DEVELOPING ACADEMIC READING SKILLS THROUGH PROJECT-BASED LEARNING

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ABSTRACT

This article investigates the use of Project-Based Learning (PBL) in EAP and ESP courses in higher education in order to improve students' academic reading skills in English. These courses aim to develop students' critical thinking skills and prepare them to use English in an academic setting. Students lack motivation to read, which prevents them from enhancing their reading skills despite their high language proficiency. The study tries to answer the following questions: 1. Can Project-Based Learning enhance academic reading skills in ESP and EAP courses? and 2. What type of activities are most suitable for developing academic reading skills? The given hypothesis tested was that PBL significantly improves students' academic reading skills in comparison to traditional teaching methods. An experimental research design was used to analyze and compare the data of the experimental and control groups. The results of the independent and dependent t-tests confirm the hypothesis (experimental group pre-test *M*= 19,77 and post-test *M*=22,62, *p*= ,000; control group pre-test *M*=19,95 and post-test *M*=19,3, *p*= ,139). Reading activities include materials related to students' field of study taken from ESP courses, course books students use in the field-related courses, and online resources. Project assignments motivate EFL learners to read materials they find useful and interesting.

Keywords: reading skills, English for academic purposes, Project-Based Learning, English for specific purposes

1. INTRODUCTION

Project-based learning is an approach to teaching and learning that teaches students various strategies critical for success in the twenty-first century. Students are responsible for their own learning through inquiry, and they also collaborate during the research process in order to create projects as a final product (Bell, 2010, p. 39). There are several crucial areas to take into consideration when implementing PBL: time and student group management, establishing a culture that stresses student self-management, working with others outside the classroom, effective use of technological resources, and assessment and evaluation of students and their projects (Mergendoller & Thomas, 2005, p. 1).

The aim of EAP and ESP courses at tertiary level is to prepare students to use English in an academic setting as well as to put the language in practice by relating it to their field of study. There is a strong connection between language skills and career development. (Spahiu, 2021, p. 288). Students lack motivation to read, which prevents them from enhancing their reading skills despite their high language proficiency. Therefore, the PBL can be used to enhance EFL learners' academic reading skills, which are one of the four skills that ESP and EAP courses aim to develop.

The study tries to answer the following research questions:

1. Can Project-based learning enhance academic reading skills in ESP and EAP courses? and
2. What type of activities are most suitable for developing academic reading skills?

The hypothesis tested was that PBL significantly improves students' academic reading skills in comparison to traditional teaching methods.

2. LITERATURE REVIEW

As a receptive skill, reading has frequently been studied at different levels of education. Several authors have researched the development of reading skills at university level through the use of PBL (Kavlu, 2015; Shiraz & Larsari, 2014; Mejang, 2008).

Shiraz and Larsari conducted experimental research with 120 Iranian students at B1 level for a period of four months. They divided the students into one control and two experimental groups. One-way ANOVA was used to analyze data. It revealed a positive correlation between the use of PBL and the development of reading skills in EFL classes (F=26,266). The first experimental group showed statistically significant progress (pre-test M= 4,575, post-test M=36,32; $p<0.05$), which is mirrored in the results of the second experimental group ((pre-test M=23,925, post-test M=36,90). The mean value increased by 12 points. The control group also made progress (pre-test M=23,35, post-test M=32,15; $p<0.05$), which is not as significant as the progress made by the two experimental groups.

Mejang (2008) worked with 80 medical students from Thailand, whose English proficiency ranged between A2 and B2. The students attended classes as part of an EAP course for four months. All the students participated in the experimental group. The results of the dependent t-test indicate that PBL significantly improved students' academic reading skill (pre-test M=11,97, post-test M = 14,41; t = 4,66; $p<0.05$). The limitation of this study is the lack of a control group.

Kavlu (2015) included 45 first-year students from Iraq at A2 level. The participants were ELT students who attended a course in EFL for one semester. They were divided into a control and an experimental group. Kavlu used an independent t-test to show that PBL yields better results than traditional teaching. The mean value of the control group was reduced from M=77,905 on the pre-test to M=69,702 on the post-test. The mean value of the experimental group increased from M=77,905 on the pre-test to M=87.619 in the post-test. Consequently, Kavlu confirmed the hypothesis of the effectiveness of PBL regarding reading skills in comparison with traditional teaching methods.

The participants in these studies were students with A2-B1 levels of English proficiency, with only one group of students at B2 level. Our study focused on students with higher levels of proficiency, including B1, B2 and C1 levels, so that more insight could be gained into how reading skills could be enhanced through PBL when this method is used with high-proficiency students.

3. RESEARCH METHODOLOGY

An experimental research design was used to analyze and compare the data gained from the pre- and post-tests. The instruments for collecting data included: a placement test, a reading-pre-test, a reading post-test, a needs analysis questionnaire and a survey at the end of the semester.

80 students from the International Balkan University in Skopje, North Macedonia, were divided into an experimental and a control group, with 40 students in each group. The students came from three faculties:

Faculty of Engineering, Faculty of Arts and Graphic Design, and Faculty of Architecture. According to the placement test before the start of the semester, 34% of them were B1 level, 55% were B2 level, and 11% were C1 level according to the CEFR for languages. They attended the compulsory course in English language 1, which is designed as a combination of an EAP and an ESP course. The students were given a reading pre-test at the beginning of the semester and a reading post-test at the end. The PBL was used with the experimental group, which received eight project assignments (every week or every two weeks) in the form of projects. The students in the control group had traditional assignments, mainly reading and writing exercises as given in the course book. All projects were tailored to meet the needs of students from different departments.

The IBM SPSS Statistics V.22 was used to analyze the data from the pre-tests and post-tests. A dependent t-test was used to compare the results of each group, while the results of the control group were compared to the results of the experimental group through an independent t-test. The results are shown in tables in the following section.

4. RESULTS AND DISCUSSION

Prior to beginning the course, students completed the needs analysis questionnaire. Results showed that 33% of the students expected to learn ESP-related vocabulary, followed by being able to understand professional texts and to talk accurately when using EAP and ESP.

More than half of the students preferred interactive classes, while 25% chose traditional teaching methods. A third of the respondents prefer working in groups (36%), while 24% would rather work individually, and 24% like project work. Only 16% of the students chose pair work. Students also were in favor of interactive teaching because teachers kept them engaged during classes. Only a fifth of the students preferred traditional teaching methods.

Regarding course materials for EFL courses, students chose several different options provided for each question. Namely, an equal number of students selected general English course books, as well as audio and video materials related to their field of study (25% for each), followed by texts on topics from their field of study (21%) and ESP course books (16 %).

Students' needs analysis indicated that the majority of the students think that the English course designed as an ESP course is necessary for their higher education and their future profession. This is mainly due to the fact that none of the students had previously studied ESP.

Concerning their language proficiency, half of the students evaluated their English knowledge as being B2, 45% believe their level is B2, and merely 5% think they are C1. These responses correspond to the results of the placement test.

As for their expectations from the course, students primarily expect to improve their academic vocabulary and ESP terminology, as well as to develop their speaking and academic writing skills.
In terms of reading subskills, students aim to enhance their skills in reading general and professional literature.
The results of the students' need's analysis were used to design the course and the project assignments.

An independent-samples *t*-test was conducted to determine whether there is a difference in the mean values of the points students scored on the pre-test and post-test in the control and in the experimental group. The results indicate there is no significant difference in the value on the pre-test between the control group (M=19.950,

SD=2,8550) and the experimental group (*M*=19,775, *SD*=2,9827), [*t*=-,268, *p*= .789 > .05] which means the groups were homogenous at the beginning of the study. There is a significant difference between the points on the post-test between the control group (*M*=19.300, *SD*=3,1881) and the experimental group (*M*=22,625, *SD*=2,5083), [*t*=5,184, *p*= .000 < .05]. Consequently, we can reject the null hypothesis that PBL does not improve students' academic reading skills in comparison to traditional teaching methods. Furthermore, the first research question: Can Project-Based Learning enhance academic reading skills in ESP and EAP courses? may be answered positively.

Pre-test		N	*M*	*SD*	*t*	*p*
Reading	1,0	40	19,775	2,9827	-,268	,789
	2,0	40	19,950	2,8550		

Post-test		N	*M*	*SD*	*t*	*p*
Reading	1,0	40	22,625	2,5083	5,184	,000
	2,0	40	19,300	3,1881		

Table 1. Results of the independent t-test for the control and experimental group

A dependent *t*-test was used to measure the progress students made in each group by comparing the points on the pre-test and post-test and whether there was a significant difference in the mean values of the test scores.

The results of the *t*-test with the control group show no significant difference in the value between the pre-test (*M*=19,95, *SD*=2,55) and the post-test (*M*=20,25; *SD*=2,71), [*t*=-,268, *p*= .789 > .05]. This means that the control group did not show any significant progress in reading skills. On the other hand, the *t*-test with the experimental group indicates a significant difference in the value between the pre-test (*M*=19,77; *SD*=2,98) and the post-test (*M*=22,62; *SD*=2,50), [*t*=-,268, *p*= .000 < .05], which means the students in the experimental group enhanced their academic reading skills as a result of the Project-based learning method. Therefore, the hypothesis of the effectiveness of PBL in comparison with traditional teaching methods can be confirmed once again.

The second research question refers to the types of activities that are suitable for developing students' academic reading skills in ESP and EAP courses. Based on the course syllabus, seven out of eight projects included activities that develop reading skills, such as scanning, skimming and intensive reading of information that can be found on websites, blogs, ESP coursebooks and journal articles on studies related to students' study field. The students had to use their critical thinking skills to choose, analyze, evaluate and present reading materials relevant to their future profession. The project assignments were realistic, rather than course book-based. Students had to work on a real problem and think of a possible solution, which they presented to other students or teachers, or they uploaded texts on the university website or created an electronic book using the app.bookcreator.com website. Students were highly motivated to read and write because they had an audience to read their written work.

At the end of the course, the students in the experimental group were asked to fill in a survey in order to provide feedback regarding the use of PBL in general and the development of their academic reading skills. The questionnaire consisted of two sets of questions. The first group included 15 statements on a 5-point Likert scale. The results indicate that half of the students prefer working in a group to working individually. The same percentage agree that PBL helps them develop their reading skills better than traditional instruction. The majority of the students think that PBL enhanced their time-management, presentation and research skills.

Despite the fact that they believe PBL to be very useful in learning foreign languages by linking theory to practice and enabling them to work more autonomously, a third of the students believe that PBL is rather time-consuming, since they have to be engaged outside classes. The remaining 20% of the students do not find PBL useful, as it does not help them learn EFL.

The majority of the students partially agree that it was easy to find necessary information for all projects, although nearly 90% experienced no technical problems while working on the project tasks, such as issues with Internet access or other ICT and computer literacy problems.

Most importantly, nearly 65% of the students said that PBL motivated them more than traditional teaching to read materials in English. Finally, nearly 90% strongly agree or agree that their English has significantly improved because of the use of PBL in the EFL classroom. They also agreed that PBL helped them improve their general English and academic vocabulary, as well as field-related terminology.

The second set of questions were five open-ended questions, the aim of which was to gather students' opinion on the project assignments, i.e. which one they found most/least interesting, most/least boring, most useful, and if they had any suggestions about the use of the Project-based method in learning English. Students' answers greatly varied. It was interesting to notice that the assignment chosen as the most difficult was the one chosen as the most interesting. In this particular project, students were asked to design the ground floor of the university, mainly using various computer programs. The most useful assignment was reading about and interviewing students and academic staff on the topic of cultural differences and diversity.

50% of the students had no remarks or suggestions about the implementation of PBL in their EFL classes, and they would like this method to be used more often as it motivates them to study. 18% did not answer this question, while 32% suggested giving students extended project submission deadlines and more frequent meetings between teachers and students. This would enable teachers to closely monitor students, particularly when working in groups. Regarding the choice of topics, students would like to be given more freedom.

Students in other similar studies share the views of IBU students who were included in the research (Miller et al, 2012, Poonpon, 2011). They complained about the lack of time and technical support. Mejang (2008) reports that her students like PBL because it motivates them to study and to read more in English because it connects ESP to their field of study (medicine). Students believe PBL helps them develop their reading skills most, followed by speaking and partially writing.

5. LIMITATIONS OF THE STUDY

The study had two limitations. Firstly, the number of participants was relatively low. 80 students were divided into two groups. Having more than 40 students per group would significantly increase the statistical validity of the results. The number of students was 80 as that was the total number of students whose proficiency level fell in the range between B1 and C1 CEFR level. There were 17 other students who were excluded from the study because of the low proficiency level (A1 and A2).

The second limitation is the fact that the students came from departments such as architecture, computer engineering and graphic art, where technology is widely used. This may have resulted in students having no IT-related problems while working on their projects. Students from other departments may encounter ICT issues, as reported in similar studies (Kalabzova, 2015, Miller et al, 2012; Mejang, 2008). Nevertheless, authors defining the types of PBL claim that the use of ICT in PBL classes is inevitable (Cho et al., 2015).

6. RECOMMENDATIONS FOR FUTURE RESEARCH

Further research could be done with higher (C1) or lower (A1) level students to investigate the effectiveness of PBL with high and low proficiency students. The rate of development may vary, depending on the language level of the students. The effectiveness of PBL on other language skills, including writing, listening and speaking could also be explored.

Another area to be researched could be whether students of social studies and humanities make the same progress regarding their academic reading skills when taught through the PBL method and if they face similar problems during their project work. A comparison between PBL and other teaching methods and approaches may be made in order to determine the effectiveness of PBL regarding reading skills as opposed to other methods.

Finally, the use of PBL and its possible impact on various 21st-century skills such as team work, collaborative skills, time management and the use of ICT could be further studied.

CONCLUSION

The implementation of Project-based learning in EFL classes in tertiary education enables students to actively work on projects in order to answer a question, while combining their previous knowledge of the scientific field in which they are studying with their English language skills. PBL combines well with EAP and ESP courses as it allows students to merge theory and practice, which is the ultimate goal of higher education.

Students lack motivation to read, which in turn results in university students with poor academic reading skills (Wolters, Denton, York, & Francis, 2014). Therefore, the aim of this study was to explore how students could be more motivated to read and improve their reading abilities. The study provided answers to two research questions: 1. Can Project-based learning enhance academic reading skills in ESP and EAP courses? and 2. What type of activities are most suitable for developing academic reading skills? The hypothesis tested was that PBL significantly enhances students' academic reading skills in comparison to traditional teaching methods.

Several studies have shown that PBL has a positive effect on students' motivation to read and it has significantly improved their academic reading skills (Mejang, 2008; Poonpon, 2011, Miller et al, 2012; Shiraz & Larsari, 2014; Kavlu, 2015).

The study had an experimental research design, with a control and an experimental group. Statistical data were used to confirm the hypothesis that PBL significantly improves students' academic reading skills in comparison to traditional teaching methods. Research findings, as well as students' answers to the needs analysis questionnaire and the survey upon the completion of the course provided answers to the research questions. PBL can be used to improve academic reading skills significantly. Concerning the second research question, teachers should use consider a) the types of reading skills; b) the source of reading texts, and c) the kinds of project

assignments when designing a syllabus for EAP and ESP university courses. The project activities need to develop various types of reading skills, such as skimming, scanning and intensive reading by working with reading materials that can be found online, in ESP coursebooks, as well as in articles taken from academic journals. Furthermore, project assignments should promote students' 21-century skills, including their critical thinking and presentation skills. It is therefore necessary to design authentic project assignments that can be presented to a wider audience.

Additional analysis could be done regarding the benefits of using PBL with A1-A2 and C1 level students or with students from various departments to enhance their (academic) reading skills.

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