

Raising Libyan EFL undergraduate students' awareness about environmental issues through project-based learning

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Abstract

Although project-based learning, as a language teaching strategy, is considered important for developing the college students' academic and soft skills, it is still a neglected approach in EFL teaching in Libya. This study aims to investigate the use of project-based learning in EFL writing classroom to raise students' awareness of environmental issues. It is carried out in the Department of English at Sabratha college of Arts and Education. The participants were 34 undergraduate English language students. Based on an open-ended questionnaire, students' reflection journals, and teachers' notes, the findings of this study show that PBL enhanced students' content knowledge about the environment as well as their English language skills. Furthermore, the findings show that students' soft skills, autonomy, and self-confidence in using the English language in its context have improved. Finally, the PBL experience increased students' understanding of the environment and how to protect it. This study aims to contribute to the body of knowledge needed to understand students' experiences and perceptions of PBL in the writing classroom. It demonstrates the effectiveness of PBL in engaging and enhancing students' learning in meaningful situations

Keywords: EFL students; environmental issues; Project-based learning; soft skills,

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Introduction

Libya faces many man-made environmental issues such as air pollution, soil erosion and deforestation, all of which harm the environment and animal life. Thus, raising people's awareness about environmental issues is a must, mainly among the young generation, of whom a great number are students. There is a great demand to include environmental issues such as species extinction, global warming and soil erosion into English language lessons, Cates (1990, points out that 'we can't call our English teaching successful if our students, however fluent, are ignorant of world problems, have no social conscience by using their communication skills for international crime, exploitation, oppression or environmental destruction', (p.4)

This implies that EFL teachers could use their lessons to raise students' awareness and create a more sustainable environment. However, integrating environmental issues into English language classrooms does not appear to be a priority for the majority of Libyan EFL teachers. The purpose of this research is to investigate incorporating project-based learning into the English writing classroom in order to raise students' awareness of environmental issues.

According to Praba et al. (2018), PBL has been considered as a teaching method for closing the gap between current students' learning of knowledge and 21st century skills. It is a student-centered and teacher-facilitated approach to learning based on Dewey's (1938) concept of learning by doing (Bell, 2010). Project-based Learning, as opposed to traditional learning and memorization, allows students to explore their interests and abilities while also taking responsibility for their education (Praba, et al, 2018).

Literature review

One of the central learning theories that has been highly considered for the 21st century learning foundation is Constructivism ((Praba, et al, 2018). Dewey (1938) and Vygotsky (1987) emphasized the importance of experiential learning, learning by doing, and the development of constructivist theory. These concepts and theories provided the theoretical foundations for PBL (Baumgartner & Zabin, 2008). Project-based learning highlights that students learn when the new information is related to the previous one in an effective classroom environment. In this perspective, students play an essential role to develop their knowledge through active engagement during the learning process.

Project-based learning is a modern teaching and learning model that is based on constructivist learning theory, according to (Praba et al, 2018). Project-based learning is defined by Bas (2011) as "an authentic learning model or strategy in which students plan, implement, and evaluate projects that have real-world applications beyond the classroom" (p.2). It aims to achieve 21st century skills, specifically the Four Cs of critical thinking and problem solving, communication, collaboration, creativity, and innovation, by allowing students to work in groups and gain "hands-on experience in an authentic and meaningful context" (Praba, et al, 2018, p.2).

Project-based learning also increases students' autonomy by making them more responsible for their own learning. Through their engagement in the authentic tasks, students can develop their language skills, gain self-confidence and communication skills, (Fragoulis , 2009). The teacher plays the role of a facilitator and mentor, guiding students' learning towards intended learning outcomes (Savin-Baden & Major, 2004).

The criteria of PBL

According to Thomas (2000), there are five criteria for PBL: projects should be integrated into the curriculum, focused on challenging questions, topics or problems, involve student-centered activity in which students plan, search, complete and present the task using authentic resources. Furthermore,

Grant (2002) mentions scaffolding, collaboration and reflection as common features of PBL. Simpson (2011) adds that the collaborative learning environment as well as assessing the process of work and the final product are critical, (Sedgh et al, 2016).

Teacher's role in project-based learning

Unlike traditional classrooms, where the teacher transmits knowledge, Project-based learning requires the teacher to play a more flexible role (Levy, 1997). instead of being a controller, the teacher acts as a facilitator and guide (Frank & Barzilai, 2004). 'In implementing the project method, the focal point of the learning process moves from the teacher to the learners, from working alone to working in groups', Sukerti&Yuliantini, (2017, p.14). According to Stauffacher et al. (2006), "the teacher's role changes from a distributor of knowledge to a process manager, helping students in their learning process by initiating reflection processes and supporting them, if necessary, on substantive matters', (p.255).

The stages of project-based learning

According to Fragoulis (2009) teachers who want to implement PBL should follow the following stages:

Stage 1: Speculation This stage includes choice of project topic and raises students interest to investigate and find information about the giving topic.

Stage 2: Designing the project activities This stage includes formation of groups and assigning roles and responsibilities, sources of information and activities that will take place.

Stage 3: Conducting the project activities

At this stage, the groups carry out the activities that were planned in the previous stage. Students gather data, process it, and categorize it. The next phase is synthesis and processing of information gathered. The finished products are displayed in the school or the community.

Stage 4: Evaluation

This stage entails evaluating the activities and discussing whether the initial aims and goals were met, as well as the process of implementation and final products. according to Brinia (2006, p.82), 'evaluation also entails assessment of the experience at individual and group level, identification of errors and problems, but also appraisal of the rich cognitive and experiential material gathered'.

Integrating environmental issues in English language classrooms

Integrating environmental issues into education is not new. In 1977, The United Nations Education, Scientific and Cultural Organization (UNESCO) set five objectives of environmental education, namely: awareness, knowledge, attitudes, skills, evaluative ability, and participation. The declaration outlines 12 guiding principles for incorporating environment into education. Some of these guiding principles include: to enable the learners to discover the environmental problems and causes, to suggest critical thinking and problem-solving skills and to use different learning settings to learn about environment protection, (Setyowati, 2019)

With the increased environmental damage worldwide, the need to educate the future generations about environmental protection is becoming more urgent. According to Bromley, et al (2016), this can be accomplished through education because teachers can incorporate environmental issues into their lessons. There has been an increase in interest in incorporating environmental issues into English language teaching over the last decade, Cates (1990). Integrating environmental issues into the EFL curricula is essential because successful language learning requires relevant and authentic materials that inspire students to think and learn through the English language practice.

Pratama & Yuliati (2016) mention that language teachers can play an important role in raising environmental awareness not only by focusing on improving the learners' academic skills, but also by enhancing their affective side which include caring, being responsible and having a positive attitude toward people and the environment. One way of doing this is to incorporate environmental issues into selected texts and teaching methods, Hauschild, et al (2012).

Setyowati & Widiati (2014) integrate environmental issues into teaching writing by using a Genre-Based approach. Lustyantje (2017) suggests using literature to teach about environmental issues. These studies show that incorporating environmental issues into the language sessions is effective for teaching the language skills while also raising the learners' environmental awareness.

According to Nkwetisam, (2011), language teachers need to rethink and extend the goals of their curriculum. This issue requires using more practical teaching approaches such as Project-based learning, which focuses on the topic and contents given to students rather than focusing on the structure of the task. Integrating environmental issues in EFL contexts is essential for successful English language learning, (Cates, 1990). Silver (1991) mentioned that students learn best when they are involved in meaningful and relevant tasks, especially from authentic materials which helps them to practice the language in context.

Previous research on PBL

It is generally accepted in the literature that PBL studies help students develop a range of skills that go beyond the academic subject knowledge. Project work, according to Dornyei (2001, p.100-101), reduces learners' anxiety, enhances learners' motivation and fosters group cohesiveness. Another set of reported benefits is that project-based learning improves learners' critical thinking, autonomy and problem-solving skills, as stated by Allen (2004); (Bass, 2011). Similarly, Neo and Neo (2009) stated that students' critical thinking, communication skills, teamwork and presentation skills were enhanced when they were engaged in PBL task.

A further advantage is that PBL enhances learner's motivation, enjoyment of language learning and participation in class, (Lee,2002). According to Brophy (2004), authentic tasks are more meaningful to students which increases their interest and motivation. Similarly, Sadeghi, et al. (2016), investigated the impact of PBL on the writing skills of 36 Iranian EFL learners. Their findings showed that students who were taught using PBL outperformed students who were taught using traditional methods.

Nugraha, & Ridwan, (2019) explored 20 secondary school students' attitudes towards the implementation of PBL particularly in relation to how students learn English and raising students' environmental awareness. The data were collected through classroom observation and interviews. The result indicated that students' attitudes towards the implementation of PBL were positive. It was beneficial in improving students' writing skills and raise their awareness of the environmental issues.

Corrisboindgly, Salsijanti, et al. (2019) investigated the integration of PBL to raise learners' environmental awareness in high school language classes in Indonesia. The findings of the study showed that the PBL model improved the participants' content knowledge about the environment while also improving their productive skills. Lalor, et al, (2020) explored the use of PBL to foster learners' environmental competency in Bulgaria. They analyzed various artefacts as well as participants' reflections. The findings revealed that participants' environmental knowledge, collaboration and communication skills had improved.

Although there are many benefits to PBL, there are also some disadvantages that should be taken into consideration before using this approach in the classroom. Kavlu (2017) noted that PBL is very demanding for many teachers because it requires additional work to provide guidance and find

resources, as well as time spent on classroom preparation and assessment. Consequently, this issue requires a shift of teachers and learners' roles, (Grant & Hill, 2006). However, teachers may find it difficult to change their roles.

Furthermore, Barak (2005) stated that assessments in project-based learning are mostly summative to the final product, making it difficult for teachers to assess each group member's contribution. Another issue related to teamwork identified by Kavlu (2017) is disagreement between group members, which can disrupt the learning process. Furthermore, students may lack motivation to complete their projects, adding to the teacher's burden of keeping them on track.

While there is some evidence for the benefits of PBL in the literature, few studies have investigated its implementation at the higher education level in EFL settings, including Libya. As a result, the purpose of this study is to connect theory with practice and investigate practical aspects of integrating project-based learning in a university setting, reporting on the approach's benefits, difficulties encountered, and pedagogical implications.

Research questions

To investigate the use of PBL in EFL academic writing course from students' perspective by answering the following research questions:

1. What do EFL fourth year students think about conducting projects in their writing class concerning environmental issues?
2. What are the possible gains for EFL learners when incorporating PBL in writing classroom?

Methodology

Participants

A total of 34 undergraduate English language students participated in this research. There were 28 females and 6 males among the participants. Their ages ranged from 20–23 years old.

The following stages of Fragoulis's (2009) learning project were implemented:

Students agree to work on an environmental project during the *speculative phase*. The topic was chosen to raise students' environmental awareness. Projects were assigned in the form of structured tasks, with the end result being six presentations to be delivered in front of the class.

In the *designing the project activities*, students were divided into groups of four. Then, they were given instructional guidelines of writing providing solution to a problem essay. Each group had a meeting to discuss which area they would focus on, with the teacher's agreement. All the groups agreed to make a project about the environment, including the following activities:

- A brief video/scene depicting environmental issues in Libya, such as garbage and air pollution (written – acted – directed by students)
- A presentation on their chosen topic
- Writing an essay in which students discuss an environmental issue and provide two solutions.
- Creating posters to raise environmental awareness among other students

Following the definition of the project's topic and final outcome, students and teacher discussed project details that will guide students from the beginning to the end of the project. Students considered their roles, responsibilities, and collaborative work groups at this stage. After agreeing on a project completion deadline, students scheduled the gathering, sharing, and compiling of information, as well as the presentation of their final project.

The six groups worked on the activities that had been planned in the previous stage. during the stage of carrying out the project activities. They gathered data and then organized it. They changed their plans and activities as a result of group discussions and the exchange of ideas. The draft was written in groups, with the lecturer providing feedback and suggestions for improvement to help them write their final drafts. Students were asked to consider the ideas and content of their essays, as well as the writing style, appropriate connecting words and phrases, and grammatical structures.

During the project-based learning implementation, students were encouraged to read about Libya's environmental issues and choose one to write about. The majority of groups identified garbage as a common problem in most Libyan cities, while one group identified air pollution. Following the submission of the final drafts of the essays, the small groups presented the problem and their solutions. The groups all agreed that the main challenge is raising people's awareness of the environment and how to protect it. Based on that, students created posters and signs to raise environmental awareness among students. One group proposed recycling as a solution to the garbage problem, o they brought three trash cans with different signs and colors and placed them in the writing classroom to educate their colleagues on the benefits of recycling to society and the environment.

During the evaluation stage, students were asked to keep their opinions and thoughts in reflection journals. At the end of the process, an open-ended questionnaire about using PBL was also used with the students to investigate their thoughts on the projects and their attitude toward completing the writing task using the PBL approach.

Research design

To investigate students' perceptions of the use of PBL in the writing classroom, a qualitative research design was chosen. Johnson & Christensen (2004) mention that “qualitative research is often exploratory and is used when little is known about a certain topic” (p. 30). An open-ended questionnaire, students' reflection journals, and the researcher's observation notes were used to collect data.

Data Collection Process

After finishing their projects, students were informed about the purpose of this research and that their participation was entirely voluntary. Students were told not to write their names anywhere on the paper in order to maintain their anonymity. After explaining the purpose of the questionnaire, the researcher left the classroom, and a teacher assistant distributed the questionnaire and collected the students' responses within the time allotted.

The open-ended questionnaire was chosen because it would provide more detailed information about the students' perspectives and experiences with project work. The questionnaire's three questions were designed to elicit students' perspectives on their project work. The first question concerned the benefits (if any) of working on projects. The second question concerned the difficulties they encountered while working on their project. The final question allowed students to express their opinions on what should be done to protect the environment. The questionnaire's clarity and reliability were tested by piloting it with three students. Furthermore, all writing students were asked to submit reflection journals about each stage of the project in order to elicit their thoughts.

Data Analysis

All data sources were read, coded, and analyzed after receiving the questionnaire responses and reflection journals. Three emergent themes emerged: the benefits of project-based learning, the challenges that students faced, and the implications that the study may have. To triangulate the data, the researcher took observation notes on the students' project work throughout the task.

Findings and Discussions

1. What do EFL fourth year students think about conducting projects in their writing class concerning environmental issues?

According to the students' reflection journals and questionnaire responses, this project work experience has a tremendously positive impact on their learning when compared to traditional classroom teaching. The majority of students who took part in this study described their experience as enjoyable, beneficial, and productive. The following are some comments: S 1 mentioned *'even though we were under stress, we have done an amazing work. We can describe our feelings as excited to be motivated, creative and independent*. Also, S4 stated *'unlike the traditional way of teaching, this idea of doing a project in group is wonderful. It encouraged us to express our views and discover our own talents. For example, I did not know before that I am good at drawing'*. This is consistent with Ali & El-Henawy's (2015) research findings, which showed that students viewed PBL as a successful and effective teaching tool.

PBL, according to Lee (2002), fosters a productive and engaging learning environment by integrating students' knowledge, attitudes, and skills. Similarly, Hernandez-Ramos and Paz (2009) stated that PBL students had a more positive attitude toward learning and were more motivated to collaborate on their presentations.

Most importantly, choosing environment as a topic allows students to develop more meaningful learning about the world around them. The majority of students appeared to have developed a sense of responsibility and concern for the environment. More than half of the students who took part in this study said that one of the most important things they learned from working on the projects was how to be more responsible and care for the environment. S21: *'I read a lot about pollution and loss of green spaces everywhere. The fire in Australia was hilarious. We should grow more trees and encourage people to do that.'*

Each of the groups decided to "go the extra mile" and raise environmental awareness among the other students. They created posters and quotations and displayed them in the classroom for other students to read. They also decided to plant trees in their surroundings. Furthermore, they planned a "clean the beach" campaign, but due to the pandemic, it could not be implemented.

As a result, students requested more opportunities to work on projects rather than just writing essays individually, with a focus on accuracy and grades. S6: *'writing subject doesn't have to be only about guided tasks in the classroom. It could be more interesting and useful if the teacher will let students take part in searching, preparing and creating. This will help them to be more aware of the subject. I hope that we will have more activities like this in order to improve our writing and our understanding of topics that are not common to us'*.

2. What are the possible gains for EFL learners when incorporating PBL in writing classroom?

1. Enhancement of academic skills

As far as academic skills are concerned, most students mentioned that they improved their English language skills. S22 said *'working in this project did not only improve our writing ability to write essays but also it motivated us to read a lot in order to select the information that we need. We did also practice speaking a lot through discussing our ideas, arguing about them and presenting them*. Some students also mentioned that they improved their research skills. S3: *Also, we did a lot of research and learned how to search for information from reliable resources*. These findings appear to support the findings of many studies, including Poonpon's (2011), which found that project work improves students' language and academic skills.

2. Encouragement of students' autonomy

The activities presented in this research are a different way of teaching English academic writing, 'adopting the pedagogical principle of exploratory learning', (Fragoulis, 2009:10). Students learn by forming groups, collaborating, searching for information, using authentic materials and resources, evaluating them, discussing, and making decisions. Because they have choices, these activities encourage them to be autonomous learners, develop a sense of responsibility and control over their learning, and present their projects in a way that suits their level and preference. S13: *'what I find interesting about projects is that students have the freedom to choose any design they want for their project. The teacher gave us the topic and the lay-out but we have to think, search, select ideas, write and rewrite, think of creative ideas for the presentation'*. According to (Praba, et al, 2018), students' autonomy and responsibility for their learning are the key characteristics of PBL.

3. Improvement in soft skills and teamwork

PBL, as a constructivist instructional model, necessitates collaboration. According to Kapp (2009), the most difficult aspect of PBL is students' ability to collaborate. Students may feel challenged and insecure when asked to work in groups, particularly when teachers lack the skills to foster a collaborative classroom culture in which students learn from one another (Kolodner et al, 2003). This is in contrast to the findings of this study, which found that the majority of participants enjoyed working together and learned from their colleagues. It is worth noting, however, that the participants in this study are accustomed to working in groups throughout the academic year. S15: *'It is good that we worked as a group because this helped us to learn from each other, share ideas, respect each other's opinion and search for information'*.

The observation notes revealed that students' soft skills, such as collaboration and communication, had improved. Furthermore, their computer skills improved significantly, particularly their ability to use the internet to find reliable information and create PowerPoint presentations. This is consistent with previous research findings (Fragoulis, 2009). This boosts students' self-esteem and motivates them to do their best and achieve their objectives. Furthermore, they should share their ideas and provide feedback to their group members (Baghoussi, & El Ouchdi, 2019). Moreover, one of the benefits mentioned was that this experience encouraged students to write essays and be creative with their posters. This is consistent with the findings of Noe and Neo (2009), who stated that PBL improves students' presentation and communication skills, critical thinking, interest, and ability to work in groups.

4. Development of students' content knowledge

Another aspect of PBL that drew students' attention was that they learned content knowledge about global environmental challenges while focusing on the communicative aspect of language. Furthermore, students gathered information about local environmental issues such as litter and plastic pollution from a variety of sources (articles, reports, news, and websites). S1 stated, *'through reading about environmental issues in Libya, I read about waste materials, plastic pollution..... I read about topics that I won't normally read about'*. These findings are consistent with previous research indicating that project-based learning improves learners' content knowledge about a given topic (Gu, 2004), (Nugraha & Ridwan, 2019).

Challenges of implementing PBL

Although the PBL has many pedagogical advantages, a number of factors may limit its applicability. One of the difficulties mentioned by two groups was the lack of facilities. Some students had difficulty in finding information related to their topic to write about due to poor internet connections. This is

consistent with Nugraha and Ridwan's (2019) findings, which revealed that one of the main issues mentioned by the participants in their research was a lack of facilities, such as an internet connection.

Furthermore, time constraints posed a challenge. Students needed more time for planning and discussions, but they also had other subjects and assignments to complete. This is consistent with the findings of Ali and Elhenawi's (2015) study, which found that one of the factors impeding students' work was a lack of time.

Discussion

This study investigated enhancing students' language skills and awareness about environmental issues through the use of project-based learning in the Libyan EFL context. Three themes emerged from the data analysis. First, PBL improved participants' English language knowledge and skills. Second, students improved their soft skills and gained confidence in using the language in context. Third, the project work increased the students' content knowledge and environmental awareness. These three themes lend support to the literature on the use of PBL as an effective approach in English language classrooms.

Students' views about their project work were overwhelmingly positive. According to Artini et al. (2018), PBL improves students' language skills and motivates them to use English in context. Furthermore, as recommended by the literature, students' autonomy was greatly enhanced. More importantly, PBL increased students' content knowledge of the environment and taught them about global and local issues.

As a result, the project work taught students how to be good citizens. Students had a much clearer understanding of the role they can play in raising environmental awareness. Their beliefs about the environmental damage we cause were challenged and altered. Furthermore, the students were able to apply their language skills in real-life situations. They talked about their daily routines and what habits they needed to change in order to be 'environmentally friendly.' According to Praba et al. (2018), project work can be viewed as a natural learning context in 'which language learning, writing in particular, is contextualized and presented in the way that learning becomes integrated with the task of communication about some theme' (p5).

The majority of participants in this study requested more projects rather than just writing individually in the classroom or at home. This necessitates a shift from a teacher-centered to a student-centered teaching method (Morrison, 2016). This shift in the teacher's role may introduce new challenges to the PBL implementation, necessitating the allocation of additional resources and training. The new position, according to Kahn and O'Rourke (2004), implies that the classroom is more student-centered, and students are encouraged to take more responsibility for their learning. This in-depth PBL experience may highlight the need for teaching and learning plans that prepare students to be responsible citizens who are aware of the issues confronting their society.

5. Conclusion and recommendations

The current situation in Libya necessitates the involvement of the youth in serving their society through the use of their knowledge, language, and skills. Because the study identifies PBL as an effective method of learning, involving students in such projects could be a viable solution to raising Libyan youth awareness about the environmental issues that Libya faces, as well as improving their skills and attitudes for citizenship and engagement in Libyan society.

This study looked into the use of project-based learning in the EFL writing classroom to increase students' awareness of environmental issues. The findings show that project-based learning allows students to use English language in context. Furthermore, students favor PBL because it provides a safe environment for all students to share their ideas and learn from one another. Even the shy and passive

students can contribute to their groups. As a result, this study lends support to the notion that PBL improves students' academic skills. As a result, English language teachers should consider PBL as a viable alternative for teaching English language skills, particularly writing.

However, there are several difficulties encountered when using PBL. Time was a factor because students had assignments to complete and lectures to prepare for. Another factor that many students mentioned was the lack of internet access.

Based on the findings of this study, the following recommendations can be made:

- Language teachers should take an active role in environmental protection by incorporating environmental issues into their classrooms.
- The PBL method should be incorporated into English language courses in such a way that it benefits both undergraduate EFL students by improving their language skills and society by raising people's awareness of environmental issues.
- In-service training courses for teachers should be provided, as PBL is not a common teaching method among the majority of Libyan EFL teachers.
- Language teachers should engage students in activities that increase their autonomy and sense of responsibility, and motivate them to actively participate in class.
- This study may aid the educational community and policymakers to investigate PBL as an alternative teaching method that may improve students' learning, motivation, and academic engagement.

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