

*Developing English-Speaking Skills of Engineering Students Through
Project-Based Learning in Uzbekistan*

Gulbakhor Mamadiyeva, New Uzbekistan University, Uzbekistan

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Abstract

Traditionally, engineers are known as problem solvers as they deal with various kinds of issues and suggest possible solutions. One of the vital aspects is to enhance their problem-solving skills from the first year of their studies at the university and at the same time improve their English language skills. Project-based learning is a method that allows students to work in teams and come up with novel ideas and modern solutions to a particular problem. This paper will discuss the efficiency of project-based learning in improving speaking skills in English as well as developing the soft skills of engineering students in Uzbekistan. The freshman students of New Uzbekistan University are provided the chance to present their startup projects to solve the problems they discover in the country. Teams worked together to identify a problem, search for possible solutions, and present their ideas. The process required a month to prepare for the project. This task was assigned to students who were willing to participate in this project. After the presentation, a post-survey was conducted to find out the results of the project-based learning. The participants stated that they improved their English speaking as well as reading skills in the process of preparing the projects. In addition to this, students claimed to have developed their public speaking, teamwork, and communication skills during the project.

Keywords: Project-Based Learning (PBL), English Speaking Skills, Reading Skills, Public Speaking, Teamwork

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Introduction

The English Language is used worldwide as an international or Lingua Franca in many countries. English is the language that helps people with communication, business, and other purposes. One more essential sphere where English is widely used in Education. Many universities and institutions' instructional language is English as this language is appropriate to learn about science, law, business, and engineering. New Uzbekistan University is one of the universities in Uzbekistan which conducts all lectures and labs in English. The students are acquiring knowledge according to the curriculum which is taught by top universities in the world focusing on providing quality knowledge to students.

Most higher education institutes and universities started to focus on developing students' hard skills as well as soft skills such as problem-solving, teamwork, and creativity. Usually, the universities in Uzbekistan equip students with hard skills, however, after graduation students face problems as employees. The reason for that is the lack of personal skills which should be developed along with hard skills. In order to decrease these issues, New Uzbekistan University actively practices Project-based learning, Task-based learning, and Problem-based learning in the process of teaching so that students develop the skills to use at their workplace. Project-based learning is a method that is related to presentations which are considered a form of student-centeredness in teaching (Brown & Lee, 2015). The empowerment provided to students during projects, the process of problem-analyzing, problem-solving and suggesting solutions increases student engagement and active participation (Wurdinger, Haar, Hugg & Bezon, 2007). The utmost goal of the curriculum is to equip students with meaningful knowledge and skills required in the real life. These skills are usually developed in practice by giving the learners real problems to solve. According to Thomas (2000), the project focuses on five aspects:

1. Centrality
2. Questioning
3. Investigation
4. Autonomy
5. Realism

Four major characteristics provided by Kubiak and Vaculova (2011) are:

1. Self-responsibility for learning and thinking
2. Consciousness of social responsibility
3. Use of scientific principles in thinking and action
4. Connection of group activity and output with professional practice

To make the project successful, team members work in collaboration, investigate possible solutions to the problem, think critically, use their creativity, invent or innovate a product and present it. The process requires time, cooperation, responsibility, and dedication. Language learning also does not happen in one hour and involves a long time for learners to reach ultimate attainment (Lightbown, 2000).

As Uzbekistan is a part of expanding circle English Language is learned as a foreign language and the opportunity to use the language at home or outside the classroom is low. Projects are beneficial for communicative purposes and at the same time develop the public speaking skills of the students as they are asked to present their projects in front of the audience.

The observation of educators in Uzbekistan shows the majority of freshman students tend to be shy with low self-confidence in speaking and sharing their ideas. According to Brown (2003), speaking is the result of creative construction and shows language ability in other language skills. It is crucial to help them to confront and overcome their fears and increase their confidence during their university years.

As Ur (1996) stated, there are four main problems with students' speaking during the classes such as 1) being worried to make mistakes, 2) lack of general knowledge to speak about different topics, 3) limited time to speak during the class, 4) speaking in L1 during the class. By implementing PBL with the participants we aimed to decrease the problems students usually face in speaking.

In this study two research questions will be reviewed:

- 1) Is Project-based learning an effective way in developing students' speaking skills?
- 2) What soft skills can learners develop through PBL?

Methodology

Participants

The population of this research is 50 foundation-year students of New Uzbekistan University in Tashkent, Uzbekistan. Students are 17-18 years old and are from different regions of the country. The participants are future software, chemical, and mechanical engineers. The language skills of the students are from pre-intermediate to upper-intermediate as students submitted their IELTS test results during the application process.

They worked in groups of five to find an existing problem in the region and suggest innovative ideas to solve it. The groups presented various topics such as Alternative Concrete, Vertical Farming, Trash to Treasure, Techno Vein, Eco-cooling, Building the Future, and Next Generation batteries.

Findings

The participants filled out the post-survey with the questions to find out their opinion about the progress they made during the process. Three major questions were the focus of the observation.

Question 1

In your opinion, do you think that you improved your English-speaking skills while preparing your project?

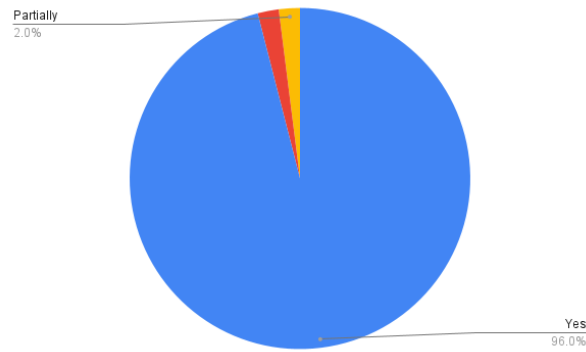


Figure 1: Responses of the participants to Question 1

96 % of the participants stated their progress in speaking skills and only 2 % responded that they do not think so. 2% of the participants observed partial progress in their speaking.

Question 2

What other language skills have you improved during this project?

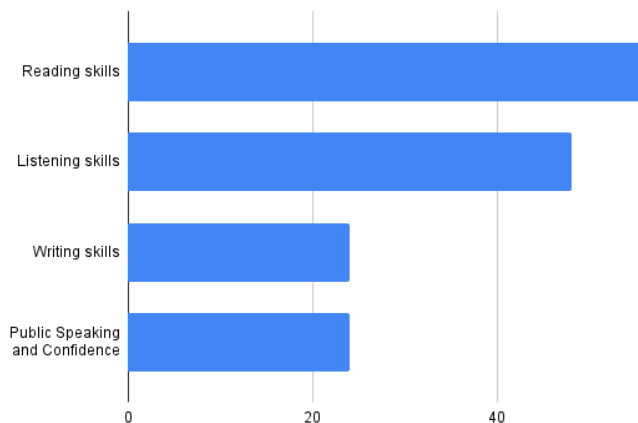


Figure 1: Responses of the participants to Question 2

The chart illustrates other skills students think they developed in the process of preparation. Almost all students developed their reading skills. The majority of students (45 participants) stated the progress in their listening skills. 25 students confirmed the improvement in writing, public speaking, and confidence.

Discussion

The study demonstrates that students make progress in their language skills, especially in speaking and reading during project-based learning. The beneficial side of this approach is students are given empowerment to choose the topic and suggest real solutions. By doing this, the educator motivates students to use their library skills, research, and acquire language. Participants work in collaboration with their teammates which makes the project engaging and productive.

Although, the study has its limitations such as the number of participants and methods in data collection/analysis, the observations of the educator and the results of the survey depict the advantages of Project-based learning for engineering students to enhance their language

abilities and some of the soft skills. In the future, the study can be conducted with a greater number of students and detailed analysis with pre- and post-surveys and tests.

Conclusion

Preparing for the presentations allows students to negotiate the meaning, and interact using authentic topics interesting to students (Celce-Murcia, 2014). The students showed a positive attitude towards working on projects in small groups and presenting their innovative ideas. Project-based learning is an effective way in advancing students' English-speaking skills as they learn a plethora of new vocabulary and practice active reading skills. Additionally, it is efficient in enhancing skills such as reading, listening, and writing. The participants emphasized that they improved soft skills such as confidence and public speaking.

The students with the projects successfully participated in the Start-Up projects competition organized by the university and five winning teams visited the Technical University of Munich in Germany and Sejong University in South Korea for short-term internships.

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