Project-Based Teaching

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Framing the Issue

Project-based learning (PBL) focuses on the active involvement of students in all aspects of a project, from the initial generation of ideas to the presentation of the final product. The guiding principle in PBL is learning by doing, as shaped by the ideas of numerous scholars over the years. Its major influence is the pedagogical creed of Dewey (1898), which drew attention to the psychological and social aspects of education. Dewey argued that teaching should not encourage a "passive, receptive, or absorbing attitude" (p. 15), but should begin with "a psychological insight into the child's capacities, interests, and habits" (p. 8) so as to involve the student in expressive and constructive activities as a social individual. Dewey's view is echoed in the work of Vygotsky (zone of proximal development) and Piaget (constructivism), among others, who see the construction of knowledge as arising from one's experience of objective reality.

Over time, these ideas laid the foundations for a range of student-centered pedagogies. Apart from PBL, these include teaching approaches focusing on inquiry and problem-solving. An early mention of the word *project* is found in Kilpatrick (1918). Its definition mirrors Dewey's stance on providing activities that give due consideration to the student's interests and capabilities:

> If we conceive activities as ranging on a scale from those performed under dire compulsion up to those into which one puts his 'whole heart', the argument herein made restricts the term 'project' or purposeful act to the upper portions of the scale. (p. 5)

As projects are also sometimes included in the wide range of student-centered pedagogies, the term *project* may be interpreted in diverse ways, not all of which may be consistent with the student-initiated and student-directed focus of PBL. In the 1990s, for instance, attempts to observe and document PBL in various classrooms were complicated by uncertainty as to whether the activities being observed—such as those that were teacher-driven or scripted for students (Thomas, 2000)—were true projects. With increasing interest in the use of PBL, particularly in the field of language education since the mid-1970s, a survey of the literature

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has indicated attempts among practitioners and researchers to clarify the defining features of PBL projects (e.g., Barge, 2010; Larmer & Mergendoller, 2010). Four such features are commonly mentioned:

1. *Learner autonomy*. PBL projects are student-initiated and student-led. They are not classroom-type activities found in textbooks or those directed by a teacher. While the teacher may need to provide some guidance, it is the students who decide on the final form and direction of the project. This allows the students to take ownership of the project, and so motivates them in the learning process.
2. *Collaboration*. PBL projects are collaborative. Students work and communicate with each other in small teams and with others outside the team in the course of the project. Every step of the project—from the negotiations (and compromises made) when deciding on a project idea to the delegation of tasks—presents opportunities for students to use language purposefully in context.
3. *Knowledge construction*. PBL projects heighten students' awareness about a specific issue. The various tasks transform and/or construct knowledge about the issue. The research and tasks involved are therefore constructive in nature; such projects exclude activities that require the individual to apply only his or her existing knowledge. The knowledge-construction process is invariably effortful but purposeful, and often requires an extended period of time to complete. PBL projects can last from a few days to a few months.
4. *Authenticity*. PBL projects address real issues. Even though some of the project ideas may address hypothetical situations (e.g., feasibility of paperless schools), these situations nevertheless represent distinct possibilities. Projects that deal with authentic issues allow students to appreciate the complexities of real-world problems and develop critical-thinking skills.

Apart from specifying project boundaries, these defining features also highlight the key role of the teacher in PBL. Unlike the traditional classroom, where the teacher is the provider of information, the teacher in a PBL setting serves as a facilitator and guide. More subtly, as PBL projects address open-ended problems and questions, and often involve issues from multiple disciplines, the teacher is frequently as much a learner as the students themselves.

Making the Case

PBL was introduced into language education in the mid-1970s as a way to offer students communicative opportunities to produce comprehensible output. A notable early use of PBL in English-language education took place in the early 1980s in Germany (Legutke, 1984, 1985). In this project, popularly known as the *Airport Project*, school children aged about 11 years spent a few weeks practicing spoken English before making a trip to Frankfurt Airport to interview English-speaking passengers and employees about various general interest

topics, such as their jobs and opinions about Germany. Working in groups, the project helped the school children to develop self-confidence and interpersonal skills.

Indeed, several positive outcomes of PBL have been similarly reported in the literature, although these generally take the form of anecdotal accounts. The most commonly cited benefit is the authenticity of the students' language experience (Stoller, 2006); the nature of PBL projects require students to use and process language extensively in their taking of notes and processing of information from multiple sources (e.g., books, audio-visual media, interviews). Other reported benefits include creativity, enhanced research skills, deeper understanding of the key concepts being investigated, and improved interpersonal and social skills (Petersen, 2008). PBL activities can also benefit students who may not function well in traditional classrooms.

Notwithstanding these benefits, two cautionary points should be noted. First, controlled, empirical studies focusing on language abilities and skills are limited. Indications are mixed as to whether the authentic language experiences of students translate to improved language use and proficiency. Results from a 2012 report by the West Virginia Department of Education showed that PBL students did not outperform their non-PBL peers in English/language arts in standardized tests (Hixson, Ravitz, & Whisman, 2012). Positive results, on the other hand, have been reported from the use of expeditionary learning, a model based on the educational ideas of Kurt Hahn (1886–1974), the founder of Outward Bound. Expeditionary learning uses project-based expeditions to engage students in interdisciplinary topics, often involving the community. In a 2013 evaluation of five middle schools, students were reported to be five to seven months ahead of their peers in reading ability after two to three years of expeditionary learning (Nichols-Barrer & Haimson, 2013).

Second, empirical work on student attitudes toward PBL in ESL/EFL settings is also rare, and the results similarly mixed. Early studies showed evidence of student dissatisfaction with project work (Beckett, 2002). Students who expressed discontent felt that PBL hindered them from focusing on specific language skills. They preferred traditional activities to help them better understand their areas of weaknesses (e.g., grammar). By contrast, most participants in a later study involving adult ESL students in Canada expressed positive views toward PBL (Petersen, 2008). Many students found that the PBL process allowed them to build up their confidence in using the language. A possible reason for these mixed results is the background of the students. Some of them who preferred traditional language activities could have spoken from their own East Asian cultural perspectives. In such cultures, teachers are regarded as knowledge providers and textbooks as the source of knowledge (Guo, 2006).

The many positive accounts of PBL, though, continue to suggest that it is a valuable way to integrate content knowledge and skills in the learning process. As PBL is markedly different from traditional classroom teaching, a change in mindset is needed not only among students, but teachers. While student dissatisfaction may

have been noted in some studies, these are concerns that can be addressed and rectified at the practical level. With appropriate guidance from teachers, these reservations can be minimized.

Pedagogical Implications

As PBL lays emphasis on learner autonomy, the role of the teacher as a facilitator is crucial, particularly when young learners are involved. A typical PBL process comprises three broad stages: (1) idea generation, (2) research, and (3) presentation (Patton, 2012). The teacher's input in each of these stages serves more than a scaffolding function. It allows students to interact with the teacher (i.e., the language expert) rather than just their peers, who may themselves have various difficulties with the language. In meeting the students in small project teams, the teacher is also able to better assess each student's progress and provide personalized help when needed.

The strategies in the sub-sections below are framed within the language-education context. Other issues that are not directly relevant (e.g., teamwork, student motivation) are not discussed.

Stage 1: Idea Generation

Ideally, PBL should be introduced gradually into the curriculum. This is to allow teachers time to first familiarize themselves with the interests, needs, and language abilities of their students. This knowledge can be very helpful to the teacher when it is time for project teams to be formed. Should there be a tendency for students from very similar cultural or language backgrounds to group themselves together, the teacher may need to intervene to ensure a more even mix within the team.

In line with the feature of authenticity, project ideas in language education should ideally revolve around issues of general interest, current affairs, or issues affecting the community. Project ideas can be generated in a number of ways. The teacher may want to screen a short video about a certain topic, invite a guest speaker to speak on the topic, or get the class to read related articles or news reports. What is crucial is the discussion that follows. This should be actively encouraged not only to spark student interest, but also to encourage them to share their views openly, using the target language. As many students regard the teacher as a role model, it is therefore vital for the teacher to be affirmative and encouraging at all times during these discussion sessions.

During brainstorming activities for project ideas, the teacher will need to keep a watchful eye on the participation level of the team members and any difficulties they may be facing. Project teams should be comfortably small so that active interaction can take place among the members. At this preliminary stage, teacher feedback is needed in the following areas:

1. Narrowing of the project idea and project objectives. The teacher should always be mindful of the age- and level-appropriateness of the project idea. The project

team should not be expected to do too much, as the project may then become a chore, and the students lose interest in it. Project ideas that are too complex are unlikely to result in knowledge transformation/construction. It is for this reason that the objectives of the project must be unambiguously stated.

2. *Timeline*. The deadline for the project should always be made known to the students. Each team should draw up a schedule to chart the development of the project, and agree on the roles and responsibilities of each team member.

Discussions on project ideas and timelines need not involve merely speaking and listening; writing can also be incorporated by requiring each group to take simple notes of all decisions made and future plans. It is sometimes helpful for a template to be designed for this purpose to ensure consistency (Patton, 2012). The teacher may also want project teams to submit these notes on a regular basis to monitor their progress.

Stage 2: Research

Students' exposure to language input is most intense during the research stage. Here, students process information from a variety of sources, both in print and electronic form. Depending on the research topic, they may also need to access audio-visual sources, and interview people in the community. The demands on the students are not just in the processing of these sources (i.e., reading, listening, viewing) or the taking of notes, but, crucially, in the bringing together of different pieces of information to form a coherent whole.

To help students in this direction, teacher feedback is needed in the following areas:

1. *Selection of information*. Not all sources of information are trustworthy, and help should be extended by the teacher to develop students' information literacy. With the information explosion brought about by the Internet, the need to exercise caution in the selection of information is especially urgent.
2. *Project objectives*. It is not uncommon for teams to be distracted when dealing with vast amounts of information. Keeping to the objectives helps to ensure that students process and evaluate the collected information carefully. This not only serves to improve their reading skills (and listening skills in the case of audio-visual sources), but also to develop critical-thinking skills.
3. *Making connections*. Analyzing the information in relation to the objectives themselves can be challenging to some students. Mind-map strategies—including the software versions—may be used to help students see connections among the different pieces of information. In this endeavor, students read and/or listen to understand not merely the micro meanings of the sources, but also their larger and implied meanings.

Stage 3: Presentation

Depending on the course or program, the presentation can take the form of a written report, a poster, an oral presentation, a product demonstration, or a

combination of any of these forms. The clear use of language at this stage is critical to highlight what each project team has found or accomplished.

It is important for teachers to show exemplars of best practices to the students. Explicit instruction is also needed at this stage to guide students on not just what to write or say, but *how* it should be done. This is particularly important in the case of reports and posters since not all students may be familiar with the conventions of these genres.

Oral presentations

In oral presentations (including product demonstrations), students often worry about their pronunciation, and how that might affect the presentation. Reassuring the students can go a long way to build up their confidence. Students should be reminded that the focus is not on changing their accents, but on making themselves understood. This often requires them to simply slow down so that words can be articulated more clearly.

Students should also be actively encouraged to consult authoritative sources for the pronunciation of unfamiliar words. Reputable online dictionary websites (e.g., *Cambridge*, *Longman*, *Merriam-Webster*) are helpful in this respect as they usually contain audio files, thus allowing students to quickly find out how certain words are pronounced.

Written presentations

Written presentations include reports, posters, and visual aids that are typically used in oral presentations (e.g., PowerPoint or Prezi slides). While the use of exemplars is helpful to show the broad language features of each type of written presentation, specific teaching points are still needed as ESL/EFL learners are very likely to encounter complications in the writing process (e.g., use of tenses, precision in meaning, coherence). In this respect, lessons and classroom activities on specific problematic areas can be incorporated to complement PBL. As the capabilities of students are different from class to class, and from year to year, the teacher must be prepared to be flexible in the planning of such in-class lessons.

Strategies to help students improve their writing include:

1. *Rewriting*. The benefits of writing multiple drafts and revising are well known. Through rewriting, students learn to reread their own work carefully, and make appropriate revisions to refine the language and presentation of ideas. At the end of the course, the teams' multiple drafts can also serve as a very useful reference for the teacher to better understand how the final versions came about, and the common areas of difficulties that students encountered in the writing process. This can help the teacher to plan ahead in anticipation of similar problems in subsequent courses.
2. *Peer review*. Student writers may become so familiar with their own work that they cannot see the problems in their writing that other readers do. Peer feedback is a way to engage the entire class in each other's work; it builds on the

reading and critical-thinking skills that the students have picked up during the research stage. More subtly, the review also serves as a reminder to the reviewing team to avoid the shortcomings and/or emulate the strengths they may have noticed in another team's work.

3. *Conferencing*. Conferences allow feedback to address the specific needs of each team, and each member of the team. Students can also respond directly to the teacher's feedback during these sessions to better understand how the writing can be improved. This is not easily accomplished in asynchronous feedback (e.g., written feedback).

The role of the teacher, thus, is critical. The teacher enriches the students' educational experience by exposing them to authentic contexts in which language is used. The myriad of activities involved in PBL offer valuable opportunities for students to practice different language skills in real settings. While some teaching input is still needed, particularly during the presentation stage, the real teaching comes from the students' own experiences and struggles in the process.

SEE ALSO: In-Service Training in Preparing NESTs and NNESTs; Scaffolding Technique

References

Barge, S. (2010). *Principles of problem and project based learning: The Aalborg PBL model*. Aalborg, Denmark: Aalborg University.

Beckett, G. H. (2002). Teacher and student evaluations of project-based instruction. *TESL Canada Journal*, *19*(2), 52–66.

Dewey, J. (1898). The pedagogical creed of Professor John Dewey. In O. H. Lang (Ed.), *Educational creeds of the nineteenth century* (pp. 5–19). New York, NY: E. L. Kellogg & Co.

Guo, Y. (2006). Project-based English as a foreign language education in China: Perspectives and issues. In G. H. Beckett & P. C. Miller (Eds.), *Project-based second and foreign language education: Past, present, and future* (pp. 143–55). Greenwich, CT: Information Age Publishing.

Hixson, N. K., Ravitz, J., & Whisman, A. (2012). *Extended professional development in project-based learning: Impacts on 21st century teaching and student achievement*. Charleston, WV: West Virginia Department of Education.

Kilpatrick, W. H. (1918). *The project method: The use of the purposeful act in the educative process*. New York, NY: Teachers College, Columbia University.

Larmer, J., & Mergendoller, J. R. (2010). Seven essentials for project-based learning. *Educational Leadership*, *68*(1), 34–7.

Legutke, M. (1984). Project Airport Part 1. *Modern English Teacher*, *11*(4), 10–14.

Legutke, M. (1985). Project Airport Part 2. *Modern English Teacher*, *12*(1), 28–31.

Nichols-Barrer, I., & Haimson, J. (2013). *Impacts of five expeditionary learning middle schools on academic achievement*. Cambridge, MA: Mathematica Policy Research.

Patton, A. (2012). *Work that matters: The teacher's guide to project-based learning*. London, England: Paul Hamlyn Foundation.

Petersen, C. (2008). *Project-based learning through the eyes of teachers and students: Investigating opinions of PBL in adult ESL*. Master of Arts, University of Victoria, Canada.

Stoller, F. (2006). Establishing a theoretical foundation for project-based learning in second and foreign language contexts. In G. H. Beckett & P. C. Miller (Eds.), *Project-based second and foreign language education: Past, present, and future* (pp. 19–40). Greenwich, CT: Information Age Publishing.

Thomas, J. W. (2000). *A review of research on project-based learning*. San Rafael, CA: Autodesk Foundation.

Suggested Readings

Beckett, G. H., & Miller, P. C. (Eds.). (2006). *Project-based second and foreign language education: Past, present, and future*. Greenwich, CT: Information Age Publishing.

Buck Institute of Education. (n.d.). *Project-based learning*. Retrieved from http://bie.org/

Patton, A., & Robin, J. (2012). *Work that matters: The teacher's guide to project-based learning*. London, England: Paul Hamlyn Foundation.

Railsback, J. (2002). *Project-based instruction: Creating excitement for learning*. Portland, OR: Northwest Regional Educational Laboratory.