related to challenges, P3 has also similar views to P1 and P2. However, P3 opines that wrong intention of the students (e. g. cheating) can be a barrier in implementing PBLT in the classroom.

The responses from all participant EFL teachers reveal that there are basically three challenges the teachers face in implementing PBLT in classroom practice. The first issue is related to the learners' proficiency over English language. The responses show that students having low proficiency in language skills are less or not interested to take part in collaboration, self-learning, learning through problem-solving approach and 'learning by doing' (Dewey, 2015). Students with high proficiency over the language, on the other hand, dominate the learning processes and activities. This creates a divide between stronger and weaker students which hinders the successful implementation of PBLT. The second issue is 'time management. All of the participant EFL teachers perceived that using PBLT is time consuming. It is challenging to design the project, assigning the projects to the students and evaluating the projects and students within a certain period of time for English language teaching. The third issue perceived by all participants is personality constraints. They perceive that shy and introvert learners are less likely to take part in collaborative and group learning process. Some learners even cheat on the assigned tasks. Active and extrovert students, on the other hand, dominate, hence discourage other learners in collaboration and group processes. These challenges are not only specific to this research context, but also prevalent in all EFL/ELT contexts. However, the participants did not talk about the challenges related to ELT resources, teacher professional development and technology.

Recommendation for Solutions to the Challenges

The theme for final question in the interview was the solution to the challenges. The participant EFL teachers were asked how they think the challenges in PBLT can be overcome. They responded:

P1: *I motivate the weak students to contribute as much as they can. I also give the students freedom to choose the project by themselves. I suggest them to help each other to learn language. Similarly, I ask them to conduct the project during holidays and present them in the classroom next day.*

Regarding the suggestion for overcoming the challenges in implementing PBLT in the classroom, P1 views that motivation in learning, freedom of choosing projects and time and providing learner autonomy can reduce the challenges and contribute to effective implementation of PBLT and better learning.

P2: *Students should first be provided autonomy and knowledge about project work and then they should be advised not to be shy. They should also be taught that if they work in a group, they can learn well and learn from others. The teacher should also facilitate them in difficult situations.*

In the same question, P2 agrees with the responses of P1 that learner freedom, autonomy and motivation are crucial factors in overcoming the challenges in implementing PBLT. However, P2 further adds that informing students the value of group work (student support to each other) and teachers' facilitation are even more effective ways to deal with the challenges in PBLT.

P3: *We can assign them individual tasks or even group tasks. We should make sure that everyone is actively taking part in the group task.*

In the similar context, P3 on the other hand, opines that individual treatment to the to the students and teachers' support to the students in terms of assigning the tasks/projects and in terms of their active participation is necessary for minimizing the issues linked with the implementation of PBLT in teaching and learning of English language.

The responses from all participant EFL teachers suggested some solutions. The solutions include, student support, teacher support, effective group work, balance between didactic instruction with independent inquiry method, assessment, emphasis on reflection, self and peer evaluation, and student choice and autonomy. According to Kokotsaki et al. (2016), technology in language learning can be fully utilized by encouraging students in self-management, fostering support and guidance, making conscious about time management and allowing students to handle the technology in a reasonable way. Similarly, regular guidance from teachers is needed through regular networking and professional development opportunities. The support from the school senior management is crucial. High quality group work will help ensure that students share equal levels of agency and participation (Guo et al., 2020). Moreover, balance between didactic instruction with independent inquiry

method work will ensure that students develop a certain level of knowledge and skills before being comfortably engaged in independent work. Evidence of progress needs to be regularly monitored and recorded (Kokotsaki et al., 2016). Finally, student choice and autonomy throughout the project-based learning process will help students develop a sense of ownership and control over their learning.

Conclusion

Even though PBLT provides students with the opportunity to learn a language as a whole, especially English as a foreign/second language, through interactive way connecting students with communicative language teaching and learning and through learning by doing connecting task based language learning, there are EFL teachers' constraints/reluctance to use PBLT in real classroom teaching and learning which are consequently, creating problems in language instruction of EFL/ESL in Nepalese classrooms. Based on these issues, the analysis of data in this research explore secondary level EFL teachers' perceptions in PBLT, challenges they encounter while implementing PBLT in classroom and how they overcome such challenges in the context of Nepal. The paper reveals that all the participant teachers are well informed about the importance and role of PBLT in ELT. However, they do not use it as a major ELT method or strategy in the classroom on regular basis. Hence, PBLT is not seen to be properly implemented in Nepalese schools. The paper reveals the challenges the EFL teachers face while implementing PBLT in the classroom such as, learners' low proficiency in English language, management of time and personality constraints of the learners. However, the EFL teachers are aware of minimizing the challenges they encounter while using PBLT as a method of ELT. The solution they recommend include the reasonable group activities, teacher and student support, self and peer evaluation, assessment emphasis on reflection, balance between didactic instruction with independent inquiry method, and student choice and autonomy.

Even though the previous studies reveal that PBLT is an effective method of teaching and language teaching for developing both cognitive and professional skills in the learners, the effective implementation of it is still problematic. Since, this study analyzes limited data and covers limited context of EFL, the results cannot represent overall issues of PBLT as an English language teaching method. However, the findings can be helpful for opening more space for further researches in the field of ELT. Similarly, the perception, issues and solutions on PBLT discussed in the paper may give an insight to the ELT practitioners and students for effective teaching and learning.

References

- Aksela, M., & Haatainen, O. (2019). *Project-based learning (PBL) in practice: Active teachers' views of its advantages and challenges*. A Conference Paper. <https://www.researchgate.net/publication/333868087>.
- Al-Balushi, S.M., & Al-Aamri, S.S. (2014). The effect of environmental science projects on students' environmental knowledge and science attitudes. *International Research in Geographical & Environmental Education*, 23(3), 213-227.
- Bell, S. (2010). Project-based learning for the 21st century: Skills for the future. *A Journal of Educational Strategies, Issues and Ideas*, 83(2), 39-43.
- Blumenfeld, P.C., Soloway, E., Marx, R.W, Krajcik, J.S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: sustaining the doing, supporting the learning. *Educational Psychologist*, 26, 369-398.
- Cocco, S. (2006). *Student leadership development: the contribution of project-based learning*. [Unpublished Master's thesis]. Royal Roads University, Victoria, BC.
- Crossouard, B. (2012). Absent presences: the recognition of social class and gender dimensions within peer assessment interactions. *British Educational Research Journal*, 38(5), 731-748.
- Dewey, J., & Dewey, E. (1915). *Schools of To-morrow*. J. M. Dent & Sons, Ltd.
- Dewey, J. (1959). *My pedagogic creed*. In M. Dworkin (Ed.), *Dewey on education*. Columbia University.
- Gibbes, M., & Carson, L. (2014). Project-based language learning: An activity theory analysis. *Innovation in Language Learning and Teaching*, 8(2), 171-189.
- Guo, P., Saab, N., Post, L. S., & Admiraal, W. (2020). A review of project-based learning in higher education: Student outcomes and measures. *International Journal of Educational Research*, 102, 101586.
- Han, S.Y., Yalvac, B., Capraro, M. M., & Capraro, R.M. (2015). In-service teachers' implementation and understanding of STEM Project Based Learning. *Eurasia Journal of Mathematics, Science and Technology Education*, 11(1), 63-76.
- Helle, L., Tynjälä, P., & Olkinuora, E. (2006). Project-based learning in post-secondary education – theory, practice and rubber sling shots. *Higher Education*, 51, 287-314.

- Hernández-Ramos, P., & De La Paz, S. (2009). Learning history in middle school by designing multimedia in a project-based learning experience. *Journal of Research on Technology in Education*, 42(2), 151-173.
- Hernández, T. (2011). Re-examining the role of explicit instruction and input flood on the acquisition of Spanish discourse markers. *Language Teaching Research*, 15(2), 159–182.
- Hmelo-Silver, C.E., Duncan, R.G., & Chinn, C.A. (2007). Scaffolding and achievement in problem-based and inquiry learning: a response to Kirschner, Sweller and Clark (2006). *Educational Psychologist*, 42(2), 99-107.
- Kilpatrick, W. (1918). The project method. *Teachers College Record*, 19, 319-334.
- Kokotsaki, D., Menzies, V., & Wiggins, A. (2016). Project-based learning: A review of the literature. *Improving Schools*, 19(3), 267–277.
- Krajcik, J.S., Blumenfeld, P.C., Marx, R.W., & Soloway, E. (1994). A collaborative model for helping middle grade science teachers learn project-based instruction. *The Elementary School Journal*, 94 (5), 483-497.
- Mentzer, G.A., Czerniak, C. M., & Brooks, L. (2017). An examination of teacher understanding of project based science as a result of participating in an extended Professional development program: Implications for Implementation. *School Science and Mathematics*, 117(1-2), 76-86.
- Railsback, J. (2002). *Project-based instruction: Creating excitement for learning*. Request Series.
- Ravitz, J. (2010). Beyond changing culture in small high schools: reform models and changing instruction with project-based learning. *Peabody Journal of Education*, 85, 290-312.
- Rieber, R. W., & Wollock, J. (1997). The methods of reflexological and psychological investigation. In *The collected works of LS Vygotsky* (pp. 35-49). Springer, Boston, MA.
- Wurdinger, S., Haar, J., Hugg, R., & Bezon, J. (2007). A qualitative study using project-based learning in a mainstream middle school. *Improving Schools*, 10(2), 150-161.