Session #59: Implementing Project-Based Learning in K-12 Classrooms

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Learning Outcomes

- Synthesize knowledge of how to effectively plan and implement engaging, rigorous and relevant PBL units.
- Develop components of a PBL unit, including a Driving Question, Entry Event and Project Summary.
- Describe how PBL supports College and Career Readiness and the Common Core State Standards.
- Identify technology tools, literacy strategies and assessments appropriate for use throughout PBL.
Making Connections: QuickWrite

- On a scrap sheet of paper or a post-it note, be prepared to write down as many words or phrases you can think of associated with Project Based Learning.

- You have 30 seconds to write down your ideas.

- Discuss your words or phrases with an elbow partner, noting any similarities or differences.

- Be prepared to share some of your ideas out loud.
What is Project Based Learning?

- Constructivist and Inquiry-Based approach to learning
- Focus is on the learner
- Geared toward “real world”, or relevant tasks
- Projects or problems have more than one approach or answer
- Simulates professional situations
- Teacher as coach or facilitator
- Students generally work in cooperative groups
- Students encouraged to find multiple sources of information
- Emphasis on authentic, performance-based assessment
- Emphasizes individual and collaborative problem solving
- Incorporates peer feedback and instruction
Edgar Dale’s Cone of Experience

"Tell me and I forget, show me and I remember, involve me and I understand."

- Confucius
## Clarifying Misconceptions

### What makes projects different from Project-Based Learning?

<table>
<thead>
<tr>
<th>Projects</th>
<th>Project-Based Learning</th>
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<tbody>
<tr>
<td>Content driven &amp; product-based</td>
<td>Curriculum driven &amp; standards-based</td>
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<tr>
<td>Teacher-directed</td>
<td>Student-directed</td>
</tr>
<tr>
<td>Knowledge distributed</td>
<td>Knowledge seeking</td>
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<tr>
<td>Composed of a direct, or closed, project assignment</td>
<td>Is open-ended and process-oriented</td>
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<tr>
<td>Designed with the “average” student in mind</td>
<td>Poses a question or a problem that all students can answer</td>
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<tr>
<td>Typically requires application-level learning with project production at</td>
<td>Is investigative; student learning takes place throughout project development, with</td>
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<tr>
<td>the end of a benchmark or unit</td>
<td>learning benchmarks in place</td>
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<tr>
<td>Usually allows only one outcome</td>
<td>Several outcomes may be generated</td>
</tr>
<tr>
<td>Summative assessment only</td>
<td>Summative &amp; formative assessment</td>
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*International Center for Leadership in Education*
Examples: Project v. PBL

**Project**
Students research and learn about aspects of advertising and then produce a brochure or short video of a new advertisement for a popular product.

**Project Based Learning**
*Students investigate the question, “How can we persuade tourists to come to our town?” Students work with local businesses to plan new ways of advertising to attract tourists and help the economy, while learning about persuasive writing and graphic design used in advertising. The students also work with the business leaders to develop a presentation to the Chamber of Commerce and general public to elicit support in the community for local businesses.*
Rigor/Relevance Framework

Project Based Learning – High Rigor, High Relevance
Rigor Means Thinking

Instruction that is *Rigorous* means that lessons are framed at the high end of the Knowledge Taxonomy.

- **Knowledge**
- **Comprehension**
- **Application**
- **Analysis**
- **Synthesis**
- **Evaluation**
Analyzing the Rigor of PBL

Verb List by Quadrant

Using Rigor and Relevance to Create Effective Instruction

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Relevance is the purpose of learning.

- Acquire knowledge
- Apply knowledge
- Interdisciplinary
- Real-world predictable
- Real-world unpredictable
A relevant learning experience asks students to use their knowledge to tackle real-world problems that have more than one solution.
We will be learning about the components of this template today, as well as actively engaging in activities and strategies that will assist with planning some specific components, including the Driving Question, Entry Event and Project Summary.

The References & Recommended Resources slides at the end of this presentation will also direct you to many useful tools for you to use in the continued planning of PBL.
Planning PBL: The Process

- **Logistics**
  Project Title, Grade Level(s), Subject(s), Teacher(s) & Duration

- **Alignment to Standards**
  Interdisciplinary Focus; includes priority & related standards (ELA & Math CCSS, NGSS, etc.) and 21st Century Skills

- **Device & Revise the Driving Question**
  Open-ended; addresses a real-world issue; engages the participants

- **Develop a Project Summary**
  Supports the Driving Question; identifies the purpose, and the intended goals and outcomes; demonstrates rigor and relevance
Planning PBL: The Process

- **Develop the Assessment(s)**
  Formative and summative; aligned to priority standards; Rubrics/Scoring Guides to be developed and used

- **Draft the Stages and Outcomes of the Project**
  Timelines; students’ responsibilities; grouping of students; determine resources needed

- **Facilitate the PBL Process**
  Plan the Entry Event; determine instructional strategies; scaffold students as needed; revise the plan as needed with students; arrange for experts or mentors; elicit student questioning; support collaboration; arrange for an appropriate audience
Characteristics of Driving Questions

A PBL experience should be established around a driving question, which:

- Creates interest and challenge (*Rigor*)
- Connects the work involved with real-world experiences (*Relevance*)
- Fosters independence and interdependence (*Relationships*)
- Initiates, focuses and engages inquiry
- Clearly communicates the purpose, or main focus, of the project
- Is framed according to standards
- Acts as a guide for project planning
## Identifying High-Quality Driving Questions

### Defining a Driving Question

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>What are the major causes of the Civil War?</td>
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<tr>
<td>Is global warming fact or fiction?</td>
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<tr>
<td>Does playing video games cause children to act violent?</td>
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<tr>
<td>Is Democracy the best form of government?</td>
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<tr>
<td>What is the purpose for school bell schedules?</td>
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<tr>
<td>What is the right balance between security and freedom?</td>
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<tr>
<td>In what ways do animals become endangered?</td>
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<tr>
<td>What is the process for financing a home?</td>
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### Refining a Driving Question

<table>
<thead>
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<tbody>
<tr>
<td>What effects does the Civil War still have on society today?</td>
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<tr>
<td>What effects do video games have on children?</td>
</tr>
<tr>
<td>How can we convince the Board of Education to adjust the start and end time of the school day?</td>
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<tr>
<td>How can endangered species be saved?</td>
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<tr>
<td>Is it better to rent or buy a house?</td>
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</table>
Develop a Driving Question

Using the Project Based Learning Planning Template provided, develop a Driving Question appropriate for your grade level, content or specialty.
Driving Question Frames

- Can we *design* a ____________ for/to do ____________?
- How can we *create* a ____________ for ____________ to *demonstrate* ____________?
- How can we *convince/persuade* ____________ that/to ____________?
- Can we *adapt* ____________ to do ____________?
The entry event is an engaging activity that should initiate student inquiry. It should illicit students’ interest, excitement and motivation for the PBL topic.

Along with the driving question, the entry event is a critical component for PBL. The entry event should address students’ “need or want to know”, as this will increase the likelihood of students being fully engaged in the learning process.

Let’s look at some possible ideas for PBL entry events that can engage students, initiate inquiry and that are relevant...
## Entry Events: High or Low Rigor?

<table>
<thead>
<tr>
<th>Examining the Level of Knowledge</th>
<th>H or L</th>
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<tbody>
<tr>
<td>High school students read and discuss a mock crime report and view sketches of the details of the mock crime scene they are going to investigate further.</td>
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<tr>
<td>Middle school students listen to a guest speaker discuss his/her experience with career counseling before investigating careers.</td>
<td></td>
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<tr>
<td>Secondary students view educationally appropriate clips from several documentaries about the food industry before exploring global health and nutrition issues.</td>
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<tr>
<td>Elementary students develop and administer a survey about an important community issue to help narrow the focus of a project addressing the issue.</td>
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<tr>
<td>Students are required to complete a series of reproducible or teacher-made worksheets to get familiar with a topic they will be studying.</td>
<td></td>
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<tr>
<td>Secondary students explore and debate the legitimacy of a variety of false and sensationalized resources to initiate inquiry into the power of the media.</td>
<td></td>
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Step Inside Routine

**Step 1:** introduce an image, story, video or question

**Step 2:** ask students to take the perspective (or step inside) a person or thing in the image

**Step 3:** ask students to list what they see, then step inside and list what the person in the image might believe, what they care about and what they wonder

**Step 4:** have students make their thinking visible and public (chart or poster paper), then share with others
Making it Visual

Step Inside Routine

My perspective about...

see  believe  care  wonder
The New York Times has a wonderful resource, The Learning Network: Teaching and Learning with the New York Times, that could be used for PBL Entry Events.
Let’s Reflect...

Step Inside Routine

My perspective about...

see  |  believe  |  care  |  wonder
Describe an Entry Event

Using the Project Based Learning Planning Template provided, jot down some ideas for an Entry Event that aligns with the Driving Question you developed appropriate for your grade level, content or specialty.
Rigor & Relevance in PBL

Chunk, Chew & Check

A PBL unit will also require a Project Summary. Let’s look at a few examples.

**Chunk:** Read a PBL unit Project Summary.

**Chew:** Take time to think about what makes the Project Summary rigorous and relevant.

**Check:** Turn to a partner and share what you found to be rigorous and relevant about the Project Summary. Be sure to give supporting evidence.

Students research and estimate the costs associated with designing a dream home and plan a personal budget. They investigate and compare and contrast the types and costs of various home furnishings using catalogs, magazines and on-line stores that stock furniture. Based on building codes and their budget, they individually develop a blueprint of a dream home with all perimeter and area calculations included. They then analyze the characteristics of different real estate ads and write a real estate advertisement for their dream home, enticing other students, teachers and staff to decide which home they would “purchase”, with all proceeds being contributed to a charitable housing organization.
Draft a Project Summary

Using the Project Based Learning Planning Template provided, begin drafting the Project Summary for your PBL unit.

Reflect on the level of rigor and relevance of this section by completing a verb analysis.
PBL & the R/R Framework

Students examine, analyze & compose Research

Students explore & design through Project-Based Learning

Students learn through Direct Instruction

Students complete Teacher-developed Projects

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College & Career Readiness

Students who are college and career ready are able to:

- Demonstrate independence
- Build strong content knowledge
- Respond to the varying demands of audience, task, purpose and discipline
- Comprehend as well as critique
- Value evidence
- Use technology and digital media strategically and capably
- Understand other perspectives and cultures

Common Core State Standards Initiative
http://www.corestandards.org/
What do you consider to be some of the 21st Century Skills that PBL addresses that we could expand this graphic with?

Making Connections

Reflect on the concepts of college and career readiness and how they connect with the 21st Century Skills.

Take a minute and **THINK** about your response to the following question: *How does PBL help prepare students for 21st Century careers?*

On a scrap sheet of paper or post-it note, **WRITE** down your ideas and responses. Be prepared to later share aloud.

**PAIR** with a someone and explain your responses to the question.

Be prepared to **SHARE** what you or your partner discussed.
Some Key Points in ELA CCSS Related to PBL

ELA Writing
“Research—both short, focused projects (such as those commonly required in the workplace) and longer term in depth research—is emphasized throughout the standards but most prominently in the writing strand since a written analysis and presentation of findings is so often critical.”

ELA Speaking & Listening
“The standards require that students gain, evaluate, and present increasingly complex information, ideas, and evidence through listening and speaking as well as through media.”

Common Core State Standards Initiative
http://www.corestandards.org/
## A Few Best-Fit Literacy Strategies

<table>
<thead>
<tr>
<th>Explicit vocabulary instruction (academic &amp; domain-specific vocabulary, word walls, etc.)</th>
<th>Varied methods for student communication &amp; collaboration</th>
<th>Use diverse information sources (photographs, illustrations, video clips, movies, audio, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chunk, Chew &amp; Check (also known as 10-2, 5-2)</strong></td>
<td><strong>Expert Groups</strong></td>
<td><strong>Graphic organizers, concept mapping, brainstorming</strong></td>
</tr>
<tr>
<td>Debate, Discussion, Role-Play, etc.</td>
<td>QuickWrite or QuickSpeak</td>
<td>Varied groupings, such as Jigsaw</td>
</tr>
<tr>
<td><strong>Make connections across curriculum; interdisciplinary studies</strong></td>
<td>Paraphrase; use synonyms, antonyms, cognates</td>
<td>Charts (observation, inquiry, pictorial, comparative)</td>
</tr>
<tr>
<td><strong>Develop academic language (oral and written)</strong></td>
<td>Incorporate note-taking skills</td>
<td>Provide sentence and question frames</td>
</tr>
</tbody>
</table>
Some Key Points in Math CCSS & NGSS Related to PBL

Mathematics
“The high school standards call on students to practice applying mathematical ways of thinking to real world issues and challenges; they prepare students to think and reason mathematically.”

Next Generation Science Standards, Framework Dimension 1: Practices
“As in all inquiry-based approaches to science teaching, our expectation is that students will themselves engage in the practices and not merely learn about them secondhand. Students cannot comprehend scientific practices, nor fully appreciate the nature of scientific knowledge itself, without directly experiencing those practices for themselves.”

Common Core State Standards Initiative
http://www.corestandards.org/

Next Generation Science Standards
http://www.nextgenscience.org/
“Just as media and technology are integrated in school and life in the twenty-first century, skills related to media use (both critical analysis and production of media) are integrated throughout the standards.”

Common Core State Standards Initiative
http://www.corestandards.org/

What kinds of technological and digital resources do you currently have access to for instruction and student learning?

How can you currently use the technological and digital resources that are available to support Project Based Learning in your classroom?
PBL Assessment:
- Should have a balance of both *formative* and *summative* assessments
- Must be aligned to standards (CCSS, NGSS, etc.)
- Might be different for each student or for groups of students
- Should be on-going, and student-driven as much as possible
Assessment Types

**Formative**
- Criteria and goal setting with students
- Pre-testing
- Observations and record keeping
- Questioning strategies
- Self and peer assessment
- Student record keeping or journaling

**Summative**
- District benchmark or interim assessments
- End-of-unit or chapter tests
- Term papers
- Projects
- Quarter, trimester or semester exams
- Report cards/grades

*Scoring Guides & Rubrics*  
*Homework*  
*Portfolios*
Intentional planning for Project Based Learning is the first step toward achieving rigorous and relevant learning experiences.

Empower students in this process as much as possible.
3-2-1 Reflection

Take a moment to reflect on Project Based Learning and write down the following:

- **3** things you learned about PBL
- **2** things you need to plan and implement PBL
- **1** concern or question you still have to ponder
References & Recommended Resources


*It’s the T rubric.* (Editable, Original and Spanish Version T rubric Templates). BIE.org. [https://sites.google.com/site/tubric/](https://sites.google.com/site/tubric/)


*(All external websites retrieved and current on May 30, 2014.)*
References & Recommended Resources


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*(All external websites retrieved and current on May 30, 2014.)*
THANK YOU!

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Session Feedback

Your feedback is important to us!

Complete the print version or go to the MSC 2014 app.