

REACHING MATURITY THROUGH PROJECT-BASED LEARNING

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Abstract:

Project-Based Learning as a concept is well recognised and applied in some countries, e. g. the U. S. A. or Denmark. By implementing that approach, educational organisations have been able to increase the level of practical knowledge of their students, making them a more valuable asset for industry. In addition, the companies could benefit from the practical knowledge of students, which would help them to improve their maturity in Project Management. Moreover, industrial companies very often actively participate in the programs because it is their expectation to get both theoretically and practically skilled staff. Furthermore, the students prefer this approach when choosing the same subject in comparison to the traditional (blocks of separate lectures on given topics) way of teaching. In Poland, the traditional approach to learning is widely applied in educational organisations. However, the benefits of introducing Project-Based Learning in some countries raised the issue of its usability and possible introduction in Poland as well. In our opinion, in order to enhance the level of maturity of students in different areas of expertise, new ideas of learning should be implemented. The article outlines the main ideas of Project-Based Learning and discusses the key issues surrounding its effectuation. In addition, the article presents salient thoughts on the possible implementation of Project-Based Learning in Poland. The advantages and disadvantages are highlighted with a special focus on the obstacles in the fields of potential execution.

Keywords: project-based learning, maturity, educational organisations, practical knowledge, industrial companies' expectations.

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1. INTRODUCTION

Project and Problem Based Learning (PBL) has been recognised as one of the methods of teaching students. The supporters of that approach underline the highly practical aspects and better knowledge application by students. The paper argues that using that method can increase the maturity level of the overall teaching system. However, some reservations are given as well.

2. PROJECT AND PROBLEM BASED LEARNING VS. TRADITIONAL APPROACH OF TEACHING

The concept of Project and Problem Based Learning (PBL) has been implemented at some universities (Frank, Lavy & Elata, 2003; Heitmann, 2005). The idea itself was widely described by the Buck Institute for Education (2003) and several variations of implementing the method were found (Friesel, 2004).

The main difference in comparison to the traditional teaching system is that, in PBL, all subjects and classes during the semester are related to the one overarching goal. Moreover, the students are put into teams and each team has to solve an individual problem and present it at the completion of the project. In the traditional approach (blocks of separate lectures on given topics), there is interaction between the subject and the individual student only. In PBL, there is additional interaction between four components: team, student, project and subject (Picture 1.)

2.1. Interaction team-student

In that type of interaction the students learn how to cooperate in order to achieve a common goal. They have to assign different roles to the team member and monitor the progress of the project's work.

2.2. Interaction project-student

The students gain knowledge of the practical aspects of project initialization, planning and execution. Those activities include the learning tools and techniques used in project management and the software used as well.

2.3. Interaction subject-student

That type of interaction (which also exists in the traditional approach) gives the opportunity for students to acquire the theory. However, in PBL, the set of subjects is always related to the one major topic of the project and supports the achievement of the project goal.

2.4. Interaction team-subject

The students as a team need to decide what kind of knowledge is needed in different subjects for them to apply it in practice. Therefore, they have to involve group thinking process in direct relation to the studied subjects.

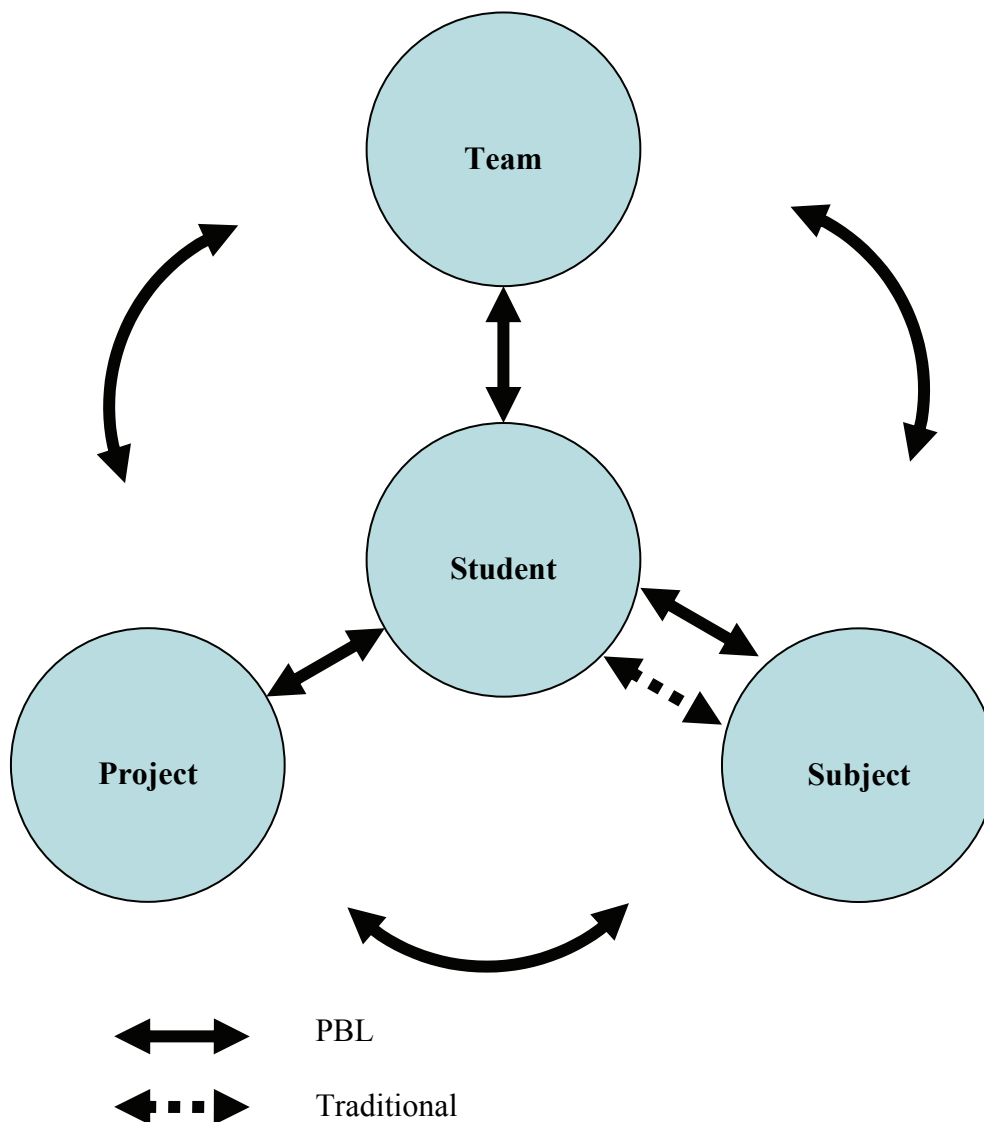
2.5. Interaction project-subject

The project should be planned in accordance with the knowledge gained from the subjects. Therefore, the task is to coordinate project activities with the deliverables of the subjects.

2.6. Interaction project-team

Running projects effectively means – amongst other things - managing human resources. Therefore, the students learn about sharing responsibilities, assigning tasks and monitoring and control processes in the project. This is all in relation to the team building process.

Picture 1: Interactions in PBL vs. traditional approach



3. CONSIDERATIONS ON APPLICATION OF PBL IN POLAND

The introduction of Problem and Project Based Learning to some of the universities (Andersen, 2001) brought positive outcomes.

According to Friesel (2005), the following aspects must be effectuated in order to successfully implement PBL:

- The group has to be split into teams.
- The teams of students must be relatively small (4–6 members).
- There must be one supervisor for the whole group, assigned by the teachers. His role is to monitor the progress of the teams and conflicts' resolution.
- Co-supervisors must be introduced that could lead students through topics of expertise and their practical applications.
- The work is assessed individually at the end of the semester. However, some aspects, like teamwork and the final presentation, influence the final of score of an individual student.
- There is a final report written on the entire project. That report is the subject of assessment at the end of the semester.

Moreover, Boss and Krauss (2007) give some advice on the usage of current digital-world opportunities in PBL. It is advisable to implement any kind of e-platform to exchange knowledge and support the educational processes.

The above stated conditions could feasibly be introduced into universities in Poland. However, there are some issues that need to be resolved in advance.

The major concerns relate to:

- Changing the attitude and habits of the academic teachers.
- Assigning additional funds.
- Changing the bylaws of the educational schemes.

3.1. Changing the attitude and habits of the academic teachers

The current way of traditional teaching means more individual work of the teacher with students, limited to certain subject(s). In PBL, there is a strong demand for cooperation between the teachers in order to set up the set of subjects supporting one single topic per semester.

3.2. Assigning additional funds.

It looks like PBL needs higher funds than the traditional approach. However, that could vary depending on the fields of study and subjects. Therefore, a detailed calculation should be performed in order to find out what the level of funds needed is to start and run PBL under certain circumstances.

3.3. Changing the bylaws of the educational schemes.

While it is advisable that theoretical knowledge should be delivered in the first part of the semester, that approach should allow students to apply it to the project during the second part of the semester. It involves changing the educational systems which are now built upon the schemes of the parallel delivery subject of matter across the entire semester.

4. CONCLUSIONS

Project and Problem Based Learning has been widely recognised in some countries like the USA or Denmark. There is some evidence that this system delivers more practical knowledge and, therefore, makes students more attractive to industry. The stated companies prefer to hire such students as they are potentially better prepared to operate in the projectised environment. Nowadays, an increasing number of industrial companies are project-based oriented. They are looking for ways to improve their maturity level in project management. Hiring students educated in the PBL system gives them the opportunity to enhance their efficacy in managing projects. Furthermore, companies are willing to cooperate in the PBL courses as they could receive positive feedback from their contribution. Therefore, it is desirable that universities in Poland should adapt their traditional way of teaching to the PBL method. However, there are some outstanding issues such as the following: changing the attitude and habits of the academic teachers, assigning additional funds, changing the bylaws of the educational schemes. They need to be resolved from the outset before starting any PBL program at university in Poland. Due to these limitations, it is advisable to start a pilot implementation of PBL in order to check its application under specific circumstances related to the given university and subject of studies.

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