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Nurturing Learning and Engagement Through Student Perceptions of Project-Based Learning

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Abstract

Project-Based Learning (PBL) refers to an instructional approach where students engage in exploring and solving real-world, complex problems over an extended period. The present study aims to explore the impacts of project-based learning in nurturing student learning and engagement in Kurdish EFL high school context. The design of the study followed a descriptive approach using quantitative methods. The population of the study comprised 364 high school learners from grades 10, 11, and 12 in one of the public schools in Sulaymaniyah, Kurdistan region of Iraq. The data was analyzed through the Statistical Package of Social Sciences (SPSS). The independent sample t-test was employed to investigate the differences between male and female participants. Furthermore, ANOVA one-way was utilized to assess the variations among academic levels. The findings suggested that gender does not have a direct impact on experiences and attitudes of the learners towards PBL. Conversely, there is a significant difference between male and female in students' perceptions in perceived benefits of PBL. Regarding the academic levels, there is a significant difference between grade 10 and 11 and grade 12 in both categories. These outcomes offer insights to teachers and educators to implement project-based learning in educational practices in various teaching environments. .

1. Introduction

In the past few years, educational institutions have been offering learners both hard skills, that is knowledge by acquaintance (Vogler et al., 2018), and soft skills, namely collaboration, teamwork, and problem solving (Casner-Lotto & Barrington, 2006). Therefore, these interconnected skill targets are not easy to be accomplished since conventional learning environments have a predominant role that educators are the "transmitter of knowledge", and the learners are "the receptor of the information" (Alorda et al., 2011, p. 1876). Consequently, it is complicated for learners to be fully involved in the pedagogical practices, which might result in peripheral understandings of disciplinal knowledge (Alacapınar, 2008). Project-based learning (PBL) is an approach of teaching to nurture learners through involving various types of activities

in educational practices (Chiang & Lee, 2016). PBL is an energetic teaching method where learners are thoroughly examine the genuine issues and obstacles in classroom (Krajcik & Blumenfeld, 2006). PBL comprises engaging learners in designing learning experiences, hands-on learning practices, and building student-centered learning environments. The academic importance of PBL is to establish groundbreaking potential through teamwork, collaboration, and self-directed education (Guo et al., 2020).

High school learners in the Kurdish context are experiencing a crucial moment in their academic life, especially the learners in grade 10 through grade 12. Academic prospects have a growing tendency for the learners when transforming from middle school to high school, particularly in grade 12. One of the distinctive features of grade 12 in Kurdish education is the whole 12 years of studying at schools depend solely on that grade and based on the grades they achieve; they are admitted to university departments. Learners' answers to diverse teaching styles might be influenced by these tensions. Therefore, PBL has the potential to enhance the students' involvement and improve results; it is not preferrable by the learners to work collaboratively, the whole idea of grade 12 focuses on individualism in studying for the final exams. There is lack of investigation on the implementation of PBL in Kurdish context and its impact on high school students – the way they see this innovative approach of teaching/learning.

The aim of the present study is to assess the efficiency of a PBL strategy in opposition to a more traditional teacher directed learning strategy which is a topic-focused approach. Based on studies, PBL could promote the learners' focus, leading to permanent knowledge, and thorough learning. PBL has the potential to alter learners' viewpoints towards the sort of information and scientific research and improve their own learning process to think out of the box. Furthermore, it pursues to examine the way Kurdish EFL learners in grades 10, 11, and 12 discern PBL unlike other approaches. Therefore, there might be numerous obstacles in applying PBL in the Kurdish EFL context. High school education in Kurdistan has always been built on teacher-led education that emphasizes rote learning, memorization, and exam-based pedagogical practices. The vital requirements of learning a second/foreign language might not be completely convinced through traditional approaches. Consequently, there is an increasing concern in examining substitute strategies in teaching, such as PBL, which could be more advantageous for knowledge acquisition and engagement among Kurdish EFL learners.

In an attempt to bridge the gap, the current study seeks a way PBL enhances the academic performance of the learners and their involvement in the high school environment of Kurdish society. The primary

goal of this study is to determine the degree of effectiveness of PBL in assembling the academic and linguistic requirements of the learners at different levels of education at high school through learners' perceptions and experiences at three different levels: 10, 11, and 12. Furthermore, this research looks into the possible consequences of external factors, such as traditional attention on exam-based procedure to evaluate learners in high school, especially in grade 12.

The present research attempts to answer the following research questions:

1. How does gender impact the students' perceptions of project-based learning, and influence their engagement and motivation in academic settings?
2. To what extent do academic levels impact the effectiveness of project-based learning in improving students' practical skills and preparation for real-world challenges?

2. Literature Review

2.1. Project-Based Learning (PBL)

The notion PBL is an inquiry-based approach of teaching that comprises constructing knowledge through having independent tasks and building substantial results. PBL is further an effective approach of teaching and learning that focuses on student-centered learning, activates critical thinking, collaboration, teamwork, and offers learners independence in educational environments. It has been examined that PBL is applied at various levels of educational institutions ranging from primary schools to university levels (Guo et al., 2020; Kokotsaki et al., 2016). There are six primary features of PBL: focusing on learning objectives, a big question, working with peers or group collaboratively, establishing a physical artifact, employing scaffolding technological tools, and participating in pedagogical practices (Krajcik & Blumenfeld, 2006). Apart from these key features of PBL, some other characteristics are considered as essential elements of this innovative approach, for example problem-based learning, which is the outcome of student-centered learning, leading students to deal with read-world problems. Learners should collaborate effectively to construct, incorporate, and implement understanding of the read-world issues. Teachers or educators work as facilitators to assist the learners to engage the learners in educational practices (Brundiers & Wiek, 2013).

2.2. PBL and Student Learning Outcomes

Considering the fact that students who study science and math in America are struggling compared to their peers in foreign countries in a highly developed world. There is a sudden increase in STEM-centric,

restructured K-12 educational institutions, especially those that focus on PBL approach. The impact of PBL on the outcomes of high school learners lies on standardized examinations in math and science in those countries that are following PBL approach (Craig & Marshall, 2019; Inayah et al., 2021). PBL addresses learners to explore knowledge and cooperate with peers to employ projects by themselves that reflect their comprehension. PBL has numerous advantages, such as giving freedom to build their own experiences, and integrating theory with practice in educational institutions. Through PBL, students experience practical sessions of their learning, and they have hands-on learning. PBL further activates self-directed learning, and it initiates readiness for learning among learners (Ahmed & Fatah, 2024; Syukriah et al., 2020).

2.3. Impact of PBL on Student Engagement

Student engagement has turned out to be the focal point among educators and teachers (Johnson & Delawsky, 2013). Previously, schools and educational institutions have experienced disengagement among the learners, for this reason, teachers attempted to engage leaners in their lessons through some sources of amusements during the lessons. Once the sources of interest stopped, learners started to get disengaged in classes (Ahmed, 2023; Summerlee & Murray, 2010). Savin-Baden (2016) stated that PBL became the trend among teachers to involve learners via providing supportive environments and building stimulating learning experiences. In PBL, teachers usually work as facilitators during their teaching sessions and students try to explore the essence of learning by experiencing. Other researchers confirmed that students' disengagement has become a popular challenge in all levels of educational institutions. According to students' feedback, it is clear some of them lose attention very soon once they start their lessons. It is the teachers' responsibility to engage them during the lessons (Viswambaran & Shafeek, 2019). Teachers and educators should think about alternative approaches to teaching to motivate the learners. one of the best ways to stimulate the learners is to follow PBL. Through, this trendy approach, PBL, learners are directly engaged with the learning process, and they practically do the tasks (De Jong, 2019). Holm (2011) states that PBL has the following merits: it can enhance learners' motivation, it can inspire learners to take responsibility for their learning through hands-on learning, learners construct their own knowledge in an incorporated approach, and learners get involved in learning which activates self-directed learning.

2.4. PBL in Kurdish Educational Context and High School Education

In the globalized world, a rapid shift has been set up in the interests toward learning. The Kurdish context experiences the advent of project-based learning and its application in classrooms. A study has been conducted to determine the appropriacy of PBL implementation in Kurdistan educational institutions.

Kavlu (2015) stated that through using PBL, learners could be equipped with one of the innovative approaches to learning English as a foreign language among Kurdish undergraduate students. Some of the soft skills that students could learn via PBL are problem-solving, creativity, collaboration, critical thinking, and communication skills in real-life scenarios. Her study focused on the connection between employment of PBL and EFL students with elementary level in reading comprehension. The study scrutinized the level of improvements of reading comprehension and vocabulary with the assistance of following PBL. Her research followed control and experimental group, there were forty-five participants from faculty of education, Ishik university, Erbil, Iraq. The participants from the experimental group followed PBL. The result of the study showed that by the end of their study, the participants from the experimental who studied their lessons following PBL, performed better than the participants from the control group who did not follow PBL during taking their lessons.

Furthermore, Dickson and Ladefoged (2017) conducted a study to investigate the quality of teaching through focusing on teaching methodologies at technical and vocational education and training academy in Kurdistan, Iraq. The academy, the study was conducted in, was established in 2012 to offer young educators proper training in the field of education. In addition, the training worked based on PBL strategies. The participants from the academy were technically skilled content wise; however, they had lacks in pedagogical skills. Most teachers were using teacher-centered approaches rather than student-centered approaches such as PBL. In their training sessions, they were assisted in carrying out PBL in teaching experiences.

In another study carried out by Surji and Ulker (2022), PBL is considered as one of the most effective approaches to teaching since it practically assists students to learn. This approach varies depending on the type of the subject students do study; therefore, learners can directly have hands-on learning through projects. Their study aims to investigate the learners' perceptions on PBL to ascertain whether this approach is seen positively or negatively. The participants were from the faculty of education at Tishk International University, Erbil, Kurdistan region of Iraq. The survey questionnaire was distributed among 100 participants, the responses suggested that it is preferable to study the lessons using PBL since the learners showed that they are involved in the lessons more than other traditional approaches of teaching.

3. Methodology

3.1. Design of the Study

The present study attempts to explore the student's perceptions on the project-based learning strategies in high school environment. The design of the study follows a descriptive approach using quantitative

methods. The quantitative method deals with numbers, polls, statistics, and numerical data (Bloomfield & Fisher, 2019).

3.2. Population and Sampling

The participants of the present study are from one of the government high schools based in Sulaymaniyah district in Kurdistan region government, Iraq. In total, there are 364 high school learners from grades 10, 11, and 12 aged 16-18 years for the academic year 2023-2024. The sample comprised both male and female participants to explore their perceptions toward the project-based learning strategies and students' engagement during the teaching practices in these strategies of PBL.

3.3. The Research Instrument

The researcher utilized a survey questionnaire with a 5-Likert Scale to collect the data. The process of data collection for the present study followed a targeted sampling approach. The survey items comprised of 20 items ranging from strongly disagree to strongly agree for the high school learners' viewpoints to assess the influence of problem-based learning strategies in Kurdish EFL context. The questionnaire was disseminated through a Google Forms link. The responses were collected between March 2024 and April 2024.

3.4. Data Analysis Procedure

The researcher employed the Statistical Package for Social Sciences (version 25.0) to analyze the data. An independent sample t-test was used to investigate the variations between male and female participants. Furthermore, ANOVA one-way was employed to explore the differences among the academic levels: grades 10, 11, and 12. Moreover, the reliability test was used to check the internal consistency of the variable through running Cronbach's alpha, displaying .866 which shows a high internal consistency for the items in the questionnaire.

4. Results and Discussion

4.1. Students' Perceptions across Gender-Based Differences

This section illustrates the findings of the study through conducting an independent sample t-test to explore the gender-based differences in project-based learning strategies in the context of Kurdish EFL learners.

Table 1. Gender-based differences of students' perceptions towards PBL.

Group Statistics						
Gender		**N**	**Mean**	**SD**	**T-Value**	**P-Value**
Experiences and Attitudes Toward PBL	Female	95	41.26	5.8	2.206	.306
	Male	269	39.68	6.1	2.259	
Perceived Benefits of PBL	Female	95	42	5.72	3.145	.001
	Male	269	39.75	6.1	3.243	

Table 1 presents the results of the gender-based differences of experiences and attitudes of students' perceptions towards project-based learning (PBL) of Kurdish EFL high school learners. The data is classified into two major categories: experiences and attitudes toward PBL and perceived benefits of PBL.

For the first category, experiences and attitudes towards PBL, male participants (N = 269) had a lower mean score (M = 39.75, SD = 6.1), $t(2.259)$. Moreover, female participants (N = 95) had a higher performance with (M = 41.26, SD = 5.8), $t(2.206)$, $p = .306 > .005$, implying that no statistical variations between male and female participants are observed. Regarding the second category, perceived benefits of PBL male participants (269) showed lower performance (M = 39.75, SD = 6.1), $t(3.243)$. Additionally, female participants (N = 95) demonstrated a higher mean score (M = 42, SD = 5.72), $t(3.145)$, $p = .001 < .005$, indicating a significant difference between male and female learners' perceptions towards the perceived benefits of problem based learning of Kurdish EFL learners.

In both categories, the participants' mean score is higher than the mean score of the male participants. In addition to the variation between both groups, the standard deviation demonstrates the scattering results among individual scores from the mean score. The female participants' lower SD indicates fewer individual differences among the learners, on the other hand, the male participants have a higher SD signifying more individual differences among the learners in their mean scores. Concerning the t-value, which is a ratio showing the differences between the mean of two sample sets of the male participants in both categories denotes higher t-value in which it indicates greater disparity. On the contrary, the t-value of the female participants in both categories denote a slightly lower distinction than the result of the male participants. Furthermore, the p-value illustrates significant differences between male and female learners across both categories. The findings suggest that no significant variations can be observed in the first category – experiences and attitudes towards the PBL in the Kurdish EFL context. Conversely, there is a statistical difference between male and female participants in the second category – perceived benefits of PBL among Kurdish EFL high school learners.

These findings propose that gender does not have any impact on the first category among the learners; meanwhile, gender has an impact on the second category of project-based learning. Based on the understanding of the researcher, there are two possible reasons for the differences between male and female in their perceptions towards perceived benefits of problem-based learning. Conventional gender stereotyping affects the way female and male learners consider PBL learning atmosphere in Kurdish culture. In collaborative projects, in which learners enable hands-on learning, female students are more enthusiastically involved. Based on this finding, it can be concluded that female learners may benefit more from these learning situations compared to conventional learning environments where the students are more restricted in classroom. Another possible reason might be related to different learning preferences in which female learners often manifest enhanced visibility in innovative learning environment – PBL, where peer interaction, collaboration, team-based learning, and active learning experiences are essential to the learning process. It is noteworthy to mention that following PBL approach is effective, the result of the present study is aligned with the research conducted by (Dickson & Ladefoged, 2017; Surji & Ulker, 2022).

4.2. Students' Perceptions across Academic levels

This section illustrates the findings of the study through conducting ANOVA one-way to investigate the differences in academic levels in project-based learning strategies in the context of Kurdish EFL learners.

Table 2. Grade-based differences of students' perceptions towards PBL.

Descriptives						
		N	**Mean**	**SD**	**F-value**	**P-value**
Experiences and Attitudes Toward PBL	10	119	40.89	6.52	7.081	.001
	11	166	40.57	4.90		
	12	79	37.87	7.02		
	Total	**364**	**40.09**	**6.06**		
Perceived Benefits of PBL	10	119	40.71	7.65	9.838	.000
	11	166	41.29	4.10		
	12	79	37.76	6.24		
	Total	**364**	**40.34**	**6.07**		

Table 2 demonstrates the descriptive details of the students' perceptions on the experiences and attitudes toward PBL along with the perceived benefits of PBL across three grade levels of high school students (10, 11, and 12) in Kurdish EFL context.

Regarding the first category, experiences and attitudes towards PBL, learners from grade 10 and 11

(N = 119, 166) displayed a higher performance in the mean score (M = 40.89, 40.57) than the participants from grade 12 (N = 79) showing the mean score (M = 37.87, SD = 7.02), $f = 7.081$, $p = .001 < .005$, indicating a significant difference between the academic levels which are (grade 10 and 11) and (grade 12). In the second category, perceived benefits of PBL, participants from grade 10 and 11 (N = 119, 166) had a higher mean score (M = 40.71, 41.21; SD = 7.56, 4.56); than grade 12 (N = 79) with the mean score (M = 37.76; SD = 6.24), $f = 9.838$, $p = .000 < .005$, implying a notable difference between grade 10 and 11 compared to grade 12 learners' views towards the advantages of problem-based learning for Kurdish EFL learners.

For both categories, the leaners' mean score of grades 10 and 11 are higher than the mean score of the participants from grade 12. Additionally, the standard deviation reveals the dispersion among the mean scores of the individuals across academic levels. In the first category, both grade 10 and grade 11 show low SD compared to grade 12, indicating fewer individual differences among the learners. However, in the second category, the SD of grades 11 and 12 are closely similar to each other, displaying correspondence in their perceptions toward the learning environment in project-based learning. The results offer insights into how there are significant differences between grade 10 and grade 11 in comparison with grade 12 learners in the context of high school Kurdish EFL learners.

These outcomes suggest that academic levels have influenced the choices of the learners regarding their views on the project-based learning environments. The researcher proposes two primary concerns for the abovementioned outcomes. The differences between the academic levels: grade 10 and 11 with grade 12 might be related to the situations of the twelfth-year students in which they are under more pressure than the other two academic levels in terms of preparation for final examinations since they are usually studying for final exams – Baccalaureate examinations, working hard to be admitted at their favorite departments at university. On the other hand, the junior students are less worried about the Baccalaureate exams and have a diverse vision toward the problem-based learning environment, such as teamwork, collaboration, and cooperation teaching strategies. Moreover, the explicit advantages of additional educational practices such as PBL might be weakened in grade 12 because the efforts of learning in grade 12 depends on individual attempts rather than group work and teamwork. Dickson and Ladefoged (2017) support this argument that certain teachers and even learners prefer the traditional approaches of teaching due to their familiarity with the approaches since the early stages of learning.

5. Conclusion

The study assessed the impact of project-based learning strategies in the context of Kurdish EFL on high school learners of both genders and three academic levels. The outcomes of the present study offered compelling evidence that PBL is perceived as a beneficial and effective approach to enhance students' soft skills such as working in team, learning from each other in collaborative projects, and the ability to solve problems cooperatively. Both genders work hard toward the strategies of PBL. Furthermore, the academic levels show distinct results of the students' viewpoints towards the basic strategies of PBL. The learners from grades 10 and 11 show a high enthusiasm toward the PBL; however, grade 12 learners do not have the same level of interest towards the implementation of the PBL strategies. It is important to mention that grade 12 learners have individualized approaches of studying since the workload of grade 12 is considerably greater than the workload of other two grades. Overall, the study underlines the impact of project-based learning strategies in improving students' learning soft skills in the collaborative environment through communication with peers.

Taking into consideration the current statistics, the subsequent effects have been established for future researchers. Consciousness of the impact of project-based learning and its application in educational practices enhances English language learning processes. More research is needed to observe the influence of innovative teaching methods such as project-based learning, employing various methodologies and approaches to implement them in diverse educational contexts. More extensive research and time could be devoted to participating more teachers and students effectively in utilizing project-based learning in Kurdish EFL context.

The findings of the study, which focus on the benefits and challenges of incorporating PBL into the Kurdish EFL curricula, have the possibility to upgrade the teaching skills of the teachers to suit the learning environment with the innovative approaches and strategies, and urge the policymakers to redesign the curriculum of high school to be eligible for PBL approach. In this regard, it will enhance the student-centered environment for the high school students to replace the traditional approaches, and it will be increasingly necessary for high school learners.

Declaration of Competing Interest: The author declares that he has no known competing of interest.

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