Project-Based Learning

Project-Based Learning is a dynamic approach to teaching in which students explore real-world problems and challenges. With this type of active and engaged learning, students are inspired to obtain a deeper knowledge of the subjects they're studying.

Project-based learning is considered an alternative to paper-based, rote memorization, teacher-led classrooms. Proponents of project-based learning cite numerous benefits to the implementation of these strategies in the classroom including a greater depth of understanding of concepts, broader knowledge base, improved communication and interpersonal/social skills, enhanced leadership skills, increased creativity, and improved writing skills.

John Dewey initially promoted the idea of "learning by doing." In My Pedagogical Creed (1897) Dewey enumerated his beliefs regarding education: "The teacher is not in the school to impose certain ideas or to form certain habits in the child, but is there as a member of the community to select the influences which shall affect the child and to assist him in properly responding to these......I believe, therefore, in the so-called expressive or constructive activities as the centre of correlation." (Dewey, 1897) Educational research has advanced this idea of teaching and learning into a methodology known as "project-based learning." Blumenfeld & Krajcik (2006) cite studies by Marx et al., 2004, Rivet & Krajcki, 2004 and William & Linn, 2003 state that "research has demonstrated that students in project-based learning classrooms get higher scores than students in traditional classroom."

Markham (2011) describes project-based learning (PBL) as: " PBL integrates knowing and doing. Students learn knowledge and elements of the core curriculum, but also apply what they know to solve authentic problems and produce results that matter. PBL students take advantage of digital tools to produce high quality, collaborative products. PBL refocuses education on the student, not the curriculum--a shift mandated by the global world, which rewards intangible assets such as drive, passion, creativity, empathy, and resiliency. These cannot be taught out of a textbook, but must be activated through experience."

What is PBL?

In Project Based Learning (PBL), students go through an extended process of inquiry in response to a complex question, problem, or challenge. While allowing for some degree of student "voice and choice," rigorous projects are carefully planned, managed, and assessed to help students learn key academic content,
practice 21st Century Skills (such as collaboration, communication & critical thinking), and create high-quality, authentic products & presentations. Project-based education is an instructional approach that seeks to contextualize language learning by involving learners in projects, rather than in isolated activities targeting specific skills. PBL is a model for classroom activity that shifts away from the classroom practices of short, isolated, teacher-centered lessons and instead emphasizes learning activities that are long-term, interdisciplinary, and student-centered.

Rigorous, meaningful and effective Project Based Learning:

- Is intended to teach significant content. Goals for student learning are explicitly derived from content standards and key concepts at the heart of academic disciplines.

- Requires critical thinking, problem solving, collaboration, and various forms of communication. To answer a Driving Question and create high-quality work, students need to do much more than remember information. They need to use higher-order thinking skills and learn to work as a team. They must listen to others and make their own ideas clear when speaking, be able to read a variety of material, write or otherwise express themselves in various modes, and make effective presentations. These skills,
competencies and habits of mind are often known as “21st century skills,” because they are prerequisite for success in the 21st century workplace.

- Requires inquiry as part of the process of learning and creating something new. Students ask questions, search for answers, and arrive at conclusions, leading them to construct something new: an idea, an interpretation, or a product.

- Is organized around an open-ended Driving Question. This focuses students’ work and deepens their learning by framing important issues, debates, challenges or problems.

- Creates a need to know essential content and skills. Project Based Learning reverses the order in which information and concepts are traditionally presented. A typical unit with a “project” add-on begins by presenting students with knowledge and concepts and then, once gained, giving students the opportunity to apply them. Project Based Learning begins with the vision of an end product or presentation. This creates a context and reason to learn and understand the information and concepts.

- Allows some degree of student voice and choice. Students learn to work independently and take responsibility when they are asked to make choices. The opportunity to make choices, and to express their learning in their own voice, also helps to increase students’ educational engagement.

- Includes processes for revision and reflection. Students learn to give and receive feedback in order to improve the quality of the products they create, and are asked to think about what and how they are learning.

- Involves a public audience. Students present their work to other people, beyond their classmates and teacher – in person or online. This “ups the stakes,” increasing students motivation to do high-quality work, and adds to the authenticity of the project.

**Teacher’s Role**

- Serve as facilitator
- Model thinking and problem-solving strategies effectively
- Structure meaningful tasks
- Work with students to frame worthwhile questions
- Manage the structure of multiple day-to-day activities to produce high quality outcomes
- Teach students to set goals
Student’s Role

* Set goals
* Explore and ask questions
* Work well with peers
* Stay accountable to self, peers, and teacher for project outcomes

Research says that Project-Based Learning ...

- Increases student motivation and engagement in learning
- Is more effective than traditional instruction in increasing academic achievement
- Improves student retention of knowledge over time
- Improves mastery of 21st century skills
- Is especially effective with lower-achieving students

PBL is a great way to engage struggling students. Project planning is organized according to five design principles.

*Design Principle #1:* Begin with the End in Mind
Great projects begin with the end in mind. Think about which standards will be addressed and think about how you will know when students have mastered the standards. In PBL classrooms, the important standards relate to the goals of the classroom. For example, in a science classroom, the primary outcomes would relate to science standards. However, in an intervention classroom, the primary
unit outcomes relate to improved student reading and communication skills. Of course, they will also learn important content material in this process.  

**Design Principle #2: Craft the Driving Question.**
Pulling together the theme and content standards into a significant, meaningful question engages students and helps them focus their efforts throughout the project.  

**Design Principle #3: Plan the Assessment**
Every project should be driven by a specific set of outcomes that encompass the content and skills that students are expected to learn.  

**Design Principle #4: Map the Project**
A constructed project map provides structure for the project and directs student activity. This means the map will be more than just a sequence of activities.  

**Design Principle #5: Manage the Process**
Use tools and strategies available to help you manage the process of project based learning. Many of these management tools can be found in the PBL Starter Kit.  

**Project-Based Learning engages students in complex, real-world problem solving that is:**  

* **Academically Rigorous**
  - Students use prior knowledge and research skills  
  - Students determine what new academic knowledge and research skills are needed to acquire them  
  - Students gather information from a variety of sources  
  - Teachers encourage work that is complex and draws on a full range of students’ abilities  

**Project-Based Learning engages students in complex, real-world problem solving that is:**  

* **Relevant to students and the community**
  - Students choose projects based on interests  
  - Student learning has value in the community  
  - Curriculum is related to real-life issues helping students understand what they are learning and why they are learning it  

**Project-Based Learning engages students in complex, real-world problem solving that:**  

* **Empowers students as active learners**
  - Students become practitioners using and demonstrating knowledge, not just storing it
• Students negotiate project ideas and assessment criteria with teachers and community members
• Teachers act as coaches and facilitators
  Teachers encourage intellectual risk-taking

During PBL teachers/facilitators will:
▼ Provide opportunities for in-depth investigations of worthy topics
▼ Allow learners to become more autonomous as they construct personally-meaningful artifacts that are representations of their learning
▼ Motivate students by engaging them in their own learning

PBL affords students opportunities to develop Gardner’s Multiple Intelligences, thus accommodating a wide variety of learning styles
Why should I do PBL?

- Provides opportunities for students to pursue their own interests and questions and make decisions about how THEY will find answers and solve problems
- Improves education for all students
- Facilitates student integration of the content of different subjects
- Teaches children to use their own minds well and applies what they learn in school to life-long endeavours
- Helps students to become technologically literate
- Establishes connections to life outside the classroom, addressing real-world concerns, and developing real-world skills
- Skills learned through PBL are those desired by today’s employers

What are the benefits of PBL?

- Offers multiple ways for students to participate and to demonstrate their knowledge
- Accommodates different kinds of intelligences
- Shifts students away from doing only what they typically do in a classroom environment
- Encourages the mastery of technological tools, thus preparing them for the workforce
- Serves as a medium for students who don’t usually participate
- Prompts students to collaborate while at the same time support self-directed learning
- Offers a learning experience that draws on the thinking and shared efforts of several individuals
- Helps students develop a variety of social skills relating to group work and negotiation
- Promotes the internalization of concepts, values, and modes of thought, especially those related to cooperation and conflict resolution
- Establishes a supportive and non-competitive climate for students
- Provides a means for transferring the responsibility for learning from teachers to students
- Calls upon students to explain or defend their position to others in their project groups, so that learning is more apt to be personalized and valued

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