

**Implementation of project-based learning in English language teaching at the
lower secondary school**

**Implementácia projektového učenia vo výučbe anglického jazyka na druhom
stupni základnej školy**

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Abstrakt

DZIS, Danuta: *Implementácia projektového učenia vo výučbe anglického jazyka na druhom stupni základnej školy*. Univerzita Konštantína Filozofa v Nitre. Filozofická fakulta. Školiteľ: Mgr. Ivana Horváthová, PhD. Nitra: FF, 2024. 42 s.

Cieľom teoretickej časti je predstaviť vlastnosti, princípy, stratégie a výzvy implementácie projektového učenia. Empirická časť popisuje výskum realizovaný na druhom stupni základnej školy v Nitre, na Slovensku. Cieľom výskumu bolo zistiť, ako PBL prispieva k zlepšeniu rečových schopností žiakov 7. ročníka. Použili sme výskumnú metódu neštruktúrovaného pozorovania, ktorá nám pomohla preskúmať rozvoj rečových schopností žiakov v rôznych fázach projektu. Ako metodické nástroje sme zvolili “contact document” a písanie spätnej väzby. “Contact document” bol použitý na zhromažďovanie informácií o študentoch a ich pracovných výsledkoch v rôznych fázach projektu. Pomohlo nám to preskúmať skupinové diskusie, prezentačné zručnosti študentov, schopnosť vyjadriť svoj názor a riešiť skupinové konflikty s pomocou rečníckych aktivít.

Kľúčové slová: project-based learning, implementation, teaching, English language, lower secondary school

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List of Abbreviations

PBL – Project-Based Learning

ELT – English Language Teaching

Introduction

“Education is not preparation for life; education is life itself.”

Dewey (1916) claims that education should be built on students’ interaction with the real world. In Dewey’s view it means to learn through relations that demand interactions with native speakers, discovering cultural nuances and colloquial expressions. As John Dewey, Montessori emphasized the significance of the experiential learning. In her view, students learn most effectively when actively engaged in the learning process, rather than being passive recipients of information.

In today’s world proficiency in the English language is more vital than ever before. English has become the lingua franca of international communication, education, and business world. For learners, who study English as a second language, it is essential to encounter with real-life situations while learning in classroom. These real-life situations demand lots of skills. With PBL, students not only gain knowledge in grammar and new vocabulary, developing their listening and speaking skills, but also develop their personalities. For instance, through collaborative projects, students learn to respect other viewpoints, negotiate with peers, and develop critical thinking, problem-solving skills, and empathy – skills that are invaluable in both their personal and professional lives. PBL as an innovative teaching method is valued for its ability to facilitate learning by enabling students to boost their language confidence, teamwork collaboration, and persuasive communication (Mike Long in Khateeb, 2014).

In this work, we will explore the actual effects of integrating PBL into the teaching process at lower secondary school. By examining its potential, unique features, and fundamental principles, we aim to explain its authentic impact on student speaking skill development.

The thesis is divided into theoretical and empirical parts. The goal of the theoretical part is to introduce the Project-based learning (PBL) as an innovative teaching method, its’ features, principles, and challenges.

The theoretical part is divided into 5 chapters. The first chapter discusses the PBL’s philosophical foundations, mentioning its developers John Dewey, William Heard Kilpatrick, and Maria Montessori. The second chapter is dedicated to PBL features in ELT, focusing on Janet Poppendieck’s “Rethinking School Lunch” project as an example and comparing her implementation of the PBL with other authors such as Boss (2011) and Boardman (2022). This chapter will explain interdisciplinary learning, authentic environments, real-world participation, and age-oriented projects. Additionally, the chapter will introduce teaching strategies for implementing PBL. The third chapter tackles the process of using PBL in steps by Edutopia (2007), Perkins (2016), and Darrin

(2015). The fourth chapter refers to principles of using the PBL in the classroom based on Burns' (2019) study. In this chapter, we will list the set of elements that include the contract crafting and provide structure and support for students. Additionally, the chapter will introduce the contracts such as contact information, strengths and weaknesses, group roles, norms, and benchmarks. Finally, the last chapter will outline the challenges of using the PBL, stressing its connection to real-world.

The second part of the thesis refers to the research. The research aims to investigate how PBL contributes to enhancing speaking skills of the 7th graders. The research methodology discusses the pre-research, research problem, research questions, research methods and tools, description of the research. This chapter is followed by research analysis, conclusion, and resumé.

1 PBL's Philosophical Foundations

Project-Based Learning (PBL) is an innovative educational approach, that centers around students actively participating in solving real-world problems. Through meaningful projects, students engage in PBL to gain new knowledge and enhance a variety of skills. In PBL, students tackle complex challenges in different fields of study by investigating, creating, and presenting their solutions. Additionally, the approach aims to encourage students' independent thinking and problem-solving skills, utilizing creative methods like research and hands-on activities. The philosophy behind this method is rooted in *progressivism*, which opposes:

- *formalism*, emphasizing excessive focus on rules and external actions;
- *verbiage*, a lack of substantial information;
- and *authoritarianism*, which means strict obedience to the authority (Przybysz - Zaremba & Kołodziejcki, 2017).

In traditional education, students are expected to memorize content directly from textbooks and repeat it during lessons, without necessarily applying the knowledge in a real world, whereas progressive education encourages students to engage in a more interactive and meaningful manner. To put it briefly, progressivism challenges traditional teaching methods by emphasizing active learning, critical thinking, hands-on experiences, problem-solving, and practical application of knowledge.

The PBL finds its origins in the early 20th century. While it is challenging to attribute the founding of PBL to a single individual, John Dewey was one of the educational reformers who significantly influenced the development of this approach (In Leonard, 2023). John Dewey viewed the school as a “social laboratory”, meaning that students should learn through social interactions and real-life experience (Maida, 2011). His co-philosophers, and co-reformers were William Heard Kilpatrick, and Maria Montessori. Supporting student-centred approaches, and experiential learning methods, they rejected the traditional view of students as passive recipients. Instead, they shared a common belief that experience leads to knowledge. Out of these statements above, we can conclude, that John Dewey's and his contemporaries' viewpoint marks a fundamental change in educational beliefs.

2 PBL as the innovative method in ELT

In the context of today's contemporary education, PBL principles have been implemented and adapted by many educators and researchers, making it a widely recognized and effective approach what we know as a Project-Based Learning today. Boss (2011) introduces various projects by different educators who approached their works with the unique approaches to achieve successful results. One of such projects is "Rethinking School Lunch" written by Janet Poppendieck, a world recognized activist and sociology professor at Hunter College in the New York City. She is known for her books on hunger and food assistance issues. Through her project she encourages transforming lunchtime into an educational experience by engaging students in critical thinking about their meals. According to the author, her project can have positive effects on various aspects of society such as public health, academic performance, economics, and the environment. In 2004, she published "The Rethinking School Lunch Guide", which helped us to uncover four key project elements that she uses as crucial for project's effectiveness: interdisciplinarity, real-world characters, authentic places, and off-campus guests. In the following sections we will explore additional examples by different educators who have incorporated similar elements in their projects. Each of these elements contributes significantly to the overall success of the project, reflecting the broader applicability of PBL principles in contemporary education.

Interdisciplinarity

The forward examples will show that interdisciplinary connections foster a more realistic, engaging process and bring influential results, than teaching students subject by subject.

For Poppendieck (2010), successful learning in PBL, means to integrate the related subjects in the project, like science, health, social studies, and math through the lens of food, so that students can see the real-world relevance of what they are learning. For example, in her project she included science because it can help students to investigate food as energy, and math, to investigate food's weight. Similarly, National Youth Leadership Council (2004), incorporates multiple subjects into their projects. In the "Books for Children" project, students are required to write essays in Spanish for donation, and Boardman (2022) introduced the project, where English and Art are combined, enabling student to create her personal vignette into a video story, which helped to enhance her communication and public speaking skills. Integrating different subjects creates a positive atmosphere for comprehensive learning. By doing so, students can enhance their understanding and view the subject from a broader perspective. Poppendieck (2010) adds, that lessons should be suitable for students' learning needs, their age, and their competence in the subject. The activities should be aligned with academic standards of other subjects, inspiring discussion, exploration, and active

participation. Such age-appropriate, engaging, and interactive approach enables students to comprehend the content and express their thoughts effectively.

Authentic Environment

Deepening students' knowledge beyond classroom boundaries shows the practical relevance of integrated learning. In Poppendieck's project "Rethinking School Lunch" (2004), she mentions taking children to the garden, demonstrating how food connects them to the world. The author suggests that there are numerous equivalents for such authentic places, depending on the project's topic. For example, in her case, these could include cafeterias, kitchens, dining areas, and storage facilities. Working in real environment encourages students to observe and experience many factors relevant to their projects like healthy socialization among children, teaching them essential values such as respect, patience, and good manners. For example, while experiencing project in authentic environments, the author encourages students to immerse themselves in the sensory aspects of eating like smells, sounds, tastes, and other aspects, like decorations, food presentation, the behavior of nutrition services staff, and the quality of social interactions during meals. For example, children learn to wait for everyone to be seated and served, eat, communicate, and clear the tables together. As author claims, the development of these social skills will influence the culture of the entire school, which can bring great outcomes to the society. To fulfill the social skills of the students, the surrounding details play an important role either supporting curiosity in the project, or in contrast, distracting attention from the project's goal. For example, Poppendieck (2010) mentions to avoid unrelated or distracting materials such as advertisements while eating, as they might distract students' attention which will impede the project's effectiveness.

The authentic place becomes a crucial component either at the process or at the end of the project. For example, in case of Poppendieck (2010), the place was integrated during the project, playing a role of "demonstration", or as a tool of children's connection to the environment. However, as highlighted in Boardman (2022), student's project centred around creating a film about her childhood back surgery. The objective was to present the film at a public festival, emphasizing the importance of the connection between the individual and real-world context in the project outcomes. In this instance, the real-world context was integrated into the student's exploration of her past experiences, and the authentic environment was realized at the project's conclusion.

Participation of real-world characters

The success of the children's work depends on a support and feedback from the real-world characters like parents, classroom teachers, educators, administrators, board members, representatives of the superintendent, etc. All these different groups can create a shared vision for what teacher is trying to achieve through his project's plan. The choice of the real-world characters depends on the topic of the project and its goal. For example, in Poppendieck's project (2004)

“Rethinking School Lunch”, she mentions the possibility of involving stakeholders like nutrition services staff, the athletics department, principals, and school nurses. According to the author, it is important to know which members are influential with different audiences. In Boardman (2022) students were tasked with reading and writing personal vignettes based on topics like decisions, events, and people they knew. The project allowed students to explore personal experiences and turn them into creative narratives. One of the students chose to write a story about her recent back surgery, transforming it into a video story. This type of project enabled to invite the non-school guests like parents, who were attached to the real-life story of the student. After presenting the video-story, student mentioned, that she found it to be a meaningful way to connect with her parents, and after, discuss the past tensions with her familiars: “one of the problems that I had after my surgery was that they tried to be there, but I didn’t really feel like they were taking care of me. They got angry at me, and I got angry at them” (Boardman, 2022, n.p.). In contrast to Poppendieck’s perspective (2010), where the off-campus guests’ role is to monitor, evaluate, and recommend students, Boardman (2022) highlighted different aspect. In their case, guest played more psychological role which influenced parent-child communication. Discussing past tensions, fostered understanding and communication. This demonstrates, that PBL is not only about preparing for the future or connecting students with professionals to find future career paths. It can also be a valuable tool for resolving past issues, benefiting students by enhancing their relationships and fostering personal growth.

The impact of age-oriented projects

In Poppendieck’s (2010), the project’s title allowed to avoid strict age-oriented groups to its broader problematic topic. However, we can consider another project that was oriented on 6th-9th graders, providing various approaches on Service-Learning projects. The National Youth Leadership Council (2004) provided several examples of Service-Learning projects that can be implemented in a Middle school. One of such projects was “Libros para ninos” or “Books for Children”, proposing a target group of 7-8 graders who study Spanish. The project was introduced by a volunteer to inspire students for innovative ideas of how they can use their knowledge of Spanish to help children from sister city in Central America. Inspired by this, the students made books for Central American children. The students learned basic Spanish words to create books and wrote personal essays to accompany the donation. They assessed their progress through class discussions and received feedback from both teachers and peers. The completed books were shared among students and presented to visitors from the state’s Department of Education. Eventually, the books were sent to preschoolers in the sister city as part of the project’s conclusion.

3 Teaching strategies of implementing PBL

According to Edutopia (2007), when planning a PBL project, it is important to formulate an engaging open-ended question, that introduces a problem with no single answer. According to the author, questions are powerful tools for understanding. Therefore, it is essential to pick a real-world topic rooted in an authentic situation or community issue. For author, the ideal question is when it is relevant to students, dealing with a current issue they think can make a real difference, making it a “now” question with significance in their lives. After picking up an essential question, author advises focusing on content standards while designing a project plan. It is essential to get students actively involved and integrate different subjects together. The tasks should match the project's main question and fit into the curriculum. While designing a plan, it is crucial to be ready for any unexpected topics that might arise. The next step encourages establishing a flexible schedule, considering time allotment, and implementing specific techniques to ensure student success. Those involve setting benchmarks, teaching time management, and deadlines. In the fourth stage, the author outlines the importance of monitoring both students and project progress. It suggests facilitating the learning process, teaching collaborative work, assigning different roles in groups, and emphasizing individual responsibility for their work. In this stage it is essential to foster an environment where students can try new things under the teacher’s guidance. After, author mentions the importance of assessment in PBL. Assessing has different purposes like giving feedback, setting standards, and evaluating progress. It suggests students doing self-assessment and having discussions with teachers if there are differences in assessments. As mentioned in Edutopia (2007), the project should end positively. As the last step author encourages evaluating the overall learning experience and reflection. It suggests allocating time for both individual and group reflection, including activities such as journaling. The focus is on validating what students have learned, suggesting improvements, and sharing ideas for new questions and projects.

Perkins (2016) argues that PBL’s learning and planning process is often dynamic, indicating its non-linear nature. Considering this, the author introduces eight basic steps aiming to aid teacher and school in PBL. The author claims that many authors focus on content standards as the ultimate objective, instead, she proposes to start with the student and consider what they should think about and learn. In the first stage, Perkins (2016) invites educators to focus more on the needs and skills of the students, planning the learning process focusing on individual’s comprehension. According to the author, there should be a balance between individual and group accountability. This means, that goal is not to graduate groups or teams but individuals, suggesting a heavier emphasis on individual accountability. Subsequently, the second step encourages defining audience and purpose of the project. In this step, author mentions using observation and feedback sessions with

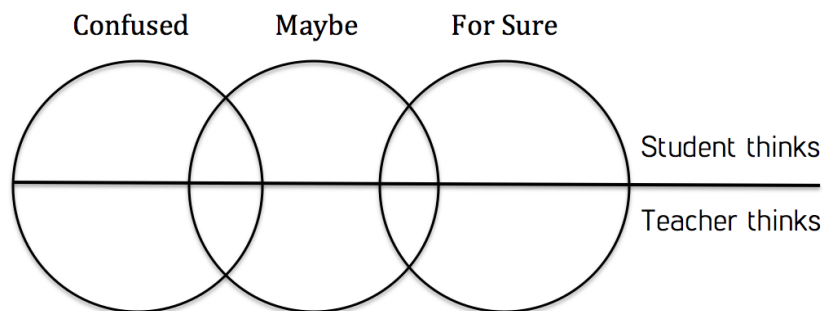
teachers and schools, focusing on students' ability to explain what they are doing and why. The ultimate goal for students is to comprehend the significance of their work in relation to the authentic purpose and audience. This serves as a foundation for teachers to guide students toward excellence by assessing how effectively their work meets the needs of the audience and aligns with the project's purpose. The third step suggests creating a driving question that engages students in and after, determine what students will need to know to complete the project. It emphasizes that students should engage in the process of answering this question, and if they can respond without thoughtful learning, there's a misalignment in the project. The effectiveness of the driving question depends on individual factors such as teachers, students, and specific project. It plays a role of "initial guide" serving as a useful tool for clarity during early project planning stages. Perkins (2016) proposes an example of the structure of how the driving question should look like:



Driving Question (Perkins, 2016)

As indicated earlier, the PBL does not follow a linear structure. Perkins (2016) recommends approaching the project from a student's perspective, considering the knowledge and skills necessary to tackle the challenge. It is essential to check whether students can finish the project and address the driving question without the required thinking and learning experiences. If not, it is necessary to revisit and refine the driving question and project focus to ensure students acquire the intended knowledge. The fifth step is to monitor both the students and the progress of the project. In this step, author encourages educators to create scenarios that prompt students to discover and articulate their "need to know" questions, fostering a shift from a teacher-centric to a student-centric learning paradigm in which educators support students in determining what they need to learn. In the sixth stage, after introducing driving question, and gathering students' "need to know" questions, the focus shifts to teaching. The author suggests using planning tools such as the Project Scaffolding Planner and a chosen planning calendar. Entering a project without a plan for teaching can lead to problems. Therefore, Perkins (2016) recommends guiding daily work, connecting the teaching process with students identified "need to knows". According to the author, successful teacher combines the systematic preparation of lessons with the skill of addressing students' needs and struggles. In the seventh stage, author encourages teachers to integrate more formative assessments such as observations, dialogue, peer critiques, or specific questions. It is essential that students are not only receiving instruction but also actively engaging in the learning process.

The author shares a useful method for students to self-assess their understanding, using a “confidence meter”. With this tool, students can express their thoughts without being concerned about grades, emphasizing a focus on learning rather than grades.



Confidence meter (Perkins,2016)

In the final step it is important for students to share their work with authentic audience. The author highlights, that “in many cases the student products often depend on the authentic audience.” (Perkins, 2016 n.p.). If teachers fail to specify the audience in advance, they miss the opportunity to improve the work to meet the needs of that audience. Additionally, all content and skills should not be evaluated only at the end of the project. Instead, it is important to carefully think on how to assess groups or teams versus individuals (Perkins, 2016).

Center for Teaching & Learning (2016) introduces various strategies and methods for successful integration of PBL into teaching. To foster critical thinking, collaborative skills, and real-world problem-solving in the students, the author outlines four steps of Problem-Based Learning (PBL): identifying a problem, agreeing on or devising a solution and potential solution path to the problem (i.e., how to achieve the solution), designing and developing a prototype of the solution, and refining the solution based on feedback from experts, instructors, and/or peers.

According to the author, the size and scope of PBL projects depend on the teacher’s goals. The students can complete four phases either during the extended period, or multiple times in one class period. As the author continues, projects can be either complex or simple. The brief projects can offer students significant opportunities to establish connections between different subjects and apply what they have learned. In the first step, students are encouraged to ask questions about the problem, its nature, the reason of the problem, and the possible solutions. In the second step, students brainstorm and discuss various ideas for solving the identified problem. The author suggests, that in this stage students should generate multiple of ideas, that are not necessarily have to be good. In other words, the quantity of the ideas is more important in this stage, than the quality of the ideas. In this phase, students are encouraged to develop such skills as creativity, diverse thinking, communication, and group problem solving. Next, students create prototypes of potential solutions. A prototype has various forms, such as a mock-up, storyboard, role-play, or a tangible

object made from simple materials like pipe cleaners and popsicle sticks. The third stage aims to test students' solutions which, according to the author, occurs in a real-world setting, providing students with valuable insights into how well their products or services perform. The results of testing offer feedback on the effectiveness of their solutions and may prompt new questions for consideration. According to the author, students tend to learn more from engaging in unstructured projects, than in highly structured ones. Unstructured projects, or open-ended projects, lack a pre-determined or clearly defined solution. In such projects, students are required to think of assumptions and constraints while defining the problem. By engaging in their own process of structuring problems, students not only tackle specific issues but also build a skill set that allows them to handle the challenges.

Darrin (2015) mentions Kilpatrick, an innovator in progressivism, whose influence was "overshadowed" by Dewey whom he strongly supported. Nevertheless, Kilpatrick is recognized as an influential educator of the early 20th century, who developed the Project Method. He stressed the importance of teaching children how to think, not dictating what to think. According to him, the focus should be on the social growth of the child, not just their cognitive development through studying material. Kilpatrick's Project Method combines elements from behavioral psychology and progressivism. This method involves four key steps: purpose, plan, execute, judge.

Firstly, teachers identify their objectives. Then, they create a plan to achieve these goals, which incorporates child-centered learning. The execution phase involves putting the plan into action. Finally, the teacher evaluates the success of the plan, assessing both students' performance and the curriculum. This assessment aspect also reflects the behavioral approach of the Project Method. In essence, the method combines behavioral observation with a child-centered focus on learning and emphasizes clear, observable goals and assessments. Kilpatrick believed in collaborative curriculum development with students, making them leaders in their learning process. (Kilpatrick in Darrin, 2015). This approach aims to increase motivation and improve students' decision-making skills.

4 Principles of using PBL in a classroom

According to Burns (2019), the group contracts play a crucial role in project management. These contracts help students to achieve learning outcomes in PBL, providing support, a structured framework for project progress, and real-world experience. Group contracts are the set of norms, rules and agreements, established by all members at the beginning of the project and can be documented either in digital or paper format. These contracts involve several elements. The first one is the contact information. With this document, students can choose the preferred communication methods like sharing email, phone numbers, or using platforms like Google Docs for document sharing. The next important element is recognizing strengths and weaknesses within the team. To understand and communicate strengths and weaknesses, the author recommends using team building activities. This part of the contract enhances teamwork. Another key aspect is group roles. The author claims, that roles are essential for effective functioning within a group. Providing students with roles like facilitator (or team leader that takes on responsibility of ensuring that all team members fulfill the assigned tasks effectively), liaison (communication facilitator between the group and authentic guest), team tutor (the person who regularly reviews the tasks and ensures that group understands them), and recorder (the person that documents, organizes, and oversees the team's work). The group roles help distribute tasks evenly and ensure everyone contributes. The author continues, that when students become more experienced with PBL, they can adjust roles according to the specific requirements of each project, allowing for more tailored responsibilities. Another key element is the norms or agreements setting. The author calls them as statements that help groups work together effectively and respectfully. For those who experience PBL for the first time, the author suggests teachers to provide agreements for groups, but as students become more comfortable, they can create their own. This part of the contract involves setting the consequences for breaking agreement, which can help for maintaining their effectiveness. For this, Burns (2019), suggests using the strike system, where warnings are given first, followed by a plan, and ultimately removal from the group if necessary. The author highlights the significance of teacher's role in guiding this process, that even if a team member is removed, they can still succeed. To succeed in project, the author continues, it is important to set a plan for absences. Another key element, that according to Burns (2019), is not necessary to include in the project, is setting the benchmarks. The benchmarks are specific points in the contract, that guide the progress towards completing the tasks of the project. They may include the dates or allow students to set their own to complete the tasks effectively.

5 Challenges in teaching PBL

According to McKay (2017), a lack of real-world connection is one of the main challenges in implementing PBL. The approach might lose its authenticity and capacity to inspire deep learning and engagement when lacking a meaningful connection to the real world. The author suggests teachers establish real-world links by exploring local or global issues, connected with students' personal interests. Such connection will help teacher to keep students motivated and engaged fostering a meaningful and relevant learning experience. According to author, the core of PBL lies in its approach of learning through investigation. This means prioritizing the process over the final products. By highlighting the significance of investigation and presenting meaningful questions, PBL enables students to develop problem-solving skills. McKay (2017) recommends avoiding planning that is not aligned with content standards of the project. In PBL it is essential to start with the end in mind, connecting standards to real-world learning. This involves determining the ways in which students will demonstrate their proficiency at different stages. Another challenge is assessing individual learning when students work in groups. Both the ongoing and final evaluations of individual performance are essential. To address this challenge, the other suggests including the methods such as incorporating self-assessment and peer assessment. In a good PBL classroom, students should work together and feel responsible. To make this happen, teachers can use strategies like small challenges and giving students the chance to establish the classroom rules.

The project is a part of a larger group effort. The advantage of the collective project is that group members are seen as supportive individuals assisting others in recognizing and identifying the problems (Gaurav, 2014). Through collective efforts, individuals in the group navigate challenges and take steps towards personal development, guided by the support of group workers. Group work, rooted in a humanitarian philosophy, draws inspiration from the happiness, joy, and prosperity of its members within a community. Gaurav (2014) calls it as an essential component of effective group dynamics. sharing experiences create a mutual desire for assistance within the group. Members support each other in times of need, and group formation enhances individual knowledge and skills. The sense of belonging and a helpful mindset foster knowledge-sharing among members, leading to increased understanding of science, resources, and techniques.

6 Research Methodology

The Research Methodology is grounded in theoretical principles related to project-based teaching. As it was mentioned above, apart from personal skills, using PBL improves language skills. Mike Long in Khateeb (2014) describes how the gained personal skills in PBL enhances students' speaking skills. For example, when practicing English, students gain language confidence which helps them to articulate their thoughts, presenting them persuasively.

Our primarily focus is on the effectiveness of PBL in terms of the development of the speaking skills. We aim to determine how students can enhance speaking skills in different phases of the project and achieve those effective results mentioned by Mike Long in Khateeb (2014). In other words, the speaking skills whose effectiveness lay in formulating the thoughts, communicating persuasively, thinking independently,

This chapter contains pre-research phase, research problem, research questions, research methods and tools, and research results.

6.1 Pre-research

The pre-research phase was provided in two main stages: the preparation and realization phases. In the first phase we were preparing the project for the English language subject based on the principles proposed by Poppendieck (2001). In this phase we searched the school, the institution to collaborate with. After establishing the agreement between the school and the institution, we identified the length of the project which was 2,5 weeklong and established the dates of the project realization which was from 30.11.2023 – 18.12.2023. After agreeing with the topic of the project with the institution MSU (Labor Department in Nitra), we formed a platform in a form of the online presentation which was created based on the Perkins (2016) and Edutopia (2007) recommendations on stating the PBL stages. In this process, we developed a set of lesson plans, contract documents, and materials for outdoor activities. Subsequently, we moved on the realization phase, which involved a series of eight 45-minute lessons. The lessons will be described on day by day in the form of the stages in the upcoming sections, offering a comprehensive view of each stage activities.

6.2 Research problem

As mentioned earlier, Poppendieck (2010), National Youth Leadership Council (2004), and Boardman (2022) were mainly focused on the real-world problem and used subjects as a tool to solve the chosen real problem of their project. For example, when realizing the project “Rethinking

School Lunch”, Poppendieck (2010) focused on the main problem of the project and used math and science to investigate food’s weight and energy. Here, the subjects played role of the tools that helped to succeed in the project. In other words, to solve the real problem. Similarly, National Youth Leadership Council (2004) in the project of “Books for children”, focused on the need for a donation to help children from another city. To achieve this, the participants of the project required Spanish subject as main tool to write essays for donation to the children. Considering these 2 projects, the authors chose the problem to help the society. Correspondingly, Boardman (2022) approached PBL in response to the challenges students faced during the pandemic. COVID 19 impacted negatively on students’ academic performance, including the interest in the subject and the enthusiasm. Boardman (2022) approached it as a real-world problem and combined Art with English to enable one of the students to create her personal vignette into a video story with the goal to enhance her communication and public speaking skills. These projects were focused on the students’ knowledge of subject and their readiness to use the subject as a tool to solve the real-world problem. Comparatively, we are interested in using real-world problem as a tool to enhance the English language speaking skills in the 7th grade class. The goal is primarily put on investigating the development of speaking skills of the students during the different phases of the project. *The research problem:* How does the choice of real-world problem of the project enhance speaking skills of the 7th graders?

6.3 Research questions

Following our research goals based on theoretical principles and studied literature, we established the following three research questions:

Research question n. 1: How does PBL method contribute to enhancing students’ speaking skills in English language?

Research question n. 2: What are the potential benefits of using PBL to enhance speaking skills?

Research question n. 3: What are the challenges of using PBL to enhance speaking skills?

6.4 Research methods and tools

In order to achieve the set goals and verify the research questions, we selected the qualitative research methodology:

6.4.1 *The non-structured bservation*

The non-structured observational analysis will focus on the stages of the project, exploring the development of speaking skills of 7th graders in terms of English language subject. The process is realized based on our personal teaching experience.

6.4.2 *Contract document*

The contract document was used to gather information about students, the set norms and roles, their work outcomes throughout different stages of the project, the self-assessment sheets, and draft sketches like a group letter to the authentic guest. The contract document had two functions in helping us to investigate the research questions. Firstly, it served as a physical document of gathered information that helped us to turn back to the concrete stages again and again of the project and analyse student performance. Then, it served as a set of activities that helped us to investigate the group discussions, students’ presentation skills, the ability to express the agreement or disagreement and solve the group conflicts in a form of spoken discourse.

6.4.3 *Feedback writing*

The feedback writing was filled out by students at the end of the project.

The following table provides a short summary of the research problem, research questions, research methods and tools.

Table n.1: Research problem, research questions, research methods and research tools

Research problem:		
How does the choice of real-world problem of the project enhance speaking skills of the 7 th graders?		
Research questions:	Research methods:	Research tools:
1. How does PBL method contribute to enhancing students’ speaking skills in English language?	-non-structured observation	- contract document -feedback writing
2. What are the potential benefits of using PBL to enhance speaking skills?	-non-structured observation	- contract document -feedback writing
3. What are the challenges of using PBL to enhance speaking skills?	-non-structured observation	- contract document -feedback writing

6.4.4 Participants of the research

The research involved 13 seventh – grade students at the lower secondary school UNES in Nitra, who participated in the project named “Silent streets: Transforming the Pedestrian Zone”. The students had English language 4 times a week including 2 conversation classes in English language. The lessons were co-taught by two teachers – one being a foreign teacher, and the other a Slovak English teacher. The class included students specializing in sports, resulting in occasional absences. The selection of the research sample for filling contract documents was deliberate due to the fact that only some schools use project teaching in foreign language classes.

7 Research description

Stage 1 – start with the student.

Perkins (2016) suggests perceiving the project as a journey for students to acquire various skills. The project might begin by emphasizing an authentic purpose, audience, or by building upon student-generated product ideas. According to the author, it is essential to ensure that the project aligns with what students need to think about and learn in the end. In essence, the method for initiating project ideas may vary, but the ultimate goal should always be to foster meaningful learning experiences for students. Based on this suggested approach we seized the opportunity to begin with understanding the students first, their interests and personal preferences regarding the usage of the streets. Then, we followed Edutopia's (2007) recommendations on creating a schedule of the project. In our case, it was project week's calendar with its' role to introduce the project, its' forward activities, informing and preparing students for following stages of the project. In this phase, we tried to create a convenient atmosphere for students to share facts about their personality and their interest in the usage of streets. Next, to introduce the problem of the project, we presented a thought-provoking video titled "We are using our streets all wrong". The video aimed to enhance listening skills and strong debate about the street plan, pedestrians' and cyclists' rights on using the pedestrian zone. The communication was supported by questions:

1. What kind of city people want to live in?
2. Why the spaces in between buildings are important?
3. Do you think pedestrians and cyclists have the same right to use the pedestrian zone?
4. When do the places, buildings, and overall look of the city make you feel really happy?

The questions were prepared to foster a critical thinking on the use of streets and individual perspective on the subject matter. Following extensive discussion, the students are asked to create a visual representation of the ideal street, including the objects that make their streets unique. Following this, students' work was presented in front of the classroom audience. All activities were intentionally designed to allow students the choice of working either collaboratively in groups or independently.

Challenges Faced: The initial challenge involved technical issues like the unavailability of the interactive board due to unforeseen fix and the absence of the necessary cables to display the title page of the project, and project first week calendar on the screen. Given the heavy reliance on modern technology for our project, these issues presented significant complications. Furthermore, the relocation to another classroom resulted in a constrained timeframe for the planned speaking and listening activities. Fortunately, we managed to secure access to the computer room for the rest of the project.

The challenges necessitated quick and effective response, avoiding time-consuming discussions and allowing us to refocus our efforts on essential tasks.

Stage 2 – *the audience and the purpose*.

This stage involves defining the audience and clarifying the purpose of the project. Perkins (2016) suggests using observation and feedback sessions with teachers and schools to assess students' ability to explain what they are doing and why. For our two-week project, we adopted Burns (2019) document crafting approach, which includes contact information, strengths and weaknesses, team roles, and a group collaboration agreement. This framework helps clarify students' roles and the project's purpose efficiently. In the following section we introduce the description of each part of the document crafting process that we adapted to align better with the requirements of our project.

Contact Information

The contact list serves as a handy tool for the students, who are going to be contacted or informed about project in case of their absence. We included three sections: name, contact information and “the field you are interested in”. The third section was inspired by Burns (2019), where he suggested to put there for example area for growth, but instead, we chose to present several activities that can be realized in the next phases of the project.

Strengths and Weaknesses

Burns (2019) suggests this activity helps students know themselves and their group dynamics. It encourages open discussions about strengths and weaknesses within the group, with examples to aid understanding. In our implementation, we have decided to utilize a SWOT analysis, providing questions that focus on students' personalities and their attitude towards the group collaboration in the project. Through this exercise, the students managed to find out not only about themselves but also their peers. Each part had two questions:

Strengths:

1. What do you think you are really good at?
2. How do others describe your strengths?

Weaknesses:

1. What do you think you are not good at?
2. How do others describe your weaknesses?

Opportunities:

1. How can you contribute to the project as an individual? (strengths vs weaknesses)
2. How can you contribute to the project as a team? (strengths vs weaknesses)

Threats:

1. What unexpected problems might appear during “Transforming the PediZone project”? Note possible solutions.

2. Do you think that weather can cause problems in our project? Give examples.

The contract crafting aimed to help students get closed to the topic of the project and foster confidence and responsibility contributing to the project. In this phase it is necessary to help students to think how they can contribute to the project with their strength and weaknesses and how they can contribute as a team in case of obstacles.

Team Roles

Sharpe (2014) provides a standard list of roles and descriptions to guide teachers in facilitating effective collaboration. The author recommends presenting this information to students early in the project to establish clarity and successful teamwork. To avoid unequal participation within groups, Sharpe (2014) suggests giving students autonomy to choose their roles. For our project, we incorporated roles such as Task Manager, Facilitator, Team Leader, and Liaison. In a classroom setting, we are going to present each role along with a clear description and provide examples of phrases associated with each role.

The Task Manager, for instance, keeps the team focused on daily tasks, fostering discussions, monitoring if anyone is talking outside of her/his team, and guiding the team in articulating project's outcomes, findings, and answers. The Task Manager mostly uses phrases are "Ok, let's get back to work!" "Let's keep working", "What does the next question say?", "Explain how you know that" "Can you prove that?" "Tell me why!".

The Facilitator plays a crucial role in initiating the team activities. The responsibilities include requesting a team member to read the task orally, making sure each person understands the task, and before anyone moves on, ask to make sure each team member understands the team's answer. The Facilitator frequently employs the key phrases: "Who wants to read?" "What does the first question mean?" "Do we all agree?" "I'm not sure I get it yet – can someone explain?" This role is designed to promote effective communication and comprehension within the team, fostering a collaborative and cohesive working environment.

The Team Leader is tasked with keeping the group focused on the assigned task, ensuring active participation from all members, obtaining necessary materials, and serving as a liaison between their group, other groups, and the instructor. Responsibilities include setting deadlines, monitoring group progress, issuing warnings when necessary, and serving as a motivator while keeping track of each member's contributions. The Team Leader can't miss more than 2 days of school without a legitimate excuse.

Liaison is the "go-between person" for the team and external adults such as experts or organizations. He/she provides valuable feedback on the team's work, offering positive reinforcement and constructive suggestions like "Great job on...", "I really liked how you...", or "Next time, try to...". The liaison ensures the project matches the needs and interests of the guest, asking questions like

“What is your hobby?” or “Are you interested in...?”. Additionally, this role involves guiding the team in the development of communication and collaboration skills, encouraging phrases such as “listen to each other” and “What do you think...?” to foster effective teamwork.

Norms

According to Sharpe (2014), norms foster respectful and effective collaboration within a group setting. The author claims that process of establishing agreements can be scaffolded throughout the year. Initially, the teacher may provide a set of agreements for all groups, followed by a class reflection to assess their effectiveness. Students are encouraged to formulate specific and relevant agreements for their individual groups. This approach aims to create a collaborative environment tailored to the unique dynamics of each group. Burns (2019) suggested to establish the rules and strikes in case of breaking the rules collaboratively. Since students were going to experience PBL for the first time, we agreed to introduce them the possible rules first, and then, give them opportunities to rewrite the rules.

1. No music when we are working together.
2. Finish tasks on time.
3. Be responsible for the task of your role.

After, we prepared three possible strikes in case of breaking the rules:

Strike 1: Warning given by group members.

Strike 2: the teacher helps the group make a plan.

Strike 3: Remove from group for a short time or for the whole project. OR work things out and keep the person.

Burns (2019) recommends using Google Documents for sharing the group contract, encompassing team members’ details, group objectives, assigned roles and responsibilities, established team norms, agreements, and signatures. However, for our project, we agreed to provide a Group Collaboration Agreement in A4 format for each student, outlining the set rules, and corresponding consequences for rule violations. The intention behind this approach is to evoke within students the sensation of signing the document as though it were an “employment” agreement.

Stage 3 – pre problem exploration

In this stage, Edutopia (2007) suggests establishing a flexible schedule, setting benchmarks, teaching time management, and incorporating deadlines to ensure student success. In comparison, Perkins (2016) emphasizes creating a driving question to engage students and determine necessary knowledge for project completion. Due to our short-term project, we agreed to follow Perkins (2016) recommendation on approaching the project from a student’s perspective. To create a driving question, we agreed to give students opportunity to find out a problem on their own first, and then exploring the pedestrian zone. For such pedestrian zone analysis, we picked up the day when

they have two 45 minutes long classes of English. For this stage we managed to prepare instruction of the plan for pedestrian zone analysis which included the Old Town Photography activity. For this activity, the students will be tasked with capturing “now” photos of locations depicted in 6-7 old photographs. In case of having students that prefer individual work more, we prepared the individual PediZone Analysis activity. In this activity, the student chooses either a cultural-historical or the social environmental aspect. After choosing, the student receives the list of items located in the pedestrian zone, and after finding them, he/she answer the questions for the individual analysis of the pedestrian zone. In the end, all the data analysis is going to be collected by the team leader or shared among the whole class through modern media.

Stage 4 –problem exploration

Perkins (2016) calls this stage “*determine what students will need to know*”. The author finds it essential to ensure that students have the necessary skills to tackle the project’s driving question. According the author, process should involve self-reflection from the perspective of a learner, intentional planning, teaching, and assessment. In this stage, we will introduce students’ work from the previous stage and analyse the streets comparing the past and present photos. This activity will help students to identify the current situation of the pedestrian zone, its challenges and possible solutions. For this, we received a map of the pedestrian zone in Nitra by the head of the transportation department in Nitra – Matúš Maruniak. The activity involves dividing the students into the groups and giving each group one printed map. The students have to find the exact location of the PZ in Nitra, identifying the streets and landmarks that the students have already encountered in the pedestrian zone the previous day. In this stage students are allowed to use internet sources for the information about the city and its features. The activity is supported by group presentation of the found information, fostering the presentation skills, which developed speaking and reading skills.

Stage 5 – determine teacher actions, create a driving question

Perkins (2016) proposes shifting the focus from the teacher to a student and encourage a more engaging learning experience. In this stage, we agreed to give students opportunity to take on the initiative to proceed in the project, expressing own perception of how the project would work in the forward steps. Firstly, we are going to provide students with their taken pictures, and after, in groups, the students will have to propose their own ideas of what could be changed. This stage requires discussions about the possible solutions to the project’s problem, the useless buildings reconstruction etc.

Stage 6 – help them learn what they need to know

Similarly, as in the previous stage, the author suggests teacher to identify how to help students think to learn about the content and skills. This includes preparing the guiding questions for daily work and connect teacher’s instructions to students’ learning needs. To achieve this, we are going

to introduce the information about the authentic guest of the project, Matúš Maruniak, who holds the position of head of the transport department in Nitra. Such beginning of the lesson will foster discussions on about the final product and the form of presenting the final product to the guest. To help students, we will offer series of engaging activities designed to inspire fresh insights about the possible final product. The students will be initially tasked with finishing the last crafts if needed, and then, start with the Skill Session activity. The activity includes three proposed sub activities: transforming the buildings and places through the photo edit apps, editing the video of the pedestrian zone, and composing an appeal message for the head of the transport department. All of the activities will be supported with the use of authentic tools and sources like editing the photos with a Snapseed app, edit the video through a CapCut app and composing an appeal message with the help of AI to search the ideas on how to improve the appeal message.

Stage 7 – assess

In this stage, Perkins (2016) suggests encourage students who do not understand or confused about the final product. In this stage, we are going to help students achieve their results based on discussions about their vision of the project, and the proposed solutions. In this stage, we are going to encourage students to write an appeal text together using the Word Documents and screen sharing so that everyone will be able to see and correct their and classmates' sentences, adding their ideas. This activity aims to avoid constant teacher's hand in correcting each sentence. We hope the activity will foster a discussion where everybody, can correct the mistakes, and only at the end, when everybody can see the whole text on the screen, the teacher will correct the mistakes silently. The group activity will be deliberate and therefore, we are going to propose students either writing the text within group or individually.

Stage 8 – publish with the intended audience

The final stage won't require the specific tasks outlined in the presentation; the only task is to finish what is needed for the final product. Following this, we are going to provide students with questions about their collaborative experience in this project, reflections on the project's outcome, and their point of view on this distinctive English study approach. To facilitate this discussion, we will prepare each student with a set of questions introduced on the board: "What aspects of the project did you enjoy the most? What would like to change in the project? What do you think about this approach to studying English at school?" Using the piece of paper, the students will answer the questions, and subsequently, share the answers within the class. The students will be informed via email when the head of the transport department will give a feedback on their work.

8 Research Analysis

The chapter describes the research analysis by answering the research questions. Before answering the questions, we would like to state, that the project outcomes are derived from a short time project named “Silent Streets: Transforming the Pedestrian Zone”.

8.28.1 How does PBL method contribute to enhancing students’ speaking skills in English language?

By examining the PBL’s contribution from the initial stage to the conclusion of the project, we observed how PBL principles stimulated students to speak through different stages proposed by Perkins (2016).

Starting with the first stage “start with the student”, the PBL allowed to use a range of activities to warm-up students’ for open conversations, focusing on their readiness to speak up about their personalities, interests, and what they already know considering the project’s topic. Considering the fact that it was our first-time meeting with the students, this stage showed how its important to start with the communication and provide questions that would introduce the students to each other. Additionally, the stage required choosing the vocabulary based on the topic of the project, that students will use till the rest of the project: streets, pedestrian zone, sidewalks, bicycle lane, cobblestone street, statues, sculptures, seating area, head of transportation department etc.

The second stage involved contract crafting which allowed discussions about students’ strengths and weaknesses, possible problems, their solutions, and the role division. The activity allowed to practice future tense when planning the project, discussing possible challenges and its solutions using the structure “subject + would + infinitive”. For example, when answering the SWOT questions, the students wrote their answers using a freeform expression without constraints on grammar or sentence structure. After, they used these “sketches” of self-analysis as a basis to reflect from them and articulate the thoughts orally. Similarly, the division of group roles provided opportunities for language used in expressing agreement and disagreement as well as formulating and defending personal viewpoints. This part of the contract crafting showed how division of team roles evoked spontaneous conversations between students, evoking responsibility and critical thinking. For instance, when reading the descriptions of roles, the students measured themselves in those roles and then recognized others that have similar character as the role describes. Some of the students rejected on taking the specific roles, expressing concerns about associated responsibilities. This required persuasive language to convince peers to take on specific roles, or in contrary, giving a clear explanation of not taking those roles. Additionally, the activity required shy students to voice their thoughts and talkative ones to listen attentively.

Since the third stage of our project was realized in the pedestrian zone for a locality analysis, the activities did not require speaking skills in English language. However, the fourth stage known as “problem exploration” involved the analysis of the students’ work in the pedestrian zone which was to take the “now” pictures of locations printed in the old photos. The activity required students to use the comparative structures for photo comparison and past simple tense to discuss the experience in the pedestrian zone.

Given that the students had never experienced PBL projects before, thanks to PBL, it offered a space for students to practice and enhance their speaking skills based on the situations.

8.38.2 What are the potential benefits of using PBL to enhance speaking skills?

PBL promotes diversity in every stage that motivates students to be actively involved in discussions. Firstly, by introducing the following week tasks, that involved not only the new terminology such as “contract crafting” or “pedestrian zone” but also a diversity between activities of the days. This fostered a long-term motivation and active participation in every discussion as students know what activities are followed, why they are doing these activities and what guest is waiting for their project results. For example, the pedestrian zone analysis demanded more time for its realization. For this reason, we asked students to participate in the non-obligatory last lesson “Conversation in English” to have more time in the pedestrian zone. Since the class involved the sport students, not everyone could participate in this activity. On the day of the activity realization, one of the students were motivated by seeing everyone going to the authentic place and receiving engaging roles such as “photographer”. The student called his parents to skip the after-school activity, to join the group for a fun activity. This shows, that PBL manages to motivate at different stage of the project. Another example is writing an appeal message to the authentic guest. No one of the students wanted to write an appeal text unless knowing that they can work with an AI.

The diversity of the day-to-day activities fostered not only interest, but constant changes in the steps that fostered a quick development of language usage in real-life situations. For example, when writing a group letter to the head of transportation department, the students were initially agreed to write an email letter. However, during the process, one of the students proposed creating a video message which changed the plans and required everyone to adapt to new decisions. Without speaking, the students would not proceed in the project, as everything was communicated among the peers. The frequency of using spoken language in different situations allowed students to join the discourse at different stages. The less speaking students or those who lacked the confidence waited for an adequate moment to express themselves. Those comfortable moments for

conversation PBL succeeded in group role divisions, norms, own work presentation and even the impact of the authentic place. For instance, when students were divided into the two groups in the pedestrian zone, the first group included students that mostly spoke, the students that were not afraid to take on responsibility for the task. Another group appeared in the situation that required them to take on responsibility. This showed that students were ready for oral communication when they felt needed and engaged in the tasks. Our experience showed that PBL expects students to engage in the process providing different tasks that students can join at different levels of the project and start speaking when they feel comfortable.

8.48.3 What are the challenges of using PBL to enhance speaking skills?

The first challenge was to skip the planned tasks that required more time for speaking such as discussion of students' visual representation of the ideal street. The tasks were overlooked due to unexpected issues. For instance, the day project started, the interaction board was found broken, and the school failed to inform us beforehand. This necessitated a quick decision making to adapt the project plan, prioritize tasks and ensure students' needs were addressed immediately. The PBL often demanded similar actions. For example, after analysing the pedestrian zone, the students lacked time to enjoy the Christmas Market time together in the area. This highlights the need for more time in PBL projects to discuss all the possible issues not only at the second stage but also every time before doing these tasks.

Given that the students were encountering PBL for the first time, the 5th project stage proved to be the most challenging, providing an opportunity for the development of problem-solving skills. In this stage students were asked to write an appeal message to the authentic guest. In PBL, the students would come to such activities or ideas naturally, but due to the first-time experiencing the PBL, we had to monitor the tasks. It gave the students the exact ideas to follow, but demanded the manner of doing the activities, which caused the biggest challenge to a project. Since in that stage, we firstly questioned of how the guest would read the text, we agreed to save both ours and his time and send an appeal text in a form of a video message with a real voice that would read the message. All the activities were corelated so that when students started their work, they realized it was impossible to accomplish everything at once. For example, one group downloaded an app for editing the video but could not edit it because of the need to hear an appeal text first. Since another group just started writing the appeal message and obviously needed some help, we have managed to change the plan. After everybody started the half of their work and some of them could not continue for certain reasons, we have decided to continue an appeal message together to save the time and add each team member's idea. We would call this day a decision-making day. It was enough 45-minute lesson to agree on the product and how present it. Additionally, in this stage,

those students who were initially absent from the project, joined the class, causing a disturbance in the group's dynamics, and unfortunately did not manage to follow the instructions cause the size of the project was short, through this we understood how each stage of the project is important either for motivation or comprehension.

As was mentioned above, considering that the "Silent streets: Transforming the Pedestrian Zone" project was a short-term project, students who missed the initial two stages tended to distract the rest of the class. Since explanation of the project to new students was at the same time important but still time consuming, we faced the challenge of integrating students who join the project lately and those who took on the roles and failed in accomplishing them due to their absences.

Conclusion

In conclusion the work showed that PBL has to adapt to the type of the project, its length, and issues to enhance students' speaking skills. With its stages and contract crafting the PBL allowed for wide range of activities to practice fluency when working individually, practice confidence when distributing the tasks, practice intonation when recording the voice for a video message and use active listening before making decision of how to proceed in the project.

Since the students were experiencing the PBL for the first time, the project showed how "something new" requires more time especially for communication. The PBL showed how speaking can be taught through engaging projects, allowing students to gain confidence in speaking. Throughout the different stages of the project, PBL encouraged students to engage in speaking activities, starting from basic introductions and vocabulary building activities to more complex discussions about project tasks. The diversity of the activities fostered motivation and encouraged students to actively participate in discussions about the real-world problem. Despite the challenges such as integrating the latecomers and facing unexpected disruptions, the challenges required the quick decision making and adaptability from both students and teachers, providing opportunities for collaboration and problem-solving skills.

Resumé

Na záver práca ukázala, že PBL sa musí prispôbiť typu projektu, jeho dĺžke a problému, aby sa zlepšili rečnícke schopnosti študentov. Svojimi fázami a zmluvnou tvorbou PBL umožňoval široké spektrum aktivít na precvičovanie plynulosti pri prezentovaní svojich schopností v projekte, precvičenie intonácie pri nahrávaní hlasu do video správy a aktívne počúvanie pred rozhodnutím, ako ďalej postupovať v projekte. Keďže študenti zažili PBL prvýkrát, projekt ukázal, že „niečo nové“ si vyžaduje viac času najmä na komunikáciu. PBL však ukázalo, ako sa reč dá vyučovať prostredníctvom zaujímavých projektov. Počas rôznych fáz projektu PBL povzbudzovala študentov, aby sa zapojili do rečníckych aktivít, počnúc základnými úvodmi a aktivitami na budovanie slovných zásob až po komplexnejšie diskusie o projektových úlohách. Táto rozmanitosť podporila motiváciu a povzbudila študentov, aby sa aktívne zapájali do diskusií o skumanom probléme. Vyskytnuté výzvy si vyžadovali rýchle rozhodovanie a prispôsobivosť od študentov aj učiteľov, čo poskytovalo príležitosti na spoluprácu a zručnosti pri riešení problémov.

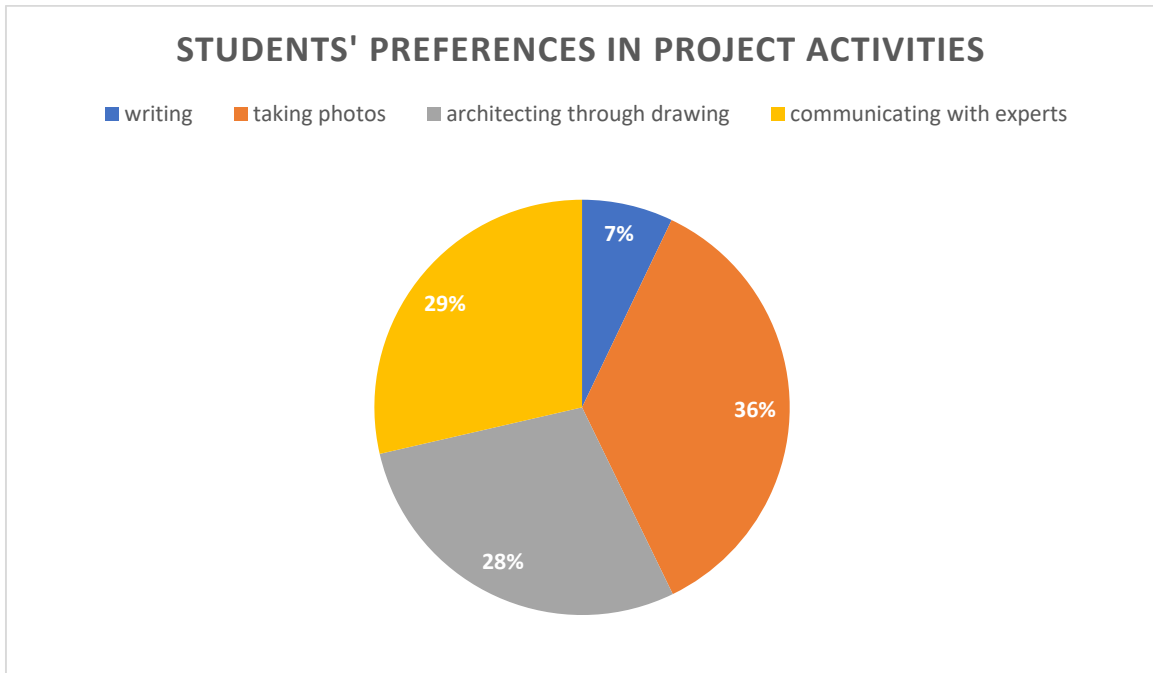
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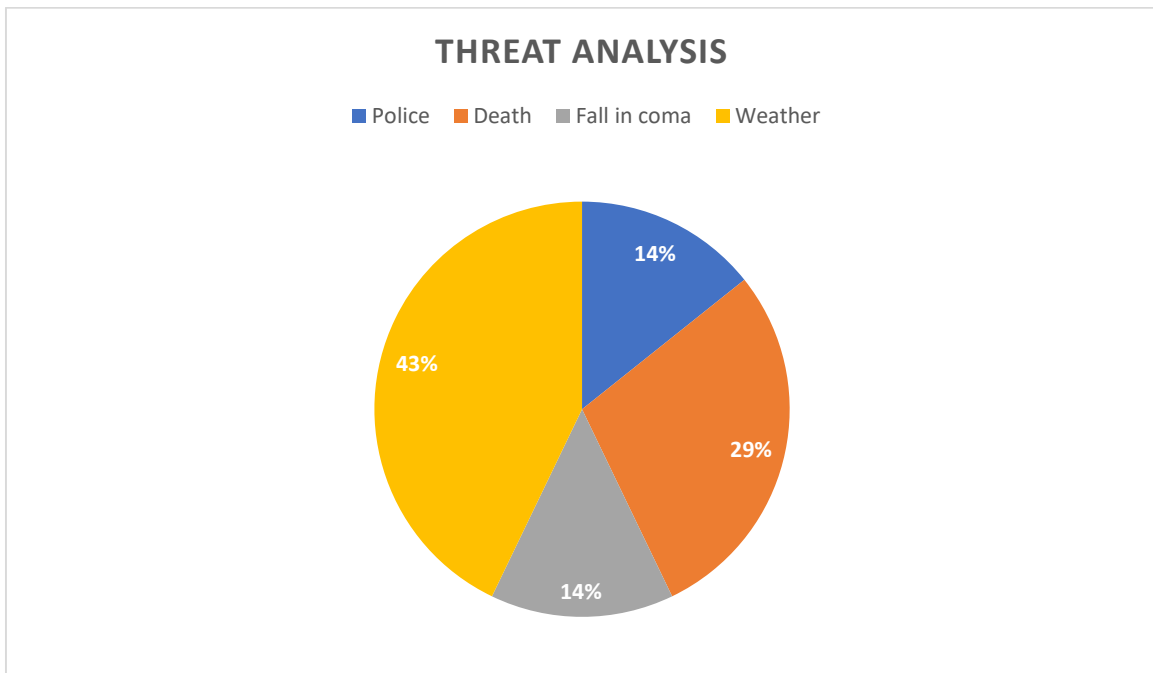
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Appendices

Appendix A:
























Appendix B:



Appendix C: Contact Information

Name	Email/Contact Info	The field you are interested in:
		a) writing b) taking photos c) architecting through drawing d) communicating with experts
		a) writing b) taking photos c) architecting through drawing d) communicating with experts
		a) writing b) taking photos c) architecting through drawing d) communicating with experts
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		a) writing b) taking photos c) architecting through drawing d) communicating with experts
		a) writing b) taking photos c) architecting through drawing d) communicating with experts

Name _____			
	Not yet	I can/know, but not perfectly	I can/I know
1. I can easily identify 3 streets on the Pedestrian Zone in Nitra.			
2. I can name at least 4 landmarks located on the Pedestrian Zone in Nitra.			
3. At least 3 of them I can easily describe/give information.			
4. I can compare how Nitra was before and how it is now.			
5. I know why there are less people on the PZ in Nitra.			
6. I know how to improve the PZ in Nitra.			

Appendix E: (used as an extra activity at the pedestrian zone for group A)

Historical-cultural aspects analysis

Traditional Food ___ Yes ___ No

1. What kind of food do most of the restaurants on the Pedestrian Zone propose?
2. Are there any restaurants with titles that make it easy for tourists to find typical Slovak food on the Pedestrian Zone?

Street Performers ___ Yes ___ No

1. Whom did you see among the street performers on the Pedestrian Zone? (e.g., jugglers, magicians, dancers, musicians)
2. Where exactly they performed? Which part of the PZ?
3. Did the street performers have enough space to showcase their talents?
4. (if there are NO performers) Why do you think there are no performers on the Pedestrian Zone?

Buildings:

1. Name three buildings that are the most attractive to you on the PZ.
2. Are there any of the building that needs to be restored?

Overall analysis:

1. Do you feel like the PZ is big or small for you?
2. Is it clean and tidy in the PZ?
3. How many people are in the PZ?
4. How do you feel when you're in the PZ? Do you feel comfy and safe?
5. What do you like the most about the Pedestrian Zone?
6. How PZ should be improved?

Appendix E: (used as an extra activity at the pedestrian zone for group B)

Social-environmental aspects analysis:

Pedestrians vs. cyclists:

1. How many people you found in the PZ?
2. Did you spot any cyclists in the PZ?
3. How do you feel about the interaction between pedestrians and cyclists on the Pedestrian Zone? Do you think it is safe for both?"
4. In your opinion, should there be specific areas for pedestrians and cyclists, or do you think they should share the entire Pedestrian Zone? Why?
5. Are there any parking zones for cyclists?
6. What kind of services you found there that you think there are “too much” of in the PZ?
7. Walk around and take photo of the places/corners that:
 - you’d like to improve
 - useless places/objects/buildings/shops/services

Overall analysis:

1. Do you feel like the PZ is big or small for you?
2. Is it clean and tidy in the PZ?
3. How many people are in the PZ?
4. How do you feel when you’re in the PZ? Do you feel comfy and safe?
5. What do you like the most about the Pedestrian Zone?
6. How PZ should be improved?

Zone Aspect analysis			
15 MIN.			
CULTURE	HISTORY	SOCIETY	ENVIRONMENT
public art	statues, murals, paintings	sidewalks	natural play areas
traditional food	old/modern buildigns	bicycle lane	green infrastructure (roofs, walls)
street performers	architectural elements	space for cars	trees, flora, fauna
local business	vintage lampposts	event platform	bicycle parking
cultural festivals, events	clock towers	lighting	water features
sculptures	cobblestone street	seating area	local wildlife: parks, gardens