Dynamics of Teaching and Learning Using Project Based Learning Activities in the Undergraduate Programme in Muscat College, Oman

Nuzhath Fatima (nuzhath@muscatcollege.edu.om), Lecturer, Corresponding Author,
Piyali Dey, Lecturer and Zehra Sultan, Lecturer, G F P, Muscat College, Muscat, Oman

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Abstract

This article presents the results of an interdisciplinary study on the effect of Problem Based Learning (PBL) on students and how project based learning activities facilitates the teaching-learning process in undergraduate college level students in Muscat, Oman. This research embedded a mixed method design which shows that structured guided note taking strategies assist students in understanding the content of the reading, and enhance students' interaction to collaborate that leads to student motivation towards independent learning. The analysis shows a significant effect on student's attitude in terms of confidence, creativity and learning ability, while it also promotes teacher's teaching satisfaction.

Keywords: Problem Based Learning, Learning By Doing, Solving Real-Life Problems

Background and motivation

Classrooms are different from those of the mid-to-late 20th century giving way to new and innovative ways to think, learn, acquire language and reflect on the content. Student engagement and motivation are both important factors which go hand in hand in having students internalize the subject matter being taught. Students are demanded to express their thoughts using oral and written communication. The theory of experiential approach to language learning looks into language learning as an ongoing process rather than a process which has an endpoint or outcome. "Projects involve students constructive investigation and are student driven to some significant degree and are realistic, not school like" (Thomas, 2004) which result in student engagement in general, as well as for students who were least interested in reading. However, several studies found that PBL is challenging for teachers to enact despite its positive benefits (Marx, et al., 1997). This leads to the conclusion that the teachers needed support in order to plan and enact PBL effectively, while students need support in setting up the initial inquiry, organizing their

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time to complete tasks, and integrating technology into projects in meaningful ways (Brush&SAye, 2008; Karjcik, et al., 1998).

The recent trends in the academic community towards adopting non -traditional methods of teaching in the classrooms over the past few years has given way to implement term projects and active learning strategies in order to meet the demands of the graduating students. Typically, it is observed that the choice of course book in the curriculum with active learning exercises could be implemented without much effort with significant benefits to students and are particularly attractive. Additionally, when elements of reflection, support and transfer are added to the basic experience by transforming a simple activity into an opportunity of learning experience, project-based and task-based learning become experiential learning. It provokes thought process in students as they acquire and apply the new gained knowledge to solve a problem. Thus, motivation is enhanced even if they are partially successful, which results in renewed motivation in learning and applying the knowledge making learning an active process.

Studies have shown that students learn better when they are aware of what is taught to them. A connection to real life situations in a classroom is imperative for the better understanding of concept by the students. Educational research and theory support the fact that learning is best done through experience – "learning by doing" rather than learning by observing or listening. The saying "education is what survives when what has been learned has been forgotten" proves very apt in this scenario (New methods and new aims in teaching, 1964). In this context, providing experiences to learners, that encourage them to make meaning from the learning, result in effective learning. Here comes the importance of Project-based learning. As a non-traditional educational model, it seeks to better prepare students for solving real-life problems and issues while teaching them subject matter that they need to succeed in school. Project based learning aims to train students with essential life skills and problem solving abilities that are needed for life beyond classroom. Though it is gaining importance in our present day teaching learning, "Doing projects" is a long-standing tradition in education (Grant, 2002; Merkham, et al. 2003).

The focus of our analysis was mainly to understand the goals and strategies that can be implemented by the facilitator to support collaborative learning. PBL is an instructional method

in which students learn through solving problems and reflecting on their own experiences (Barron& Tamblyn, 1980). Students have the opportunity to provide alternative and reasoned solution which does not necessarily have a single correct answer. The facilitator guides students through questions pushing them to deeply think about the complex problems. Learning occurs as students collaboratively engage in constructive reasoning.

One of the most important benefits of project based learning in EFL classroom is connecting academic situations to the real world. Project based learning utilizes students' hobbies, passions and interests to motivate students towards achieving their goals. By using multiple problem-solving methods, project based learning helps students to not only develop a balanced approach to solve problems, but also to change approaches when they fail in their initial attempt. The ability to develop multiple and alternative perspectives on a problem is also a central skill for performing tasks. Collaborative learning promotes the exchange and reflection on different views. As project work is often done in teams, learners train their capabilities for team-work and collaboration (Henze & Nejdl, 1997).

With project based learning the role of a teacher gradually shifts from a "sage on the stage" to that of a "guide on the side". In a PBL class, a teacher has to do the balancing act of knowing when to step up and when to step back while providing PBL experience. PBL teachers must create tasks and conditions under which student thinking can be revealed– a co-creative process that involves inquiry, dialogue, and skill building as the project proceeds (Markham et al. 2003: 8-9). In other words, teacher is a facilitator in project based learning. And so as a facilitator, a teacher models a project to the students who then are asked to do the activity in groups or pairs. This is followed by students doing the activity or project independently. With this develops a new structure for instruction that is the "gradual release of responsibility". Here, the teacher models the activity and then guides the students to the project. Students plan the project in a group, and share ideas on how to execute independently considering both language and presentation skills based on a given criteria. This gradual shift from "teacher responsibility" to "student responsibility" forms the crux of project based learning.

PBL uses a number of tools such as, note taking, field trips, community service projects, role play, virtual work experience and authentic learning of reading, writing and listening through the use of graphic organizers. Graphic organizers activate a learners' thinking as a learner completes and fills in the organizer. The learner then builds his ideas upon a visual map or a diagram. In EFL classrooms, a graphic organizer is the most effective tool that can be used to teach all the skills of the language sewing a variety of content. Graphic organizers can also be used by teachers to show a students' knowledge. A variety of graphic organizers such as webs, concept maps, Venn diagram, mind maps etc. can be used to enhance students' critical thinking skills and improving performance in academics. Graphic organizers help students' in a number of ways. They help students to think critically and creatively, increase reading comprehension, encourage decision making, help in brainstorming, organizing ideas and so on.

The EFL classrooms of Oman have been gradually moving towards being totally project based classrooms. The classroom activities, the learning outcomes incorporated, generic attributes and the assessments are all based on project based learning. The trend is on an upward incline as the language teachers have started realizing the contribution of PBL in effective teaching learning.

Discussion

This study focuses on answering two research questions: (1) What can teachers do to plan and enact PBL effectively in a language classroom using project based learning activities(2) How PBL instructions can help students' motivation and attitude towards learning.

This paper discusses the observations from two classes in the General Foundation Programme in the Language Center, and two classes from Bachelor Degree Programme under University Malaysia Pahang delivering Soft Skills1 in the Post Foundation Programme at Muscat College.

Higher education centers in Oman for specialized education are diverse in their composition. The focus is on the use of English for pursuing academic and professional goals in specific contexts. It is the effective use of language that the learners are evaluated. Teaching and learning are essentially social activities observed through a network of interpersonal exchange maintained through communication particularly if the environment is friendly and informal. The easiest way

of incorporating these is to start with activity based classroom pedagogy which aids retention, focuses on practical application and train students to use tools like graphic organizers to utilize them in their self-directed projects This is how a teacher releases responsibility to students in PBL.

Data Sources

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Collaborative research activities were conducted by three lecturers throughout two semesters to collect data and find the answer on how PBL instructions can help students' motivation and attitude in Muscat College of the Omani EFL learners moving onto the specialization in the degree programme. Data was collected on the basis of surveys and interviews of the students and the facilitators as well as the results of their individual assessments and group assessments. Learners determine their project and choice throughout the unit/lesson in the course book in the Language Centre, taking full responsibility for their learning. This research has also provided a base to examine the Generic attributes of Foundation students who progressed into the Post Foundation Programme which emphasized on critical thinking, collaborative learning, leadership skills, teamwork and problem solving skills.

A study was conducted to investigate how project based learning could enhance critical thinking and communicative skills in Foundation programme and in the Post foundation programme in the Soft skills1 module across two semesters. The qualitative data was collected through, classroom observation and informal interviews with the students and teachers while the quantitative data was obtained through monkey survey, and manual questionnaire.

Project Topics

This study describes various Project based learning activities in the College curriculum such as oral presentations in role plays, poster and power point presentations. All of these activities help in making learners realize their strength and potential through positive self-affirmation and self-talk, gain confidence and develop firsthand knowledge of the world around. In contrast, problem based case studies help learners to detect problems to arrive at possible solution and understand

the pros and cons of a given context. These activities enhance their reasoning, analytical skills, and most importantly knowledge of the world.

Method

The students were asked to do a group assignment through a role-play. The themes of the role play were derived from the topics of the soft skills syllabus keeping them as close as possible to the professional and work place environment. The idea of the role play was to explore students to the problems of real life, professional and work place challenges. The students were expected to critically analyze and present variety of solutions to each problem.

The role play was divided into three stages. Stage one was pre-presentation task where groups were asked to submit a proposal regarding the scenario of the role play and learning objectives covered. Stage two was the enactment of the role play and the final stage was submission of group report on the challenges and the learning objectives gained by the students during the process. The whole project contributed to the 30% of the module assessment.

Data Analysis

Summary of peer review: The students evaluate each other and gave feedback on the scale of 1 to 5 in three areas: case presented oral communication and clarity in report writing. These results were given as feedback to them. The objective of this exercise was to help students identify their weaknesses in an informal manner.

Summary of classroom observation: PBL activity was organized in two classes, the instructors monitored team work and the progress of the activity time to time. Instructions regarding the activity were clearly given; deadlines for submissions were disseminated to students. Handouts and cover page of the report and proposal were uploaded on Moodle.   The activity was included in the course outline to ensure that the students are aware of it from the beginning of the semester. The facilitator notes that the students take the responsibility of accumulating the information through instructions provided to them and progress in the activity to maintain deadlines. This method increase empowerment and accountability of both students and staff.

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Summary of teacher and student interviews: The teachers and two students from each class were interviewed after the completion of the project. The students said that the task was stimulating which enable them to work collaboratively and express their opinion in recommending solutions to the problems. Students held meetings in order to plan and accomplish their project. In addition, this assignment gave them chance to make new friends who were with them in class and had not got the opportunity to know them. Hence, it encouraged communication. The teachers expressed that the attempt to encourage group work through project based learning was successful. It also improved the critical thinking skills of students to a good extent and opinioned that more of such tasks should be initiated to students.

Summary of student survey: The following are the details of students who have taken the survey in the two consecutive semesters

Semester	Number of students
1	50 (GFP)
2	30 (Post Foundation-Soft skills)

In the monkey survey, student's feedback was gathered on the basis of ten questions to be used for future recommendations. The following questions were asked and the students were asked to answer with yes, no or not sure.

1. This activity encourages students to learn cooperatively with other students.
2. It provides an authentic learning experience.
3. It encourages higher order thinking skills.
4. It provides an appropriate challenge that can motivate the students to think critically.
5. It involves students in problem-solving tasks.
6. It helps students to understand the content being taught.
7. It allows students to explore knowledge related to soft skills.
8. It helps to improve communication skills.
9. This activity is meaningful to the students.
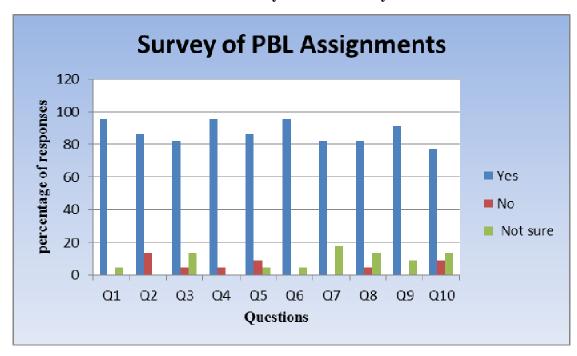10. This activity builds confidence in dealing with problems.

Analysis of the survey

Analysis of student's survey: The graph above indicates that majority of students displayed their interest in the group project. There were 90% positive goal oriented feedback.

The analysis of the monkey survey shows the response of 30 students. The feedback received from students was excellent. Especially, question 1,4 and 6 received 95% affirmative reaction, while other questions of the survey indicated positive feedback with the percentage around 80%-85%.It is interesting to note that only 15%-20% students were 'not sure' of their objectives. Overall, the graph showed that this type of learning is very helpful in boosting the 21st century skills required in the EFL learners. The student feedback also indicates improvement in their communication skills and confidence.

Findings

The findings of students and teachers are listed as follows:

- The classroom observation shows students participated enthusiastically in the role-play while their interest in writing the report was average.

- The student interviews indicate that the activity was interesting and helpful to them in forming opinions and discussing with their teams.

- The teachers expressed that the attempt to make students work in collaboration was successful.

- The students mixed well in the teams and spoke to each other regarding the planning and execution of the presentation.

- The teachers expressed in their interview that the students find the graphic organizers helpful in developing all the four skills through tasks like debates, authentic reading comprehension, essay writing and note-taking.

- The students conveyed that this approach boosted confidence and enhanced communication skills through various speaking activities.

Limitations of the study

- Due to the nature of the syllabus, the students' have limited time to meet and discuss difficulty in narrowing down the range of topics dealing to their local context such as on campus events
- Non-participating students can be a real challenge
- Lack of time to conduct preview and planning to provide suggestions on remediation
- Adherence to meet deadlines when student contributors delay in their submissions

Discussion of the findings

This study shows that the use of PBL approach in the class room of EFL learners promote analytical skills. It enables students to take responsibility for their learning and develop solutions for complex problems when they encounter them. In addition, PBL develops the four essential elements in the learners like cognitive skills, context knowledge, real-life experiences and habits of success. This approach also caters to the need for integrating the 21st century skills like collaboration, critical thinking and communication into EFL teaching in the GFP and

undergraduate programme, and it provides an insight to the teachers to involve strategies that inculcate these skills in their teaching and learning to EFL students.

Conclusion

It was found that the PBL helped learners to acquire a deeper knowledge through active exploration of real world challenges and problems and increased the long-term retention of skills and concepts. They have utilized 21st century tools like technology, digital research to investigate, collaborate, analyze, synthesize and present their learning. The core idea of this approach is the real world problems capture students' interest and provoke serious thinking so, the learner acquire new knowledge to solve the problem. The role of the teacher is to facilitate and assess deeper understanding rather than stand and deliver a planned lesson.

PBL is a style of active learning and inquiry -based learning. Learners are entities of self-directed learning they are involved in doing or making throughout the unit/lesson. They ask themselves the questions why, where and how to expand their knowledge before exploring. PBL substitute traditional model of instruction such as textbook-workbook focused activities with inquiry as the preferred mode for acquiring knowledge.

In addition, PBL approach is successful for the Omani EFL learners because the Omani culture promotes collaboration and brotherhood. And this approach is fairly accomplished in groups and needs a collaborative culture of mutual respect in the classroom or outside in order to work well. Therefore, learners enjoy working together to accomplish specific goals.

It develops critical thinking, problem solving and higher-order thinking among EFL Learners. According to Andrew Miller in his 'The whole child blog', says that PBL create engaging learning for all students, but the depth of learning requires careful, specific design. Part of student's engagement is the element of critical thinking. Complex problem solving and higher-order thinking skills, coupled with other elements such as authenticity, voice, and choice, open-ended driving question or challenge create an engaging context for learning. The approach allows an increasing degree of student voice.

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A final note is that through continuous exploration of topics related to real- life situation in the local context will enable in improving the quality of materials and language input that is provided to students.

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Andrew K. Miller is an educator and consultant. He is a National Faculty member for ASCD and the Buck Institute for Education. Connect with Miller on Twitter @betamiller

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