Empowering Education through Project-Based Learning: A Case Study on the Implementation and Impact of PBL in Albania

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Received: 17 January 2026 | ***Accepted: 30 October 2026*** | ***Published: 20 November 2026***

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DOI: 10.56345/ijrdv13n340

Abstract

The aim of this study is to analyse the experience of university students in Albania immersed in Project-Based Learning environments (PBL) in order to understand their opinion about this approach and its impact on the learning process. The research critically synthesises an extensive review of the literature and insights from students' opinions on the benefits of PBL, primed by their own experience of the PBL method in their English classes at the university. Empirical data were gathered from 108 respondents (a convenience sample drawn from the population of first-year students from the Economic Informatics bachelor's programme at the Faculty of Economics, University of Tirana, Albania) through a self-report questionnaire, and the findings were analysed using IBM SPSS 25 in order to obtain a more complete interpretation of the results. The study intricately examines the practical implementation of PBL in educational settings, shedding light on its influence not only on academic outcomes but also on student engagement and the holistic development of essential life skills. In Albania, the recent years of the educational landscape have witnessed a notable shift towards methodologies that prioritise active engagement, critical thinking, and the real-world application of knowledge and skills.

Keywords: ***Education, PBL, student engagement, satisfaction, cooperation, communication***

1. Introduction

The traditional teacher-centred model of the classroom has now converted into a student-centred model that encourages active engagement and collaboration by equipping students with essential skills for facing the complexities of the modern world, such as problem-solving, critical thinking, teamwork, communication, and adaptability skills (Rauf, 2025).

Empowering education through Project-Based Learning (PBL) today lies in its ability to create active learning environments in contrast to conventional methods, which often emphasise learning by heart, fragmented, and passive learning. This research study endeavours to uncover the personal experiences of students immersed in PBL environments, shedding light on the nuanced dynamics that contribute to its transformative potential.

The integration of digital tools, collaborative platforms, and a heightened emphasis on skills-based learning has propelled PBL to the forefront of contemporary educational discourse (Thomas, 2000). As the demand for 21st-century skills intensifies, PBL has become a strategic response to prepare students for a rapidly evolving global landscape.

The integration of PBL in Albanian classrooms aligns with global trends emphasising student-centred, experiential learning (Thomas, 2000). The acknowledgement of PBL as a catalyst for cultivating critical thinking skills and preparing students for the demands of the contemporary world has been evident in educational policies and initiatives (Ministry of Education, Sports, and Youth, Albania, 2020). The impact of PBL on student outcomes in Albanian educational contexts has contributed to the widespread use of this pedagogical approach. Professional development programmes for educators, focusing on PBL methodology, have been key in several Albanian schools for its effective implementation.

In recent years, prioritising student engagement and inquiry-based learning has been the major pillar of teaching approaches (Barron & Darling-Hammond, 2019). PBL aligns seamlessly with this trend, offering a framework in which students take ownership of their learning through exploration, collaboration, and problem-solving. The efficacy of student-centred approaches in enhancing critical thinking skills is underscored by contemporary research findings (Hmelo-Silver et al., 2020).

The Albanian educational context also provides evidence supporting the shift towards more interactive, student-centred approaches to teaching. Roseni (2014), in her study of interactive and inclusive teaching in Albanian schools, examined teachers' and students' perspectives on the applicability of modern teaching methods and the factors that may facilitate or hinder their implementation. The study, which involved 10 English teachers and 300 students, highlighted the importance of moving beyond conventional teacher-centred practices towards approaches that promote greater student participation and improve the quality of teaching and learning. Although the study was not specifically focused on Project-Based Learning, its emphasis on interactive and inclusive methodologies provides a relevant foundation for understanding the pedagogical principles underlying PBL. In particular, the active involvement of learners and the adaptation of teaching practices to students' needs are consistent with the principles of PBL, in which learners are expected to participate actively, collaborate, apply knowledge, and take greater responsibility for their learning. Thus, evidence from the Albanian context reinforces the broader argument that student-centred and interactive pedagogies can create more meaningful learning environments and provide a basis for the development of the competencies required in contemporary education.

One of the key skills for success in the 21st century is the critical thinking skill, and in recent years, there has been a growing interest in how PBL helps develop and boost the critical thinking process (Belland et al., 2019).

The complexities of the modern world demand more than just academic proficiency. Recent literature emphasises the importance of preparing students with the practical skills and adaptability required for success in an interconnected and fast-paced society (Boss & Krauss, 2019).

Project-Based Learning was implemented within the English for Specific Purposes course as an interdisciplinary pedagogical strategy. This approach integrated language learning with academic, technological, and professional skill development by engaging students in structured projects related to their field of Economic Informatics. The projects were designed to be accessible to first-year students while progressively developing essential competencies such as communication, collaboration, research, and critical thinking.

2. Literature Review

The literature on PBL underscores its effectiveness in empowering education, providing robust evidence of its benefits across various educational contexts.

According to John Larmer and John R. Mergendoller (2015), PBL creates a dynamic classroom environment where students are actively involved in their learning process. This engagement stems from the relevance of the projects to the lives and interests of the students, making learning more meaningful. Thomas (2000) claims that PBL participants are more motivated and engaged than those using standard teaching techniques. This increased motivation is crucial because it directly correlates with enhanced academic performance and a more positive attitude toward learning.

Similarly, Holm (2011) argues that PBL participants exhibit improved knowledge retention and higher-order thinking abilities. These results are ascribed to PBL's immersive, hands-on approach, which calls on students to use what they have learnt in real-world, frequently interdisciplinary situations. Additionally, Bell (2010) points out that PBL aids in the

development of critical thinking, problem-solving, and teamwork skills – all, of which are essential for success in the contemporary world. These abilities are crucial for adaptation in a world that is changing quickly, as well as for lifelong learning and academic success.

PBL inherently supports the development of these skills by encouraging teamwork, requiring innovative solutions, and promoting reflective thinking. A study by Barron and Darling-Hammond (2019) highlights that PBL environments foster these competencies more effectively than traditional educational settings.

Furthermore, the iterative nature of PBL, which often involves reviewing and refining work based on feedback, mirrors real-world processes and professional practices. As students navigate these cycles of inquiry and improvement, they learn to adapt and persist, skills that are invaluable in any career path (Hmelo-Silver, 2004). This process of continuous improvement not only enhances their academic abilities but also prepares them for the demands of the workforce, where iterative problem-solving and resilience are highly valued.

PBL also exhibits promise in fostering equity and meeting a variety of educational demands. For instance, PBL provides an inclusive approach that values diverse viewpoints and learning methods for learners from a variety of backgrounds, including those who would find it difficult in traditional settings. According to Blumenfeld et al. (1991), PBL can help bridge achievement disparities by giving every student the chance to succeed through differentiated support and instruction. Regardless of their background or preferred method of learning, all students will have the opportunity to interact with the content and succeed thanks to this inclusive approach.

In addition, the collaborative nature of PBL boosts a sense of community and belonging in the classroom. This aspect is particularly beneficial for marginalised students, who may feel isolated in conventional educational environments. A study by Krajcik and Czerniak (2018) found that PBL helps create a more inclusive classroom culture, where students learn to appreciate and leverage their diverse strengths and experiences.

Despite its benefits, implementing PBL is not without challenges. Teachers often need substantial support and professional development to effectively design and facilitate PBL experiences (Grant, 2002). This includes training on how to create meaningful projects, manage classroom dynamics, and assess student work in a way that aligns with PBL principles. Furthermore, the assessment in PBL can be multiplex, requiring a shift from traditional testing methods to more formative, process-oriented evaluations (Strobel & van Barneveld, 2009).

Successful PBL implementation relies on careful planning, ongoing teacher training, and a supportive school culture that values innovation and collaboration (Ravitz, 2010). Schools that invest in professional development and cultivate a PBL-friendly culture are more likely to experience positive results. This includes giving educators the time and tools they need to properly plan and carry out initiatives.

Project-Based Learning represents a powerful approach to empowering education. By actively engaging students, fostering essential 21st-century skills, and addressing diverse educational needs, PBL offers a promising pathway to more meaningful and effective learning. As educational landscapes continue to evolve, embracing PBL could be pivotal in preparing students for future challenges and opportunities. As educators and policymakers seek to improve educational outcomes, PBL offers a viable and compelling strategy for the future.

3. The Study Undertaken

3.1 Research Aims, Hypotheses and Questions

The purpose of this study is to analyse the experience of university students in Albania immersed in Project-Based Learning environments (PBL) in order to understand their attitude and opinion about this experience, and thus assess the effectiveness of PBL and its impact on the learning process.

In addition to eliciting these evidence-based insights into the effectiveness of PBL, the study also analyses the validity of two hypotheses and tries to provide answers to two research questions in order to draw accurate conclusions and make relevant recommendations about the implementation of PBL in the educational landscape:

- *H1*: The satisfaction from participation in PBL depends on the relevance of the project for the participants, as well as on the opportunities for cooperation and mutual communication that the project activities provide.
- *H2:* The positive impact of PBL on the learning process is significantly influenced by the level of collaboration and communication among participants in the Problem-Based Learning approach, as well as by the direct relevance of the addressed situations to real-life and meaningful contexts for the learners.
- *RQ 1:* Does age affect real-world relevance? If it does, which age group experiences the highest relevance?
- *RQ* 2: Does participation in PBL positively impact the outcomes of the learning process?

3.2 Participants

The sample of our study is a convenience sample of 108 respondents, all of whom were first-year students in the Economic Informatics bachelor's programme at the Faculty of Economics, University of Tirana, Albania, during the period April-May 2025. The study involved immersing the students in a Project-Based Learning environment as part of their English classes at the university and analysing their learning experience.

These 108 students represent the full cohort of first-year students of Economic Informatics enrolled in the English for Specific Purposes (ESP) course where Project-Based Learning (PBL) was formally implemented as part of the curriculum. Therefore, this number does not represent the entire university population, but rather a defined subgroup of students who were directly exposed to the PBL methodology and voluntarily agreed to participate in the study questionnaire. This ensured consistency between the pedagogical intervention and the data collected, allowing for accurate analysis of the impact of PBL on this specific learner population.

3.3 Research Instruments and Procedure

To explore the impact of Project-Based Learning (PBL) on empowering education, a mixed-methods approach was employed. In order to facilitate the data gathering process, the participants provided all the information needed through a specially designed questionnaire using the Google Form platform. Within this course, the project-based learning method incorporated interdisciplinary elements from several academic and professional domains, including English for Specific Purposes (ESP), Information Technology, Economics, Communication Studies, and Academic Research Skills. These disciplines were integrated to ensure that students developed both language proficiency and professional competencies relevant to their field of Economic Informatics. The project topics were initially introduced by the instructor in the form of structured thematic areas aligned with course objectives and real-world applications. However, students were encouraged to select specific topics within these thematic frameworks according to their personal interests and academic goals, thus ensuring both pedagogical guidance and learner autonomy. Examples of first-year student projects included: Developing and presenting a digital business idea using English terminology relevant to economics and IT; Designing a professional CV and LinkedIn profile in English; Conducting a group presentation on emerging technologies such as Artificial Intelligence, cybersecurity, or e-commerce; Analysing case studies of successful startups and presenting communication strategies used; Creating surveys and analysing student digital habits or technology use; Producing academic presentations on economic or technological innovations. These projects were specifically designed to be appropriate for first-year students who had recently entered university, allowing them to gradually develop communication, collaboration, and analytical skills through guided inquiry and structured teamwork.

The purpose of the questionnaire was to obtain a wide range of opinions on how effectively PBL fosters critical thinking skills, increases student engagement, and encourages collaborative learning. Critical thinking and communication skills were assessed through multiple forms of performance-based and formative assessment integrated into the PBL framework. These included: Oral presentations evaluated using structured rubrics; Written project reports assessing argumentation, organisation, and academic language; Case-study analyses requiring students to interpret real-world scenarios; Problem-solving tasks involving research and solution proposals; Peer evaluation and self-reflection tasks to assess communication effectiveness and teamwork; Instructor observation of student participation, reasoning, and engagement during project development.

These assessment methods allowed for the evaluation of higher-order thinking skills such as analysis, synthesis, evaluation, and argumentation, which are core components of critical thinking. Unlike traditional testing methods alone, this approach provided authentic assessment aligned with real-world academic and professional tasks.

It comprised sections on overall satisfaction with PBL, its impact on learning, collaboration, and communication, as well as the real-world relevance of the PBL activities. It included multiple-choice questions, Likert-scale questions, and open-ended questions to accommodate complex answers. The questionnaire was initially piloted with a small group of students to ensure clarity and reliability before full deployment. The final version of the questionnaire consisted of five sections:

- *Section I – Background information*: it provided general information about the respondents' location, gender, age, number of projects in which they have been involved;
- *Section II – Overall satisfaction*: it measured the respondents' satisfaction from engagement in the PBL activities, the level of learning achieved through the PBL projects, the perception of the learning experience as enjoyable, the preference for using PBL as a method of instruction, etc.

- *Section III – Impact on learning*: it explored how the implementation of the PBL method influenced students' learning outcomes. A Likert scale was used in this section for measuring respondents' attitudes or perceptions.
- *Section IV – Collaboration and communication:* it focused on the role of teamwork and collaboration in enhancing educational experiences. This section examined how students interacted to support learning objectives.
- *Section V – Real-world relevance:* it measured the relevance to real-world situations and the real-world applications of what is being learnt.

4. Study Findings

The database obtained for this study contains information related to experiences with Project-Based Learning (PBL) of 108 Albanian university students, of whom 101 (or 94%) live in urban areas and the rest live in rural areas (Figure 1).

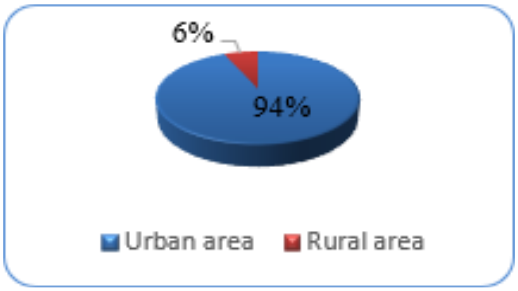


Figure 1: Location
Source. Own research.

The distribution with regard to the impact of age group differences shows that most of the respondents (mean age = 18.77) were first-year university students (Figure 2).

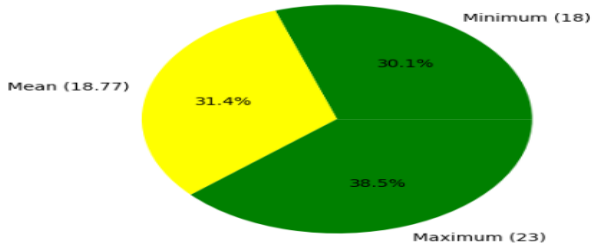


Figure 2: *Student's Age Group*
Source. Own research.

This graph illustrates the descriptive statistics of participants' age in the sample (N = 108), presenting the minimum, mean, and maximum values. The minimum age of the participants was 18 years, while the maximum age reached 23 years, indicating a relatively narrow age range. The mean age was 18.77, suggesting that most of the students were clustered around 18–19 years old. Overall, the distribution reflects a predominantly young sample, which is consistent with the typical age profile of first-year university students.

Graph 3 is essential for identifying the overall level of experience students have with PBL, which can influence their feedback on its impact on learning, satisfaction, and real-world relevance. It helps educators understand whether the students are novices or seasoned participants in PBL. The graph shows that a significant number of the respondents in the present study (n = 85) have been involved in 9 or 10 PBL projects, making this category the most common among the

participants. A smaller but noticeable percentage of the students (n = 38) have participated in 6–8 projects, indicating that while some students have less PBL exposure, they are fewer in number compared to the majority. The fewest number of students (n = 9), have been involved in 4 to 6 projects, representing those with more limited PBL experience.

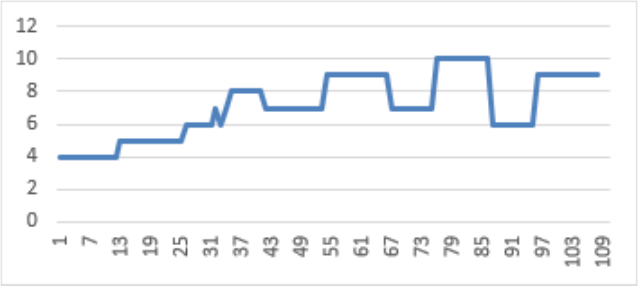


Figure 3: Number of PBL projects students have been involved in
Source. Own research.

For the analysis of the qualitative data that was gathered through this questionnaire, the following statistical model was employed:

Dependent variables:

- *Impact of PBL on student engagement* (measured by a Likert scale with 8 questions);
- *General satisfaction of participation in PBL* (measured by 8 items related to feedback on the PBL approach).

Independent variables:

- *Cooperation and communication* (measured through 5 questionnaire items on teaching strategies);
- *Real-world relevance* (measured by 2 specific questionnaire items).

4.1 Testing Hypothesis H1

The satisfaction from participation in PBL depends on the relevance of the project for the participants, as well as on the opportunities for cooperation and mutual communication that the project activities provide.

This hypothesis is analysed through the construction of the multiple linear regression equation. Firstly, it checks if there is a correlation between the independent variables, which could affect their relationship with the dependent variable, or in other words the multicollinearity between them. The results from the analysis of this correlation, presented in Table 1, show that there is no correlation between the independent variables which affects their correlations with the dependent variables since the corresponding values of the Pearson coefficient are lower than the allowed value of 0.7 (Table 1).

Table 1: *Multicollinearity between Independent Variables*

	Collaboration & communication	Real-World Relevance
Collaboration & communication	1	.546**
Real–World Relevance	.546**	1

Note. **Correlation is significant at the 0.01 level (2-tailed).

Source. Own research.

The data in Table 2 from the analysis of variance (ANOVA) shows that the corresponding value of Sig.=0.000<0.05, allows us to confirm that it makes sense from a statistical point of view to talk about a valid correlation between the dependent variable (satisfaction) and the predictors (collaboration and real-world relevance).

Table 2: Results from the ANOVA Analysis

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	59.298	2	29.649	135.541	.000[b]
	Residual	22.968	105	0.219		
	Total	82.267	107			

Note. a) Dependent Variable: Satisfaction; b) Predictors: (Constant), Collaboration, Relevance.

Source. Own research.

Their correlation is further examined through the development of a multiple linear regression model.

Table 3: Results from the Multiple Linear Regression Analysis

Model[a]	R Square	Adjusted R Square	T	Sig.
(Constant)	0.721	0.715	5.108	0.000
Real-World Relevance			3.551	0.001
Collaboration & communication			11.526	0.000

Note. Dependent Variable: Satisfaction.

Source. Own data.

The data in Table 3 show that the corresponding values of Sig. for the two independent variables are respectively 0.001 and 0.000, that is, smaller than 0.05, which allows us to say that both of these independent variables (real-world relevance and collaboration & communication) are correlated with the dependent variable, general satisfaction from the PBL experience, and thus the regression equation of linear multiple has the form:

(Satisfaction) = 1.013 + 0.180 (Relevance) + 0.470 (Collaboration & communication)

The equation reveals that both β coefficients are positive, indicating that both variables exert a positive influence. Furthermore, the β coefficient associated with the independent variable Collaboration & Communication is greater in magnitude than that of the variable Relevance, suggesting that Collaboration & Communication has a stronger impact compared to Relevance.

The reliability coefficient, in this case, demonstrates a substantially high value, with R^2 =72.1%. This indicates that the two variables account for 72.1% of the variance in the dependent variable. Therefore, it can be concluded that the real-world relevance of the project, along with effective communication and cooperation, significantly contribute to students' overall satisfaction with their participation in project-based learning (PBL), regardless of the setting.

4.2 Testing Hypothesis H2

The positive impact of PBL on the learning process is significantly influenced by the level of collaboration and communication among participants in the Problem-Based Learning approach, as well as by the direct relevance of the addressed situations to real-life and meaningful contexts for the learners.

This hypothesis is also examined through the development of a multiple linear regression model, beginning with an analysis of variance (ANOVA). The data presented in Table 4 indicate that the corresponding significance value of Sig.=0.000<0.05 is less than the threshold, confirming the validity of discussing a correlation between the two independent variables and the dependent variable, which measures their impact on the learning process (Table 4).

Table 4: Results from the ANOVA Analysis

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	49.614	2	24.807	65.273	.000[b]
	Residual	39.905	105	0.380		
	Total	89.519	107			

Note. a) Dependent Variable: Impact of PBL on learning; b) Predictors: (Constant), Collaboration & communication, Real-world relevance

Source. Own research.

Conversely, the correlation analysis reveals that the corresponding significance values (Sig.=0.000) for these variables are below the threshold of 0.05. Consequently, both variables are appropriately included in the multiple linear regression model (Table 5).

Table 5: Results from the Multiple Linear Regression Analysis

Model	R Square	Adjusted R Square	T	Sig.
(Constant)	0.554	0.546	4.211	0.000
Real-World Relevance			3.678	0.000
Collaboration & communication			7.051	0.000

Note. a) Dependent Variable: Impact of PBL on learning

Source. Own research.

The structure of this equation is expressed as follows: *(Impact of PBL on learning) = 1.100 + 0.246 (Relevance) + 0.386 (Collaboration & communication)*

The structure of the equation reveals that both coefficients have positive values, indicating that each variable exerts a positive influence. An increase in both variables (real-world relevance and collaboration & communication) results in a corresponding increase in the values of the dependent variable (impact of PBL on learning). Additionally, it is evident that cooperation and mutual communication, as fostered through participation in project-based learning (PBL), have a slightly greater impact compared to the variable measuring the relative relevance of this participation. Furthermore, the determination coefficient R^2= 55.4 represents a satisfactory value, signifying that the model explains a substantial portion of the variance in the dependent variable.

It can be stated that the impact of PBL directly associated with the learning process is undeniably influenced by the cooperation and communication fostered through participation in project-based learning (PBL). Additionally, this impact is further shaped by the practical relevance derived from these experiences.

4.3 Answering RQ1: Does Age Affect Real-World Relevance? If it Does, which Age Group has the Highest Relevance?

In order to answer this research question, we start by looking at its first part: whether there is a correlation between the students' ages and the relevance of project-based learning involvement. The Chi-Square Test is used as a statistical method of analysis to look at this correlation: through it we may ascertain whether there is a significant correlation between student age groups and their opinion of the relevance of participating in PBL.

According to the findings of the Chi-Square Test data analysis, the Pearson Chi-Square coefficient value, as determined by the 2-sided Asymptotic Significance, is 0.065, which is below 0.05. This result supports the legitimacy of more discussion about the two variables' relationship by indicating that there is a statistically significant correlation between them (Table 6).

Table 6: Results from the Chi-Square Tests

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.459[a]	2	0.065
Likelihood Ratio	5.030	2	0.081
Linear-by-Linear Association	0.997	1	0.318
No. of Valid Cases	108		

Source. Own research.

Where, however, is this significance more apparent? We apply the Test of Independence to determine the answer to this query. The Levene's Statistics Test, which gauges group homogeneity (student age group), is first applied. According to this test, the two examined age groups - i.e. students of 18-20 years of age and students of 21-23 years – are homogeneous for F=0.245, as indicated by the corresponding result of Sig.=0.622>0.05 (Table 7).

Table 7: Results from the Independent Samples Test

Independent Samples Test									
Relevance	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	*0.245*	*0.622*	*0.998*	*106*	*0.320*	*0.390*	*0.391*	*-0.384*	*1.164*
Equal variances not assumed			0.993	8.147	0.349	0.390	0.393	-0.513	1.293

Source. Own research.

The corresponding values of the standard deviations, which are equal, further support the relationship between the two variables (Table 8). Additionally, each of their Mean Difference values is identical. We use the t-test for equality of means in light of this finding. This test shows that the corresponding Sig. (2-tailed) = 0.320>0.05 value. This demonstrates that when it comes to evaluating the actual value of participating in PBL, there are no statistically significant differences between the two age groups. The matching values of the average assessment, which show that $M_{18\text{-}20\ years\ old} = M_{21\text{-}23\ years\ old}=4$ (Table 13), further support this conclusion.

Table 8: Group Statistics

Age Group		N	Mean	Std. Deviation	Std. Error Mean
Relevance	18-20 years old	100	4	1.063	0.106
	21-23 years old	8	4	1.069	0.378

Source. Own research.

4.4 Answering RQ 2: Does participation in PBL positively impact the outcomes of the learning process?

In order to answer this question, we once again use the Chi-Square Test. The results of this test indicate that the Pearson Coefficient, as determined by Asymptotic Significance (2-sided), = 0.000<0.05, enables us to conclude that these two variables are correlated; in other words, PBL participation is a beneficial tool that unquestionably affects the learning process (Table 9).

Table 9: Results from the Chi-Square Tests

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.850[a]	2	0.000
Likelihood Ratio	20.559	2	0.000
N of Valid Cases	108		

Source. Own research

5. Discussion

The distribution of students' project-based learning (PBL) involvement was disclosed by the survey question, "How many PBL projects have you been involved in so far?" According to the findings, 54 students, or 50% of the respondents, said they have participated in PBL projects up to four times. 41% of students reported that they have participated in PBL projects six times, placing them in this group. Last but not least, a smaller group of 10 students, or 9% of all respondents, expressed a higher degree of participation by saying they have taken part in PBL projects more than six times. These results show that the students who participated in the survey had varied levels of exposure to PBL, with a considerable percentage indicating substantial familiarity with these kinds of learning activities.

Regarding the students' assessment of their level of satisfaction, they had the following opinions: 77% of the students fully agree that PBL encourages them to actively participate in the learning process, and they have also commented on the fact that PBL has made their learning experience more enjoyable. At the same time, only 7% of the students stated that their expectations for PBL participation were not met, while the remaining 16% said that their level of satisfaction with these projects was normal. However, for an additional 77% of them, PBL has increased their enthusiasm and interest in learning. According to 65% of all students, participating in PBL projects has been a rewarding learning experience. Additionally, 69% of the respondents fully agreed that the variety of PBL activities contributes to a positive learning environment, whereas 11% either disagreed or only half agreed with this fact. However, 66% of the respondents agree with the proposition that PBL activities are engaging and enjoyable, whereas 60% agree that PBL is their preferred learning method (the remaining 31% indicate moderate satisfaction with this learning method, and additional 9% would not choose PBL as their preferred approach) (Table 10).

Table 10: Evaluation of Satisfaction with PBL (in %)

	Strongly disagree	Disagree	Moderate	Agree	Strongly agree	Total
PBL activities are engaging and enjoyable.	4	4	27	46	19	100
I feel satisfied with the depth of learning achieved through PBL projects.	4		44	41	12	100
I find PBL projects to be a rewarding learning experience.	7	4	24	36	29	100
PBL encourages me to actively participate in my learning process.	4		19	56	20	100
Participating in PBL has made my learning experience more enjoyable.	4	4	16	45	31	100
The variety of PBL activities contributes to a positive learning environment.	7	4	19	43	27	100
PBL has enhanced my interest and enthusiasm for learning.	4	8	11	41	36	100
I would choose PBL as my preferred learning method.	4	5	31	37	23	100

Source. Own empirical results.

A substantial majority of the students (66%) who were interviewed expressed full agreement that their participation in project-based learning (PBL) has improved their critical thinking abilities when asked about how they believe PBL participation has affected the educational process. Additionally, 65% of the students agreed that their involvement has unquestionably improved their capacity to successfully tackle challenging situations. A lower percentage of the respondents, 24% and 11%, respectively, either had a neutral position or did not believe that PBL was a useful method for enhancing their problem-solving skills. These results demonstrate that PBL is widely acknowledged as a successful

strategy for developing critical thinking abilities, but they also show that there is a minority that has different opinions about its effect on the learning outcomes.

In contrast, the results show that 64% of participants agreed with the claims that "PBL has deepened my understanding of the subject matter" and that "Through PBL, I have gained a deeper appreciation for the relevance of academic concepts". Furthermore, 56% of the students agreed that they are feeling more confident in applying the knowledge gained through PBL in real-world scenarios. Notably, 73% of the respondents agreed that PBL had improved their overall academic performance, indicating even greater support for this belief. Additionally, 54% of the participants agreed or fully agreed that PBL has enhanced their creativity and innovative thinking (Table 11).

Table 11: Evaluation of Impact of PBL on Learning (in %)

	Strongly disagree	Disagree	Moderate	Agree	Strongly agree	Total
PBL has deepened my understanding of the subject matter.	11	5	20	45	19	100
My critical thinking skills have improved through participation in PBL.	7	4	23	42	24	100
PBL activities have increased my ability to solve complex problems.	4	7	24	45	19	100
I feel more confident in applying knowledge gained through PBL in real-world scenarios.	4	7	31	38	19	100
PBL has enhanced my creativity and innovative thinking.	4	8	34	31	23	100
I have gained practical skills through PBL that are applicable beyond the classroom.	4	12	28	26	31	100
Through PBL, I have gained a deeper appreciation for the relevance of academic concepts.	4	5	28	41	23	100
PBL has positively influenced my overall academic performance.	4	0	23	39	34	100

Source. Own empirical results.

The responses from the students show overwhelmingly good opinions about the communication and cooperation fostered in PBL activities. In particular, 77% of the participants completely agreed that PBL enhances their ability to express ideas both verbally and in writing. Furthermore, 73% of the respondents agreed that collaborating on PBL projects has helped them to develop teamwork skills. These results highlight how PBL helps develop vital communication and collaboration skills, which are necessary for success both in the classroom and in the workplace.

69% of the respondents confirmed that team discussions and interactions during PBL contribute positively to the learning experience. On the other hand, just 7% of the participants thought that this communication, interaction, and engagement had little to no effect on their learning outcomes. These results demonstrate the widely accepted value of teamwork in PBL, but they also represent a minority viewpoint that sees its impact as being restricted. In particular, 65% of the respondents concurred that successful teamwork is necessary for PBL projects, and 66% of the respondents said they feel at ease working with their peers in a collaborative PBL setting. This component was rated as having a significant, minimum, or no impact by the remaining individuals (Table 12).

Table 12: Evaluation of Collaboration and Communication (in %)

	Strongly disagree	Disagree	Moderate	Agree	Strongly agree	Total
PBL projects require effective collaboration among team members.	7	4	24	29	36	100
I feel comfortable working with my peers in a collaborative PBL environment.	7	0	27	46	19	100
Collaborating on PBL projects has helped me develop teamwork skills.	7	0	19	32	41	100
I find that PBL enhances my ability to express ideas both verbally and in writing.	7	4	12	44	32	100
Team discussions and interactions during PBL contribute positively to the learning experience.	4	4	24	20	48	100

Source. Own empirical results.

According to the students' assessments of PBL's relevance to the real world, a sizable majority (73%) agreed with the claim that PBL has helped them to see the real-world applications of what they are learning. However, 16% of the respondents disagreed with this statement or only partially agreed with it. In a similar vein, 68% of the participants said that PBL projects are relevant to real-world situations. In contrast, 11% and 16% of the remaining participants, respectively, acknowledged this influence to be of a moderate degree, only slight, or to be absent at all (Table 13). These results highlight the belief held by the majority of the students that PBL successfully connects classroom instruction with real-world, useful applications.

Table 13: Evaluation of Real-World Relevance (in %)

	Strongly disagree	Disagree	Moderate	Agree	Strongly agree	Total
PBL projects are relevant to real-world situations.	7	9	16	44	24	100
PBL has helped me see the real-world applications of what I'm learning.	4	12	11	53	20	100

Source. Own empirical results.

A more thorough analytical method is needed to fully interpret the data gathered and answer the research questions and validate the hypotheses of the study. This is accomplished by an analytical examination that starts with a review of each variable's factorial weight to determine how much of an impact it has on the constructs being studied. Cronbach's Alpha coefficients, which show the internal consistency and robustness of the measurement scales employed in the study, are another way to assess the variables' reliability. The following statistical model was employed for the analysis:

- Dependent Variables: a) *Impact of PBL on student engagement* (measured by Likert scale with 8 questions); b) *General satisfaction from participation in PBL (measured by 8 items related to feedback on the PBL approach*);
- Independent Variables: a) *Cooperation and communication* (measured through 5 questionnaire items on teaching strategies); b) *Real-world relevance* (measured by 2 specific questionnaire items).

All of the variables' factorial weights are greater than the allowable cut-off point of 0.4, meaning that every item linked to each variable satisfies the requirements to be included in the analysis. As a result, all related questions are kept for additional analysis (refer to the tables in the appendix). The Principal Component Analysis (PCA) approach was used to estimate these weights. Strong internal consistency is also indicated by the extraordinarily high reliability coefficients for every variable. This suggests that the items are legitimate and successfully capture the desired constructs, thereby offering trustworthy and pertinent data for this research (Table 14).

Table 14: Cronbach Alpha's Coefficients

	Cronbach's Alpha	No. of Items
General satisfaction	0.956	8
Participation impact of PBL in the learning process	0.946	8
Collaboration and Communication	0.946	5
Real-world relevance	0.872	2

Source. Own empirical results.

The findings of this study confirm that Project-Based Learning is highly effective even for first-year university students, who are in the early stages of their academic development. Although first-year students have only recently joined the university environment, the structured and scaffolded design of the PBL projects enabled them to actively engage in meaningful learning experiences. Through guided instruction, teamwork, and incremental project phases, students were able to develop foundational communication skills, critical thinking skills, and academic confidence. The use of authentic tasks such as presentations, research activities, and real-world case analyses allowed students to assess and improve their communication skills while simultaneously strengthening their ability to analyse information, form arguments, and present conclusions. Furthermore, participation in interdisciplinary projects provided students with opportunities to connect theoretical knowledge with practical application, thereby enhancing both motivation and skill development.

6. Conclusions

Introducing project-based learning (PBL) into Albania's educational system offers a viable way to modernise pedagogical techniques and empower students. PBL has the potential to dramatically improve the calibre and applicability of education in Albania by placing a strong emphasis on collaborative, hands-on learning experiences that link classroom concepts to real-world situations. This strategy has several advantages. PBL has the potential to increase student motivation and engagement while cultivating a sincere love of learning.

The quantitative data analysis in the present study offers strong proof that PBL considerably improves student engagement, critical thinking, and the development of life skills. These results demonstrate PBL's transformative potential, especially when applied with consideration for the needs of students and pedagogical best practices.

The components of cooperation and communication have a major impact on the overall enjoyment that comes from participating in project-based learning. These elements emphasise the value of group participation in the learning process and provide students with a distinct and improved sense of fulfilment. Students discover meaningful learning experiences that are especially rewarding because of the contact and teamwork that PBL fosters, underscoring the importance of cooperative and participatory learning environments.

Furthermore, it seems that the value of PBL involvement is unaffected by the age of the students, indicating that the importance of these experiences is consistently valued by young adults. The results of the research illustrate how PBL provides all students with inherent educational advantages and opportunities for interaction and personal growth.

It has been demonstrated that participation in project-based learning, a very successful pedagogical strategy, has a positive and substantial impact on the learning process. Through practical, real-world projects that require students to use their academic knowledge to solve challenging problems, PBL gives students the chance to actively participate in their own learning. Because students must integrate knowledge from multiple sources, work with others, and adjust to changing project requirements, this kind of learning encourages critical thinking, problem-solving, and decision-making abilities. By empowering students to take charge of their education, the PBL's structure– which prioritises inquiry, teamwork, and reflection – not only supports deeper learning but also long-term memory retention. PBL thus produces an engaging and dynamic learning environment.

The cooperation and communication that take place throughout these projects have a significant influence on how PBL affects the learning process. These components are essential to PBL's success because they allow students to collaborate to solve problems, exchange different viewpoints, and come up with solutions. Collaboration fosters interpersonal skills, including teamwork, negotiation, and dispute resolution, all of which are essential for creating a supportive learning environment.

Acknowledgment

The authors declare that no artificial intelligence tools were used in the preparation, writing, analysis, or editing of this manuscript. The content of the manuscript was prepared entirely by the authors.

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Appendix

Table A1: Factorial Weights of the Dependent Variable - General Satisfaction

	Extraction
PBL activities are engaging and enjoyable.	0.854
I feel satisfied with the depth of learning achieved through PBL projects.	0.743
I find PBL projects to be a rewarding learning experience.	0.716
PBL encourages me to actively participate in my learning process.	0.668
Participating in PBL has made my learning experience more enjoyable.	0.786
The variety of PBL activities contributes to a positive learning environment.	0.852
PBL has enhanced my interest and enthusiasm for learning.	0.823
I would choose PBL as my preferred learning method.	0.744

Note. Extraction Method: Principal Component Analysis.

Table A2 : Factorial Weights of the Dependent Variable - The Impact of Participation in PBL in the Learning Process

	Extraction
PBL has deepened my understanding of the subject matter.	0.689
My critical thinking skills have improved through participation in PBL.	0.693
PBL activities have increased my ability to solve complex problems.	0.853
I feel more confident in applying knowledge gained through PBL in real-world scenarios.	0.848
PBL has enhanced my creativity and innovative thinking.	0.707
I have gained practical skills through PBL that are applicable beyond the classroom.	0.788
Through PBL, I have gained a deeper appreciation for the relevance of academic concepts.	0.554
PBL has positively influenced my overall academic performance.	0.731

Table A3: Factorial Weights of the Independent Variable – Cooperation and Communication

	Extraction
PBL projects require effective collaboration among team members.	0.677
I feel comfortable working with my peers in a collaborative PBL environment.	0.859
Collaborating on PBL projects has helped me develop teamwork skills.	0.913
I find that PBL enhances my ability to express ideas both verbally and in writing.	0.852
Team discussions and interactions during PBL contribute positively to the learning experience.	0.834

Table A4: Factorial Weights of the Independent Variable - Real-World Relevance

	Extraction
PBL projects are relevant to real-world situations.	0.889
PBL has helped me see the real-world applications of what I'm learning.	0.889