



WPI

Project-Based Learning

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Center for Project-Based Learning

**Mathematics and Science for Schools in Sub-Saharan Africa:
A World Bank Initiative to Improve Student Learning in Africa
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Project-Based Learning...

- ...is a pedagogical approach—using projects—that focuses on...
 - student learning of academic content
 - critical thinking/problem solving
 - collaboration
 - self-management
- ...has been shown to improve student learning
- ...has key features that are present on a continuum, depending on the context and purpose of the project
- ...requires teachers and students to take “non-traditional” approaches towards working together

Essential Project Design Elements

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- **Challenging Problem or Question** - Heart of the project: engage without intimidation (creates a real need to know something)
- **Sustained Inquiry** - An extended process of asking questions, finding resources, and applying information
- **Authenticity** - Real-world context, tasks and tools, quality standards, or impact
- **Student Voice & Choice** - Students make decisions, including how they work and what they create
- **Reflection** - Students reflect on learning, the effectiveness of their inquiry, the quality of their work, and obstacles
- **Critique & Revision** - Students receive and use feedback to improve their process and products (formative evaluation)
- **Public Product** - Students make their project work public by explaining, displaying and/or presenting it beyond the classroom

Project-Based Teaching Practices

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- **Design & Plan** - Create a project for your context and your students; include student voice and choice when planning
- **Align to Standards** - When planning, make sure the project addresses key knowledge and understanding from relevant subject areas
- **Build the Culture** - Foster student independence and growth, open-ended inquiry, team spirit, and attention to quality
- **Manage Activities** - Working with students, organize tasks & schedules, set deadlines, find & use resources, create products & make them public
- **Scaffold Student Learning** - Support all students in reaching project goals using various lessons, tools, and instructional strategies
- **Assess Student Learning** - Determine what students know, understand, and can do using various formative and summative approaches
- **Engage & Coach** - Learn and create with students; give them support when they need skill building, redirection, encouragement and celebration

Resources for Project-Based Learning

- Buck Institute for Education
<https://www.bie.org/>
- WPI Center for Project-Based Learning
<http://wp.wpi.edu/projectbasedlearning/>
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