Implement for Impact (I4I)

A Toolkit for Professional Learning Practitioners

Developed jointly by the Small School Districts' Association
and the Sacramento County Office of Education

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About Implement for Impact (I4I)

Implement for Impact (I4I) is a series of four workshops that were designed for the CS4NorCal research project, which was funded by the US Department of Education's Education Innovation and Research grant program. The purpose of the project was to research methods to establish CS Pathways in rural communities of Siskiyou, Shasta, Plumas, Lassen, Modoc, and Glenn counties in Northern California. Offered in a secondary teacher's second year of the two-year professional learning cycle, the I4I workshop series served as a means to strengthen a CS pathway using specific pedagogical approaches that also prepare students for college and career.

How to Use This Document:
This toolkit is designed to support professional learning practitioners who are interested in delivering these high-quality workshops to educators. Featuring four adaptable workshops on project-based learning,

agile project management, emerging computer science concepts, and showcasing student work, this toolkit offers ready-made agendas, resources, and research-based strategies. Practitioners are encouraged to copy, modify, and use the materials (with attribution) to meet the needs of the educators they serve, fostering engaging, standards-aligned, and impactful professional learning experiences.

Workshop Series Format:
Professional learning practitioners implementing the I4I workshops could choose between two delivery models: four virtual afternoon sessions of 90 minutes each, conducted after the school day, or a full-day (6-hour) workshop.

Promoting Your Instance of the Workshop Series:
This flyer template that professional learning practitioners can use to promote the Implement for Impact (I4I) workshop series. This flyer can be duplicated as-is or adapted (with attribution) to fit local needs and contexts, making it easy to advertise and recruit participants for the workshop series.

Learn More About the Workshop Series:
Professional learning practitioners are encouraged to deepen their understanding of the Implement for Impact (I4I) workshop series and its role in the CS4NorCal research project by reading the accompanying research article. The article provides valuable insights into how the workshops were designed and implemented to strengthen computer science pathways in rural communities, as well as key findings from the research. Exploring the article can help practitioners see how the I4I approach can inform and enhance their own professional learning efforts.

Workshop 1: Project-Based Learning

Description:
Project-Based Learning (PBL) is an instructional approach that engages students in real-world projects, fostering deep learning and essential skills.

Objectives:
- Learn how to engage students by integrating the real world into your classroom using PBL
- Gain the understanding and tools needed to develop a quality PBL experience for students
- Utilize PBL across disciplines

Supporting Research:
1. "A Study of the Impact of Project-Based Learning on Student Learning Outcomes"
2. "The Key Characteristics of Project-Based Learning: How Teachers Implement Them"
3. "The Effectiveness of the Project-Based Learning (PBL) Approach as an Instructional Strategy"
4. "New Research Makes a Powerful Case for PBL"

Agenda:

Session and Length	Activities	Visual Aids
Session 1 (1.5 hours)	• Welcome and Introductions • Significant Learning • Six As of Powerful Projects • Share out • Next steps	Slides
Session 2 (1.5 hours)	• Welcome and Recap Day 1 • Design Thinking and establishing project ideas • Project Planner Components • Share out • Next Steps	Slides
Session 3 (1.5 hours)	• Welcome and Recap Day 2 • Project Planner Components and Deep Dive • Powerful Projects Foster Significant Learning • Next Steps	Slides
Session 4 (1.5 hours)	• Welcome and Recap Day 3 • Project Planning • Project Tuning Protocols • Final Q & A	Slides

Resources:

- PBL Planning Guide - Six A's of Powerful Projects
- PBL-Driving Question
- Journal
- High Tech High Project Cards
- Modular Project Planner
- Project Tuning Protocol (36-minute Version)
- Project Tuning Protocol 20 minutes
- Backwards Map
- Essential Questions
- Project Slice Guide
- Expeditionary Learning Models of Excellence - Interdisciplinary Projects That Live Beyond The Classroom

- Differentiated Projects and Products in EL Schools

Workshop 2: Agile Project Management

Description:
This workshop teaches secondary educators how to apply Agile project management strategies in their classrooms to develop students' collaboration, adaptability, and problem-solving skills. Through hands-on activities, educators will learn practical techniques to create structured, flexible learning experiences that reflect real-world work environments.

Objectives:
- Engage in an Agile Project Simulation – Participate in a hands-on activity to experience Agile project management from a student's perspective.
- Explore Practical Classroom Applications – Learn how to structure student projects using Agile techniques to improve collaboration and adaptability.
- Deepen Understanding Through Independent Exploration – Spend a dedicated day asynchronously reviewing curated resources on Agile project management and reflecting on how to adapt these strategies to your classroom.
- Plan for Classroom Implementation – Create a strategy to incorporate agile practices into lesson plans, adapting them to different subjects and student needs.

Supporting Research:
1. "Agile and lean concepts for teaching and learning: Bringing methodologies from industry to the classroom"
2. "Agile-based learning: What is it and how can it change education?"
3. "Agile schools: How technology saves education (just not the way we thought it would)"
4. "The agile classroom: Embracing an agile mindset in education"

Agenda:

Session and Length	Activities	Visual Aids
Session 1 (1.5 hours)	• Introductions and Tech Troubleshooting (10 min) • Forming our Team (40 min) • Break (5 min) • Start Learning Sprint Simulation (30 min) • Wrap Up (5 min)	Slides
Session 2 (1.5 hours)	• Learning Sprint Simulation (30 min) • Learning Sprint Reflection (20 min)	Slides

	• Agile: What and Why (10 min) • Planning for Classroom Implementation (20 min) • Introduce Async Work (10 min)	
Session 3 (Asynchronous)	For this asynchronous work session, participants should practice moving through an Agile sprint by utilizing three or more options on the provided project backlog. The provided backlog includes 11 self-guided options for participants to learn more about or dive deeper into Agile classroom resources. Participants will submit their work and a reflection following their asynchronous work time.	Slides
Session 4 (1.5 hours)	• Async Sprint Review (20 minutes) • Async Retrospective (10 minutes) • Assessment & Managing Teams (20 min) • Trello Escape Room (30 min) • Wrap-Up, Commitments, and Next Steps (10 min)	Slides

Resources:

- Group Work Canvases
  - Make a copy for each team prior to workshop 1. For use in Workshops 1 + 2.
- Workshop Guidebook
  - Share with participants in Workshop 1, for use throughout all workshops
- Classroom Implementation Planner
  - Copy into Modular Planner from Workshop #1
  - For use in Workshops 3+4
- PBLWorks Project Planner
- Agile Resources Wakelet
- AP CSP Create PT Kanban Board (2020-2021 Version - not updated for 2024 Revisions)
- Classroom Resource Google Drive

Workshop 3: Emerging Concepts in CS

Description:
Because CS is an emerging and evolving field of study, we will explore standards and concepts, including artificial intelligence and cybersecurity, that can serve as topics for student projects in your CS classroom.

Using a variety of digital tools, students can create authentic projects that create solutions for their communities.

Objectives:

- Experience three standards-aligned lessons that can be replicated with students in grades 6-12 that feature emerging concepts in CS
- Explore resources that can support student projects that engage learners in emerging concepts in CS, including but not limited to artificial intelligence, cybersecurity and digital media
- Experiment with strategies to expand existing CS curriculum with emerging concepts in CS
- Leverage digital media to create a learning journey that can be referenced when showcasing student work in the following sessions.

Supporting Research:

- Big Book of Computing Content
  - "Threshold Concepts"
  - "Artificial Intelligence in Summary"
  - "Safety and Security in Summary"
- "Agile Projects to Foster Cooperative Learning in Heterogeneous Classes"
- Proceedings from CSTA's A Look at The Future of CS Summit

"Beats" of the Daily Workshop:

1. Daily Sprint Standup (Warm Welcome)
2. Emerging Concept Mini-Lesson
3. Mini-Lesson Reflection
4. Emerging Concept Rapid Research
5. Emerging Concept Curriculum and Community Planning
6. Daily Sprint Retrospective (Feedback and Optimistic Closure)

Agenda:

Session and Length	Activities	Visual Aids
Session 1 (1.5 hours)	Exploring a Learning Journey: Digital Tools • Before the workshop, sign up for a Canva account	Slides Learning Journey Template
Session 2 (1.5 hours)	Under the Hood of AI	Slides
Session 3 (1.5 hours)	Cybersecurity and Digital Citizenship	Slides

Session 4 (Asynchronous)	Creating a Learning Journey	Asynchronous Assignment: Expand Your Learning Journey

Resources:

- Learning Journey Template Activities & Directions
- EverydayAI Lessons and Professional Learning Resources
- Stanford AI Lessons

Workshop 4: Showcasing Student Work

Description:
In the final workshop, we consider the importance of showcasing student work in Project-Based Learning. Students may exhibit their work and amass a portfolio that can be useful for future college and career pursuits.

Objectives:

- Review the principles of PBL. Describe how students can share their learning and demonstrate presentations of their learning that have been incorporated into their project.
- Exhibition of Learning: Learn how to design and develop an Exhibition Plan incorporating the 4 Es of Exhibition with a thought partner and how to use the Project Tuning protocol.
- On your own or with your thought partner and using the 4 E's of Exhibition, develop marketing/promotion material or design the display space
- Bring your exhibition to share and develop skills in project curation; reflect on the student exhibition experience.

Supporting Research:

1. A Schoolwide Exhibition Builds Excitement for Project-Based Learning
2. Authentic Assessment: New Ways to Measure Student Performance By Anthony Cody

Agenda:

Session and Length	Activities	Visual Aids
Session 1 (1.5 hours)	Review the principles of PBL. Describe how students can share their learning and demonstrate presentations of learning, incorporating your project.	Slides

Session 2 (1.5 hours)	Exhibition of Learning: Learn how to design and develop an Exhibition Plan incorporating the 4 Es of Exhibition and how to use the Project Tuning protocol.	Slides
Session 3 (Asynchronous)	Utilizing the 4 Es of Exhibition, develop the marketing/promotion material or design the exhibit space	Slides
Session 4 (1.5 hours)	The Exhibition: Showcase your marketing material or exhibition space. Discuss project curation as well as reflect on your learning.	Slides

Resources:

- Project Tuning Protocol (36-minute Version)
- Project Tuning Protocol 20 minutes
- Road Map to an Exhibition
- Preparing Students for an Exhibition
- Steps for Creating a Backwards Map for a Student Exhibition
- PBL Planning Guide - Six A's of Powerful Projects
- Student Support Toolkit
- Exhibition Toolkit

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