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PBL Develops Essential Digital Literacy Skills in the Post-COVID Landscape

The driving question for this brief revolves around a question becoming ever more pertinent in the wake of the COVID-19 pandemic and recent technological developments. What digital literacy skills will students need to thrive in a rapidly evolving, increasingly digital future? How does Gold Standard PBL help students develop these skills?

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Today's students are surrounded by technology and digital media, yet many curricula lack ample digital literacy instruction. Thanks to the rapidly evolving nature of artificial intelligence technologies and the increased spotlight on digital learning during the COVID-19 pandemic, K–12 digital literacy education is now more pressing than ever. Gold Standard Project Based Learning (PBL) is an evidence-based solution that offers the opportunity to integrate digital competencies into daily classroom practices. By intentionally incorporating the Gold Standard Design Elements and Project Based Teaching Practices into their daily instruction, educators can better prepare students for success in a digitally connected society.

The Problem: Outdated Approaches

Our Digital World

Technology is unavoidable in today's society—for adults and children alike. In 2020, a Pew Research report found that 80% of parents with children under the age of 12 allowed them to interact with screens and tablets at home, and over 70% of these same parents reported feelings of concern regarding their child's screen time.[1] Among adolescents, 97% of teens report using the internet daily, with almost half of them using it "almost constantly;" TikTok and YouTube are their most commonly used apps.[2] This high level of internet usage, often combined with little adult supervision or guidance, has raised concerns about its long-term negative psychological and behavioral effects.

Adding to the problem, the technology we use is constantly changing, and innovations are being developed ever more rapidly. The swift spread of artificial intelligence (AI) technology is one recent example of this phenomenon. A December 2023 report showed that half of high school students are already using AI tools such as ChatGPT to help them with their schoolwork, and it was just released in November 2022![3] Because of this, we must teach students not only how to use the technology that currently exists proficiently but also how to think in ways that will help them navigate future, as-yet-unknown digital landscapes. Students need to be able to evaluate digital sources critically, use technology responsibly and ethically, and navigate complicated online worlds with integrity and ease. Collectively, these and other related skills are often referred to as digital literacies.[4]

Digital Equity

Digital literacy is more than simply using a classroom computer or reading an eBook. Here, "digital literacy" involves both students' technical fluency with digital devices as well as their ability to use those technologies to create, achieve, and innovate.[5] This includes skills such as communicating and collaborating online, creating and sharing digital media, and critically evaluating and ethically using technology and digital content. While research shows that technology integration can benefit students,[6] the data reflect stark inequities in students' access to technological devices and digital literacy instruction.

In 2021, the Southern Education Foundation published its report, "Looking Back, Looking Forward: What It Will Take to Permanently Close the K–12 Digital Divide."[7] Researchers found that 15 to 16 million students—almost one-third of the K–12 public school population—across the United States are affected by inequitable access to consistent WiFi, access to devices, and digital literacy instruction both at home and in school. Furthermore, this divide disproportionately affects several student populations, including Black, Latinx, and Native American students and students from lower-income families. It is imperative to take action to combat this growing issue. By infusing excellent digital literacy instruction (and Gold Standard Project Based Learning) into core content areas, educators can build communities of "future-proof " learners in their academic and career endeavors.

Instructional Imperative

Digital literacy instruction is crucial to ensure that students navigate digital environments ethically, safely, and critically. In 2023, the National Academy of Sciences, Engineering, and Medicine published their page report, "Social Media and Adolescent Health."[8] The report found that social media algorithms can lead to increased exposure to misinformation and conspiracy theories, among other harmful content. While we see the impacts of "fake news" and disinformation in our political landscape every day, this sensationalized content is even more damaging to children and adolescents due to the nature of their developing brains. Without appropriate digital literacy instruction, this has the potential to cause sleep disturbances, attention problems, increased distractibility, body image issues stemming from social comparison, increased risk of bullying, and more. To combat this, the report's primary recommendation is to improve national understanding of the urgency of digital media literacy instruction.[9] Educators can mitigate the risks by focusing on digital literacy in the classroom while reaping the benefits of digital media. Studies show that digital literacy instructional programs can improve students' knowledge of trustworthy media and reduce its negative psychological impacts.[10] By equipping students with this knowledge, we not only foster resilience in the face of evolving landscapes, we also empower them to harness the transformative potential of technology safely, critically, and ethically.

Using technology in the classroom can lead to several benefits. A 2022 systematic review of K–12 research published from 2005–2022 found that instructional technology had positive effects on students' achievement and that computer-assisted instruction could enhance learning outcomes.[11] The report also found several documented positive associations between technology integration and students' attitudes toward learning. Effective technology use was shown to benefit students' collaboration and participation skills, positively impacting the inclusion of all students in the classroom. Additionally, the American Academy of Pediatrics noted several benefits in their report, "Children and Adolescents and Digital Media." Students can be exposed to a wider amount of new information, interact with peers in social, supportive ways, and get access to learning supports and digital tools.[12] Despite this, integrated digital literacy instruction is still absent in many schools. For example, just three states require K–12 media literacy instruction,[13] and data indicate that most adults are self-taught when it comes to discerning trustworthy online information. [14] These findings highlight the need for classroom instructional strategies that integrate digital literacy skills.

The Solution: Gold Standard PBL

For students to build the digital literacy skills that will allow them to thrive in a rapidly changing world, they need complex, well-scaffolded opportunities to use these skills authentically. Gold Standard Project Based Learning, with its focus on creation, problem-solving, and real-world application, is a highly effective way to provide these opportunities. And, much like Gold Standard PBL, digital literacy skills are best learned when they are fully integrated into all elements of instruction rather than viewed as an add-on or supplement.

How Gold Standard Design Elements Support Digital Competencies

Gold Standard projects are characterized by seven Essential Project Design Elements, which, when used together, support students' development of critical skills—including digital competencies. Here's how you can maximize the power of the Gold Standard Project Design Elements to cultivate digital literacy skills:

- **Challenging Problem or Question:** When students have a world of information accessible on their cell phones, the purpose of school shifts. Instead of delivering information, schools today must teach students how to engage with complexity, how to use the data at their fingertips to think, evaluate, collaborate, and create.

- (*cont.*)This begins with a driving question that is open-ended and not "Google-able," the kind of question (with no easy answers) that students will need to be prepared to tackle in our increasingly complex world.

- **Sustained Inquiry:** The driving question of a project is a launching point for ongoing inquiry. Students in Gold Standard PBL develop the metacognitive skills of asking and answering questions. In most projects, students leverage technology in various ways—whether conducting online research, crafting effective AI prompts, investigating phenomena through digital simulations, or connecting with experts around the world using virtual tools. Through sustained inquiry, students learn to use digital tools effectively to answer their questions about the world and to inspire further exploration. During this process, teachers can collaborate with experts, such as school librarians and media specialists, to educate students on assessing the trustworthiness of online sources and citing information ethically.

- **Authenticity:** Gold Standard projects reflect the "real world"—students engage with challenges and contexts relevant to their interests and community. In many cases, their work — and the tools they use to do it—mirrors the work of professionals in the discipline under study. As students engage in authentic work, they gain experience utilizing digital tools for collaboration and connection. Whether designing websites, using digital mapping tools, or crunching survey data, students in PBL gain real, contextualized experience using technology for a purpose.

- **Student Voice and Choice:** In Gold Standard PBL, students have opportunities to make choices about their learning and develop the agency and decision-making capabilities necessary to navigate a complex digital landscape. They also engage in work that challenges them to share their voices, perspectives, and identities with others, often in online or digital environments. Experiences with voice and choice in projects help students learn to engage as active creators and participants in digital life rather than passive content consumers.

- **Reflection:** Reflection—on content, process, purpose, and their trajectories as learners—is a critical part of PBL. Students can and should reflect on when, why, and how they use specific technological tools and processes to create, consume, and interact. They can also consider the affordances, challenges, ethical considerations, and innovative possibilities associated with the technologies they use throughout a project. PBL teachers often use digital tools like streaming video, online journals, collaborative sticky note boards, and digital portfolio tools to support student reflection, building students' capacity to interact, think, and express themselves in diverse media and formats.

- **Critique and Revision:** Students in Gold Standard projects engage in regular feedback loops on their work, mirroring the iterative and agile processes used in many professional settings. Students who engage in PBL learn how to leverage technology effectively to seek, give, receive, and use feedback. They collaboratively edit and comment on digital works-in-progress, reach out virtually to experts and community members for input, and use analytics, surveys, and other digital sources of information to learn about and refine their work.

- **Public Product:** In a Gold Standard project, students share their work and learning with an audience beyond the classroom. Just like professionals beyond school, students leverage technology (such as video production platforms, design apps, or podcasting tools) to create polished products that will be relevant, accessible, and engaging for their audience. They also use digital tools to expand the reach of their work: for example, launching social media campaigns, building community resource websites, or publishing ebooks to an online marketplace. This helps empower students to develop agency in digital spaces and build their identities as digital creators.

Digital Competencies in Action: Gold Standard Projects

The PBLWorks Project Library includes a wide range of sample projects that can be adapted for use in the classroom. The following projects show how digital literacies can be taught through Gold Standard PBL:

- FuturEd: AI in Education: In this project, students research the benefits and challenges of using generative artificial intelligence in education and propose policies to the school or district's decision-making body. Throughout the project, students experiment with AI tools and reflect on their experience with these tools.
- There's an App for That: Students leverage design thinking processes to create mobile apps that help address an authentic community challenge. They pitch their designs to an audience of community members who are potential users of their apps.
- Game Time: Students use Scratch to develop and program video games that incorporate geometric concepts of transformations.
- Marking History, Making History: In this project, students investigate primary sources about the history of their local community. They develop an interactive digital tour of the community, posting QR codes that lead to digital artifacts that tell the story of the community from diverse perspectives.
- The Storytime Channel: This project for emerging readers develops students' reading fluency and comprehension as they plan, storyboard, rehearse, and record engaging video productions of fables and folktales from diverse cultures.

Next Steps for Your PBL Journey

The research is clear: the time for digital literacy is now. Without intentional digital literacy instruction in the classroom, students are left to fend for themselves in the uncharted territories of social media, artificial intelligence, and more. However, leveraging technology and digital competencies in the classroom can lead to learning benefits; students grow confident in using their voices on collaborative online platforms in an ethical, safe, and informed manner. Embracing Gold Standard Project Based Learning (PBL) helps to integrate these competencies into daily classroom practices seamlessly. By leveraging PBL's key elements, such as posing challenging questions, sustaining inquiry, ensuring authenticity, providing student voice and choice, and promoting reflection, schools can effectively empower students to succeed in an increasingly digital future.

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