Our Quest to Create a Project-Based Learning Cohort: Strategies for Implementation

Lisa Harris
Assistant Superintendent
@HISDLinkedLearn

Felicia Lara
Manager
@HISDLinkedLearn

Edgar Contreras
Assistant Principal
@EdgarAC15
Session Goals

Participants will learn how to...

• Build teachers’ capacity for successful project-based learning implementation.
• Create a framework for project-based learning implementation.
• Acquire resources for implementation and sustainability.
The Global Graduate – Ice Breaker

What should students know and be able to do upon graduation from high school to prepare them for success in college, career, life and tomorrow’s economy?
The Global Graduate

LEADER

RESPONSIBLE DECISION MAKER

ADAPTABLE & PRODUCTIVE

SKILLED COMMUNICATOR

COLLEGE-READY LEARNER

CRITICAL THINKER

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Essential Question

How can instructional leaders utilize available resources to design and implement project-based learning to transform teaching and learning for a traditionally underserved student population?
Hartman Middle School
Mission and Vision

To transform teaching and learning at Hartman Middle School via project-based learning in order to create a learning environment and experiences that instill global graduate skills in our students.
Campus Snapshot

- Hartman Middle School is the largest middle school in the southeast part of the Houston Independent School District.
- It is a comprehensive middle school with over 1300 students.
Disruptive Innovation

• From the onset, we knew there needed to be a change.
• Test scores in the last three years had reached a plateau and were on the decline, literally point by point.
Disruptive Innovation

• Students arrive to class, sitting in rows, waiting for the teacher’s instruction.
• Teacher instruction is direct and step-by-step.
• For new teachers coming into the school, this particular routine was exhausting.
Academic and Career Interests

• Middle school students learn about their interests. A student’s self-evaluation and introspection dictates the path of instruction.

• Highlights:
  – Research into possible pathways and high schools
  – Exploration of personal interests and how they align with potential careers
  – Field trips to colleges/universities
Project-based Learning Cohort Essentials

- Professional development
- Global graduate skills
- Planning template
- Cross-curricular cohort planning
- Chromebook carts
- Technology integration
- School Visits
- Coaching Support
Implementation
## Creating Action Plans

### GOAL: Project Based Learning Training and Implementation

<table>
<thead>
<tr>
<th>Action / Training</th>
<th>When</th>
<th>Who</th>
<th>Purpose</th>
<th>How do we know we have implemented with excellence?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select the highly effective cohort that will attend the training. These teachers are self-motivated and self-motivated.</td>
<td>6/217</td>
<td>Conners, Linkous</td>
<td>Teachers have committed and signed up for PBL training at UT Tyler. We have selected: Lauria, Shuman-Science, Reo, and Sll, Reading-Reading. These teachers are now not attending the training for PBL, but Mrs. Shuman has selected the training and return to attend the training. Then, train teachers who are not able to attend.</td>
<td>Teachers have committed and signed up (if approved) for technology training. Teachers have committed to attend training, plan, practice, and train teachers who are not able to attend.</td>
</tr>
<tr>
<td>Sign up selected teachers for training and registration. UT Tyler.</td>
<td>5/217</td>
<td>Conners, Linkous, Capers</td>
<td>Teachers are registered, informed, and ready to travel and attend the training.</td>
<td>Teachers have committed to attend training, plan, practice, and train teachers who are not able to attend.</td>
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<tr>
<td>Allocate time and funds for teachers to create a portfolio that includes the planning process and plan for PBL.</td>
<td>6/7/17</td>
<td>Conners, Linkous</td>
<td>Teachers are required to create a portfolio for the planning process and plan for PBL. There is a process for project planning and project management.</td>
<td>Teachers have committed to attend training, plan, practice, and train teachers who are not able to attend.</td>
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<td>Confirm Calendar Class for Teachers planning at Harvard Middle School.</td>
<td>6/13/17</td>
<td>Conners</td>
<td>Teachers are required to plan for the planning process and plan for PBL.</td>
<td>Teachers have committed to attend training, plan, practice, and train teachers who are not able to attend.</td>
</tr>
<tr>
<td>Secure Funding for extra duty pay for after school planning.</td>
<td>6/20/17</td>
<td>Conners, Linkous</td>
<td>Teachers are required to plan for the planning process and plan for PBL.</td>
<td>Teachers have committed to attend training, plan, practice, and train teachers who are not able to attend.</td>
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### GOAL: Integrating Technology within Classroom Instruction through professional development and implementation of a technology cohort

<table>
<thead>
<tr>
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<th>Who</th>
<th>Purpose</th>
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</tr>
</thead>
<tbody>
<tr>
<td>- Select highly effective cohort of teachers that will be attending the technology training. These teachers are self-motivated and interested in growing their instructional craft through the use of technology among students and the teachers. This cohort will be called the IT Cohort.</td>
<td>5/217</td>
<td>Conners, Linkous, Capers</td>
<td>Teachers are willing and able to attend training, plan, practice, and train teachers who are not able to attend.</td>
<td>Teachers have committed and signed up (if approved) for technology training.</td>
</tr>
<tr>
<td>Sign teachers up for ISTE</td>
<td>5/17</td>
<td>Mindee</td>
<td>IT Cohort to attend</td>
<td>Receipt of registration.</td>
</tr>
</tbody>
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# Linked Learning

## ACTION PLAN TEMPLATE

**GOAL:**

<table>
<thead>
<tr>
<th>Objectives (What)</th>
<th>Who</th>
<th>When</th>
<th>Where</th>
<th>Campus Resources</th>
<th>District Resources</th>
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Action Plans Continued

• Weekly Planning
  – Planning Template
  – Cross-Curricular
  – Fine Tuning Protocols
  – Admin Support/Facilitation

• Summer Planning
  – 1 week of additional planning
  – Concentration on PBL planning only
Bringing the Vision to Fruition

• **Teacher Selection**
  – Interest Survey
  – Growth Mindset
  – Dedication, Passion, Going the extra mile

• **Master Schedule**
  – Student Scheduling
  – Technology Applications Course
    • Google Apps for Education

• **Technology Integration**
  – Chromebooks
  – Web tools 2.0
Bringing the Vision to Fruition

- Visit PBL Schools
  - The Energy Institute
- PBL Training and Support
  - UT Ingenuity Center
- Magnet Recruiting Events
- PBL Teacher Academy
- Spring Project Showcase

Hartman Middle School
Health Science Pathway

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PBL at Hartman Middle School
Project-Based Learning
Classroom Examples
**Driving Question:** How do chemical engineers identify the elements and compounds found within a toxic spill?

**Summary:** Students were given a “toxic spill” jar and were required to determine the identity of the individual components in their samples. Once this task was complete, the students researched each component to determine if it was an element or a compound. Upon classifying the components by category, a presentation was made to the “EPA” and the “community” to summarize their findings.
Toxic Spill

Receiving and investigating jars

Completing a poster to present to the EPA

Presenting their posters
Driving Question: How can a survivalist engineer build a solar oven to demonstrate conduction, convection, and radiation?

Summary: The challenge was for students to think as engineers and to build a device that would utilize the sun’s energy for people who have found themselves in a survival situation. Students had to build a solar oven with the ability to cook an egg; and share their results with the other survivalist engineers.
Solar Oven

Future engineers, constructing, collaborating, and testing their solar ovens.
Integers Cereal Boxes

**Driving Question:** How do mathematicians create a cereal box that will include integer operations and rules?

**Summary:** Students were presented with a mock letter from Kellogg’s challenging them to create a cereal box incorporating the brand name and integer rule operations into the design.
Integers Cereal Boxes
Driving Question: How do mathematicians and artists create a holiday greeting card for Hallmark that will include a special number and its prime factorization?

Summary: Students were challenged to create a holiday greeting card that would include its special number, prime factorization, and a reasoning for selecting that special number.
Greeting Hartman Magnet Students,

Yes, yet another problem that you must solve. This one will hopefully be a fun one and not as challenging. My name is Joyce Hall, the founder and owner of Hallmark Cards and the Television Channel. I need your help creating a Holiday Greeting Card just in time for Christmas, Kwanza, Hanukkah, etc.

Your mission, you chose a special number to you, and within your greeting card, describe whether it is Prime or Composite, list the factors if it is composite, and then find the Prime Factorization of that number.

You will also describe, write or type why?, the reason you chose that special number. This PBL Project will be due the week before we go on Christmas Break.

Please see attached for an example of what I am looking for this Holiday Greeting Card Contest. The winners will be invited to an Ice Cream Social with Ms. Le.

Sincerely,

Joyce Hall
Professional Development
Teacher Collaboration – Shift in Engagement

then...

now...
Common Features of a Pathway Team

- A pathway teacher team: core and CTE/elective
- Common set of pathway outcomes
- A pathway lead teacher and dedicated administrator
- Common planning time
- Data-driven planning
- Cross-disciplinary projects
Summer PBL Training: University of Texas-Tyler

The Ingenuity Center

- 4-Day training that guided teachers through the process. Teachers completed the training with their very own project.
Fine Tuning Protocols

During planning time, teachers share project ideas and give each other feedback.
PBL Teacher Academy

- Teacher selection pool
- New teacher orientation
- Tools to create your own PBL project
- Planning & Book Study
- Project Development
- Scaffold PBL trainings
- Prepare for the future
PBL Teacher Academy

Our mission is to increase the use of Project Based Learning at Hartman Middle School by building a teacher core with the skills to create, plan, and implement PBL with their students. Project Based Learning at Hartman Middle School will be standards based, infuse 21st Century Skills, and require a presentation to showcase a solution to real world problems.

During our time together, we will be using the book *Setting the Standards for Project Based Learning* along with the PBL Binder to guide along with our readings, meetings, and planning.

- PBL Binder
  - Mission Statement
  - Scope and Sequence
  - Project Overview
  - Real World Problem
  - PBL Plan

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Summer Teacher Externship

The externship is an opportunity for teachers to engage in real-world experiences at a host company in order to develop industry-focused curriculum and connections that provide students with technical exposure and applied learning.
Community of Practice

Pathway teachers, administrators, and counselors meet on a quarterly basis to discuss best practices and engage in discussion related to trends in the workforce.

Best practices

Workforce

Compliance

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Resources

- Project Based Learning Toolkit Series
  - PBL Starter Kit: To-the-Point Advice, Tools and Tips for Your First Project in Middle or High School
  - Setting the Standard for Project Based Learning
    - A Proven Approach to Rigorous Classroom Instruction

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Industry and University Partnerships

Construction and Design - ARUP

Geographic Information Systems – Texas A&M University

Engineering and Health Science – Texas A&M University
Providing Real-world Scenarios/Problems

Culinary Arts – School Garden

Law and Justice – 911 Emergency Call Center

HVAC (Heating, Ventilation, and Air Conditioning)
Evaluation and Next Steps
Planning for 2018-2019 PBL Cohorts

• Teacher Selection for PBL Training (7th & 8th Grade)
• Summer Planning Time
• Master Schedule
  – Cross Curricular & Content Planning Off Periods
  – Student Cohort Scheduling
• Instructional Specialist PBL Support
• Technology Chromebook Carts
• Industry Partnerships (e.g. Petrochemical industry, medical, Green Energy)
Summary
Reflection 3 – 2 – 1

3 words about PBL implementation

2 key ideas about PBL implementation

1 question I still have about PBL implementation
Project Based Learning – Shout Outs!

- Manor New Tech
- PBL 101: Buck Institute Training
- Disruptive Innovation
- Transforming Schools in PBL Book
- Setting the Standard for Project Based Learning
- PBL Starter Kit
- UT Tyler Ingenuity Center
- Energy Institute High School - HISD
Contact Information

Lisa Harris, Assistant Superintendent
LHARRIS4@houstonisd.org

Felicia Lara, Manager
FLARA@houstonisd.org

Edgar Contreras, Assistant Principal
Hartman Middle School
@EdgarAC15 (Twitter)
References


Thank you!

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