Defined

EBOOK

How PBL Builds Portrait of a Graduate Competencies

By John Larmer

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CHAPTER 1

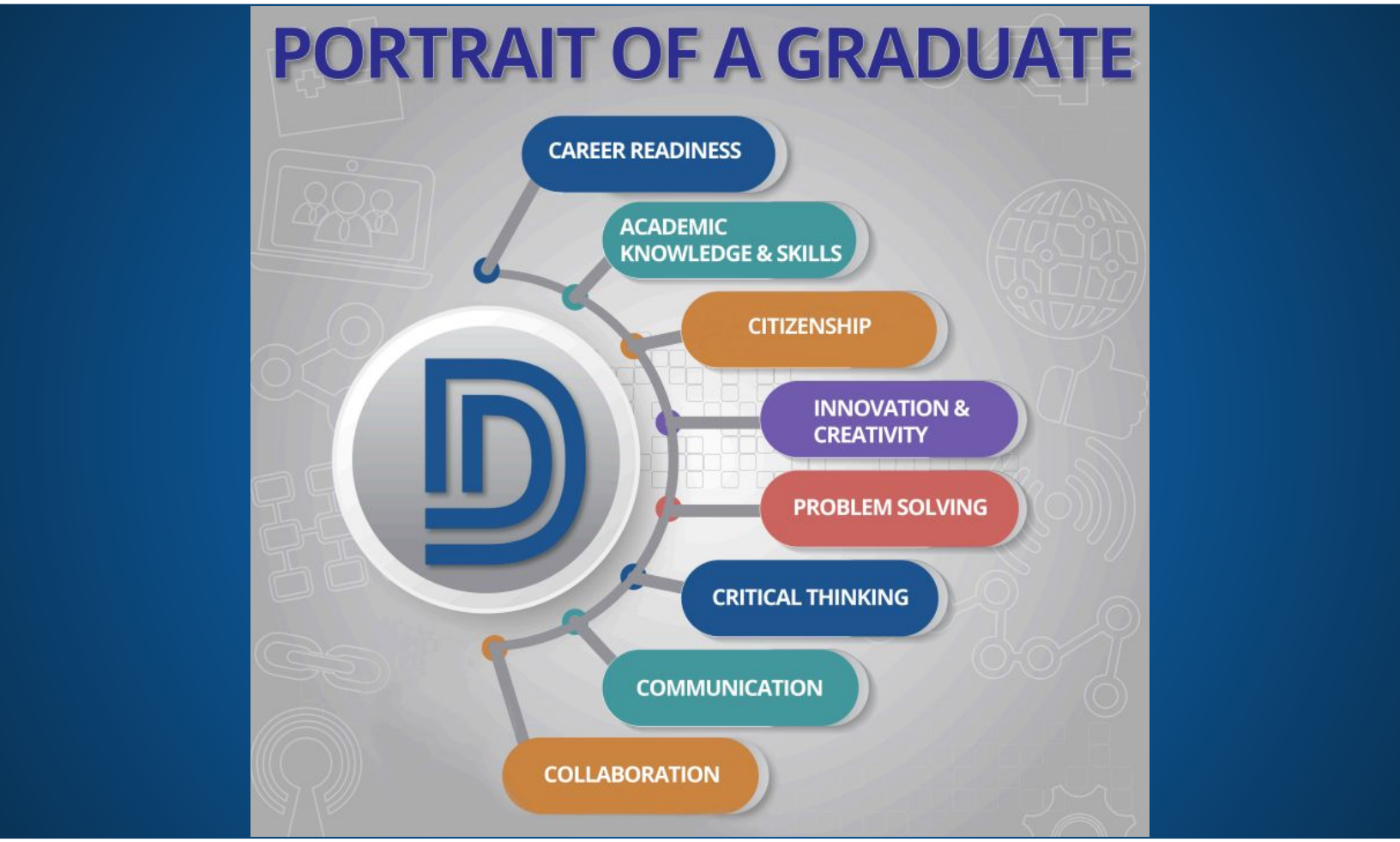
What is a Portrait of a Graduate?

A **Portrait of a Graduate (POG)** is a vision statement that schools and districts create, with input from students, educators, parents, and community members. It describes the desired outcomes of the K-12 system: the competencies and personal qualities students should possess when they graduate in order to be successful in the world beyond school.

Sometimes also known as a "graduate profile" or "school-wide outcomes," a POG is a broader set of goals than those found in traditional academic subject areas. When a school or district adopts a POG, it has significant implications for curriculum, instruction, and assessment. I'll say more about this below, but first, let's look at an example.

Defined has created its own POG, which has eight components that are similar to what's commonly found in school or district POGs. We use it to show educators how well our performance tasks/projects are aligned with these kinds of goals and can be used to teach and assess them.

Defined's Portrait of a Graduate



1. **Career Readiness**
    - Connects academic knowledge and skills to careers
    - Shows awareness of opportunities and needs
    - Uses project management processes
    - Understands their own values, dreams, strengths, and goals
2. **Academic Knowledge & Skills**
    - Demonstrates disciplinary understanding and use of competencies, practices, and processes
    - Applies learning to new and unfamiliar contexts
    - Able to do research and engage in inquiry
    - Pursues knowledge; eager to continue to learn

3. **Innovation & Creativity**
    - Thinks unconventionally; comes up with new ideas
    - Willing to be flexible and try different ideas or approaches when one does not work
    - Is entrepreneurial; willing to ideate, create, and take risks
    - Is inspired; motivated to use creativity and innovate
4. **Problem Solving**
    - Finds or identifies problems and thinks critically to analyze them
    - Persists in seeking solutions
    - Seeks and finds resources
    - Tests, evaluates, and reflects on procedures and solutions
5. **Critical Thinking**
    - Recognizes bias and varying perspectives
    - Evaluates relevance of information
    - Justifies conclusions with evidence or logic
    - Uses systems thinking to make connections between ideas and see the big picture
6. **Communication**
    - Accurately conveys and receives information to/from others
    - Demonstrates cultural competence
    - Understands the audience and communicates appropriately
    - Uses various modes of communication in order to make thinking visible
7. **Collaboration**
    - Contributes actively to shared goals, responsibilities, and decision-making
    - Builds on others' ideas; honors differences
    - Willing to compromise; can use conflict resolution skills
    - Able to provide and receive feedback
8. **Citizenship**
    - Open to learning about diverse cultures and traditions
    - Aware of and acts on local, national and global issues
    - Engages in and welcomes civil dialogue as an opportunity to understand perspectives
    - Understands how their actions connect to the wider world and takes responsibility for them

How Districts Are Helping Students Meet POG Goals

Schools and districts that want to make their Portrait of Graduate a reality, not just a poster on the wall, are trying various approaches. The key is to embed POG goals deeply into the regular curriculum and instruction provided to all students. To accomplish this, districts are:

- Providing professional development for teachers on how to include POG goals into their teaching practice. For example, they may learn how to include more opportunities for students to engage in critical thinking and problem-solving, as opposed to memorization of facts.
- Writing rubrics for each POG competency, which are used by teachers to plan instruction and give feedback to students. Students may use the rubrics to self-assess their progress.
- Creating new programs like maker spaces and "genius hours" where students can exercise creativity and gain problem-solving skills. Programs that encourage local, national, and global citizenship are also being offered to students.
- Connecting students with their community through internships, mentorships, and partnerships with local businesses and organizations.
- Developing assessment systems that include POG competencies, since traditional metrics like test scores and grades cannot fully capture the competencies. For example, students may collect evidence of their use of the competencies in a portfolio, which they use in a "capstone" presentation in their senior year. Some schools ask teachers to make a holistic assessment of how well students are meeting specific POG goals and report this on a scale of growth.

One of the most effective ways schools and districts are embedding POG goals into curriculum and instruction is the use of project-based learning (PBL). Projects can be explicitly designed to build and assess any of the POG competencies or a combination of them. PBL also is a great way to involve the community, enabling students to interact with professionals and experts and see how POG competencies are used in the world outside school.

Challenges in Implementing a POG

Making the Portrait of a Graduate a reality is not a simple task. Roadblocks may include resistance to change. Teachers may have

been focused on narrower, subject-area goals their entire career and don't see how they can add POG goals to their already crowded plates. Students are used to learning traditional content and skills and POG goals may sound vague or abstract. Parents may feel the same. Schools and districts need to spend considerable time on the "why?" of change. Involving local businesses in the process of building support for a POG is a wise move, as they can point out the need for POG skills in the workplace.

Another roadblock is standardized testing and other traditional assessment methods. Most tests emphasize subject-area knowledge, not the kinds of skills and capacities that appear on a POG–nor do traditional grading systems. Schools and districts have not typically collected and reported data on POG competencies. (Defined is now developing customizable features in its platform that will help do this; schools and districts will be able to add POG competencies to its performance task product rubrics and collect achievement data over time for each student.)

All of this takes time, effective change management practices, perhaps extra funding and resources–and leadership. But schools and districts that make the effort–and sustain it over time–will find it to be worthwhile. In an era defined by rapid change and increasing complexity, a Portrait of a Graduate offers a roadmap for schools, districts, and states to prepare students effectively for the challenges and opportunities they will encounter after graduation.

CHAPTER 2

Why PBL is Key to Meeting Portrait of a Graduate Goals

Does your school or district have a "portrait of a graduate"? They're also called "ideal graduate" descriptions, and you might have heard of a "learner profile" and the older term "school-wide outcomes." It's a vision of what a school or district wants for all its students when they graduate high school. The portrait typically includes things like critical thinking, problem-solving, creativity and innovation, metacognition, cross-cultural skills… you've seen the lists.

Was your portrait of a graduate created through an inclusive process that involved many diverse stakeholders, including teachers, administrators, other staff, parents, community members, local businesses, and (I hope) students? If so, great! That's step one.

Have you decided on the success metrics–what data do you gather from an assessment system to determine whether students have met the outcomes in your portrait of a graduate? If so, that's step two for many schools and districts–and it's a big step, which includes writing rubrics, collecting data from teachers, and perhaps even creating a student portfolio system (I'll say more about assessment in a future chapter). Unfortunately, that's often the last step they take.

The bigger question is: How will students actually achieve the goals you've so carefully described? Does your portrait of a graduate live in the daily teaching and learning at your school? Or is it only a poster on the wall, or a document gathering dust somewhere, buried alongside mission statements and other grand visions? Making it part of what happens in every classroom is step three, and it's the most important.

As Justin Wells of Envision Learning Partners puts in From Poster to Practice, "If we don't see graduate portraits made visible in actual student work and student voice…then we're destined to look back on grad portraits as another edu-trend that came to nothing. In my estimation, every grad portrait is promising, but it remains a promise unfulfilled."

A Vital Role for Project-Based Learning

To answer the "how will students achieve it?" question, some schools and districts

have tried to:

- Encourage (or require, in some way) teachers to include the graduate portrait competencies in their lessons, or document how they already do.
- Provide professional development workshops (we know how effective those usually are) on "infusing creativity into your lessons" or using collaborative learning strategies.
- Buy some curricular add-on from a vendor that promises to "boost critical thinking skills".
- Create new programs like maker spaces and "genius hours" where students can exercise their creativity and problem-solving skills.

I'd argue that the above strategies are only marginally effective unless teachers make a concerted, sustained effort to infuse graduate portrait goals explicitly into their classroom instruction, which is hard to do and rarely seen. And the above strategies might not reach all students–only those who get certain teachers or have access to special programs.

The overarching problem is that traditional teaching methods don't typically build graduate portrait competencies consistently. The focus of the system (including high-stakes assessments) is on "covering" standards, and on moving through a curriculum that emphasizes memorizing information. Some teachers may ask students to think critically, but they might be few and far between. Some teachers, or whole subject areas, may involve student collaboration or innovation more than others. Definitions of the competencies may be narrowly discipline-based; art teachers have their view of creativity (abstract painting or sculpture), or English teachers of communication (writing essays). And so it goes, on down the list of competencies; the bottom line is, they often fall between the cracks of a traditional program.

What teaching method does explicitly and effectively build graduate portrait competencies, and can do so across a whole school or district? Project-based learning.

In the next three chapters, I'll explain how, specifically, PBL does this and in the final chapter, I'll discuss the role of PBL in a Portrait of Graduate assessment system. As a framework, I'll be using a Portrait of a Graduate created by Defined Learning. This is not meant to be adopted by schools and districts, btw. It's meant to show that Defined's performance tasks/projects can support a wide range of commonly seen competencies, whatever your particular school or district has. I'll explain what each competency includes, with specific indicators, and how they "come alive" in project-based learning.

CHAPTER 3

Academic Knowledge & Skills and Career Readiness

In the last chapter, I made the case for using project-based learning to build the student competencies commonly listed on graduate portraits created by schools and districts. In this chapter and the next two chapters, I'll explain how PBL builds nine specific competencies. I'll be using the indicators in Defined Learning's Portrait of a Graduate as a framework.

We'll start with two Portrait of a Graduate —what students learn in terms of Academic Knowledge and Skills and Career Readiness. You might think of these as among the more traditional goals typically held for high school graduates.

Academic Knowledge and Skills

Sometimes when schools and districts are in the process of generating ideas for their Portrait of a Graduate, gathering input from teachers, parents, community members, students, and other stakeholders, they forget about traditional academic goals. They get caught up in the excitement of talking about "21st century skills" or multicultural awareness, innovation, and technology. But then someone might say, "don't we still want graduates to know how to read, write, use math, and know some science, history, and the arts?" Then everyone nods their head and says "of course!" So that's why it's the first on the list here.

Indicators of Academic Knowledge and Skills in Defined Learning's Portrait of a Graduate are:

Demonstrates disciplinary understanding and use of competencies, practices, and processes.

Every good project has academic knowledge and skills at its heart–despite an old stereotype that PBL is not appropriate for teaching this (which the research debunks). When teachers select or design projects, they align it to content standards and skills that are important to the discipline they teach. Students learn and employ the disciplinary practices and processes used by people in the adult world when addressing issues and solving problems.

Applies learning to new and unfamiliar contexts

Every project is different and places students in a new situation that presents new problems to solve, topics to explore, and products to create. PBL is the opposite of "rote" learning which puts the emphasis on familiar problems or academic tasks.

Able to do research and engage in inquiry.

PBL has always been regarded as a type of inquiry-based learning. Student-generated questions (aka "need to know") guide much of the work students do in a project. They conduct various forms of inquiry to find answers to their questions–from traditional research to interviews with experts or other people, surveys, experiments, text-based discussions, and finding out what end-users of a product want and need.

Pursues knowledge; eager to continue to learn.

Experienced PBL teachers see this all the time; students get engaged by a topic, issue, or problem, and want to know more about it. They might even take a project in a new direction or go off on a tangent that interests them. In PBL, they come to realize that learning has an authentic purpose–the point is not merely to get a good grade or do well on a test.

Career Readiness

Like Academic Knowledge and Skills, being prepared for entering the workforce has always been seen as an important goal for high school graduation. Some students might decide to get a job right away, and others go to college or get technical training. Either way, it helps to know about what the possibilities are out there in the modern economy and to have some of the skills and self-knowledge that will lead to satisfying employment.

Indicators of Career Readiness in Defined Learning's Portrait of a Graduate are:

Connects academic knowledge and skills to careers.

In PBL, students learn content and skills in order to apply them to a real-world situation or problem. Students might be asked to complete the kind of task people do in the world beyond school–design a playground, create a business plan, or propose solutions to traffic problems. In some projects, students might even work with adult professionals or people in their community who perform certain jobs–for example, they might work with school cafeteria staff to plan healthy and appealing menus. In some projects, students actually take on a career role, as they do in Defined Learning's performance tasks.

Shows awareness of opportunities and needs.

When students engage in the kinds of projects described above, they're not only learning content and skills; they're learning how to identify problems and figure out the best ways to address needs. By being exposed to real-world situations and working in a professional capacity, students are increasing their awareness of what's possible for them out there in the community or wider world–and what they need to do to be prepared for life after school.

Uses project management processes.

One of the most valuable on-the-job skills is the ability to manage a project. Many jobs are basically a series of projects, and employers want people who can determine needs and parameters, set benchmarks, monitor progress, and make a plan for reaching goals. In a well-managed project, the teacher teaches these skills and facilitates students' use of project management tools (e.g., Trello, Asana, Monday.com, etc.).

Understands their own values, dreams, strengths, and goals.

Students are also learning a lot about themselves in PBL. "Reflection" is one of the six criteria for a good project in the Framework for High-Quality PBL, and effective teachers build opportunities for students to reflect on every project. Students should reflect on the content they're learning, the skills they're building, and how the project is going–and also on themselves. What am I good at, and where do I need to grow? What issues do I care about and what kinds of problems do I like to solve? Where can I see myself in my future?

In my next chapter, we'll look at the Portrait of a Graduate competencies that have to do with using one's mind well: Problem-Solving, Critical Thinking, and Innovation and Creativity.

CHAPTER 4

Problem Solving, Critical Thinking, Innovation & Creativity

In this chapter, we'll look at three commonly-seen Portrait of a Graduate (POG) goals that have to do with using one's mind well: Problem Solving, Critical Thinking, Innovation & Creativity. These kinds of goals are not about learning content but how students *use* Academic Knowledge and Skills or technical expertise. In all the chapter in this ebook, I'm using the indicators in Defined Learning's Portrait of a Graduate as a framework.

Problem-Solving

Finds or identifies problems and thinks critically to analyze them

In some projects, students are presented with a problem designed by the teacher. In other projects (typically with students who are more experienced in PBL) students find and identify problems they want to solve, whether it's a community concern, a personally relevant issue, or a national or global problem. In either case, students engage in a problem-solving process that starts with analyzing the problem, identifying what they know and need to know to solve it, and deciding what their next steps will be.

Persists in seeking solutions

A good project is focused on an "open-ended" problem, challenge, or question–it has no simple solution or single "right answer." The teacher does not direct students in a predetermined process–they need to be flexible and find new pathways when necessary. It's not always easy, but students find persistence leads to higher quality work–a good lesson for life!

Seeks and finds resources

In PBL, students are not "spoon-fed" by their teacher; they have to work independently to the extent possible. Identifying resources to help answer their "need to know" questions is part of the inquiry process.

Tests, evaluates, and reflects on procedures and solutions

Students often find themselves having to reevaluate their thinking during a project, testing and evaluating various solutions based on feedback in an iterative process. They might find they need to take a new approach or reflect on how they need to grow and gain more knowledge and skills.

Critical Thinking

Recognizes bias and varying perspectives

Many projects require students to conduct research as part of the inquiry process, where they need to evaluate the quality of their sources of information, including possible biases. In some projects, students may need to consider the perspectives of various stakeholders in an issue or who are affected by a problem.

Evaluates relevance of information

When engaged in inquiry during a project, students may find too many sources of information or go down online "rabbit holes"-- so sorting out which are most relevant is key to efficient work.

Justifies conclusions with evidence or logic

When students present their answer to a project's driving question, a solution to a problem, or share their products with a public audience, they need to defend it. They should be asked to explain why they did what they did, demonstrating their reasoning skills.

Uses systems thinking to make connections between ideas and see the big picture

Many projects ask students to connect their work to a "big idea," see how various disciplines might approach a problem, and understand how a specific project is part of a larger topic or issue.

Innovation & Creativity

Thinks unconventionally; comes up with new ideas

When creating products or deciding on their approach to a problem, students in PBL have opportunities to exercise their creativity. They learn that the process of innovation involves proposing and testing many ideas, some of which may be "out of the box" but wind up being valuable.

Willing to be flexible and try different ideas or approaches when one does not work

Like being persistent in solving a problem, students engaged in a creative process during a project find they need to be willing to discard old ideas and propose new ones. They see how the give-and-take among a team often leads to finding new and better

approaches.

Is entrepreneurial; willing to ideate, create, and take risks

PBL often involves risk-taking. There's intellectual risk-taking when there's no clear-cut answer to a driving question, no obvious solution to a problem, and no recipe for creating a high-quality product. There's risk involved in working with others, and in presenting your work to a public audience.

Is inspired; motivated to use creativity and innovate

One of the most fundamental features of PBL is that it motivates students with an authentic, meaningful challenge. They're not just completing an assignment for the teacher, or for a grade–they care about doing good work and appreciate the opportunity to use their creativity to meet project goals. Some projects may even be inspiring when they involve students in improving their community, helping their peers, or contributing to an important real-world issue.

In the next chapter, we'll be discussing the three Portrait of a Graduate goals that have to do with working with or interacting with other people: Communication, Collaboration, and Citizenship.

CHAPTER 5

Communication, Collaboration, Citizenship

Let's look at the indicators for the remaining three Portrait of a Graduate goals in Defined Learning's Portrait of a Graduate (see pgs. 4-5), which are similar to those found in schools and districts. All three of these goals are about being or working with other people: Communication, Collaboration, and Citizenship.

Communication

Accurately conveys and receives information to/from others

This is a fundamental communication skill that is important in traditional teaching and in project-based learning. During a project, students gather information from traditional sources like the teacher, textbooks, and reference books, but also from online resources and adult experts, stakeholders in an issue or problem, community members, or organizations beyond the classroom–which requires extra attention to receiving it accurately. Same goes for conveying information; for students to create and share a public product that meets expectations for quality or successfully meet a real-world need in a in a project, the need for accuracy is vital.

Demonstrates cultural competence

Many projects ask students to communicate with people beyond those in their familiar school and community. They may need to talk with or share their work with diverse groups in their community and the wider world. When students work in teams on a project, if some members come from diverse backgrounds, they learn how to negotiate cultural differences.

Understands the audience and communicates appropriately

One of the hallmarks of high-quality PBL is that students share their work publicly. They may make a presentation to an in-person or online audience, or display their work in a public place and explain it. When doing this, students pay particular attention to who their audience is, and tailor their presentation accordingly.

Uses various modes of communication in order to make thinking visible

In some projects, students may share their work in an oral presentation and explain their thinking. In other projects, they may create a product such as a video, piece of writing, or a digital or physical artifact, which may communicate students' thinking explicitly or be expressed in some additional explanation.

Collaboration

Contributes actively to shared goals, responsibilities, and decision-making

PBL can work for students working individually, but it is highly effective and appropriate for students to work in teams in projects, as they often will in future jobs–so learning how to collaborate is a vital skill. That means actively participating in setting team goals, meeting their responsibilities, and making shared decisions.

Builds on others' ideas; honors differences

When students interact with teammates, they produce better ideas when they build on each others'. It may not be a natural skill for all students, so teachers can provide modeling, scaffolding, and opportunities to practice. Students will also find that agreeing too quickly on ideas proposed by the most assertive members may not yield the best results. Divergent thinking often produces better ideas, and experienced PBL students learn this.

Willing to compromise; can use conflict resolution skills

Almost every project team runs into disagreements, or even conflicts (like those in adult workplaces). Learning how to negotiate these situations is a skill that serves students well in the future.

Able to provide and receive feedback

The ability and willingness to improve the quality of one's work by asking for and using feedback from others is another key on-the-job skill. Teachers in PBL classrooms build a culture where students welcome and are skilled at constructively critiquing each other's work-in-progress.

Citizenship

Open to learning about diverse cultures and traditions

In an increasingly diverse, multicultural democratic republic like the United States, being open to (at least) learning about people from different backgrounds than your own is hugely important. Many projects focus on addressing the needs of

others, so learning about them is key to student success.

Aware of and acts on local, national and global issues

Many projects focus on real-world issues and problems, asking students to take a stand and take action as citizens. PBL, after all, is about learning by doing–not just by absorbing information.

Engages in and welcomes civil dialogue as an opportunity to understand perspectives

In a healthy democracy, citizens engage in civil dialogue–the respectful, honest exchange of ideas and opinions. Given how complex and challenging today's problems are, understanding different perspectives is essential to solving them. Students learn and practice these skills and habits in almost every project, when they work in teams or with people beyond the classroom.

Understands how their actions connect to the wider world and takes responsibility for them

In many projects, students are called upon to "think globally and act locally" by seeing how their work contributes to improving our society and the world. They're not just learning about issues and problems–they're learning how they can take responsibility for actively addressing them.

In Conclusion

Project-based learning can help students gain other, additional competencies schools and districts might have on their Portraits of a Graduate: from "global awareness" to "cross-cultural skills" to social-emotional learning, personal responsibility, and lifelong learning. So how can you NOT use PBL as a key strategy in moving from poster to practice?

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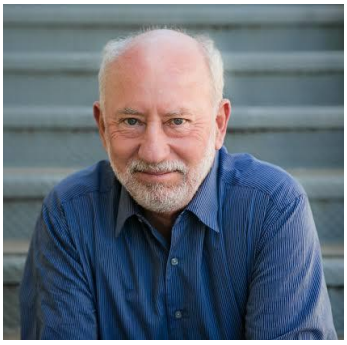
About the Author



John Larmer is a project-based learning expert. In his 20 years at the Buck Institute for Education/PBLWorks, he co-developed the model for Gold Standard PBL, authored several books and many blog posts, and contributed to curriculum and professional development. John is now the Senior PBL Advisor at Defined Learning.

About Defined

Defined empowers educators to engage K-12 students in deeper learning opportunities that build future-ready skills. Through our Defined Learning and Defined Careers programs, we provide teachers with the online tools they need to engage students in hands-on career-connected learning opportunities. Our Defined Academy program provides customizable synchronous and asynchronous opportunities for educators to engage in personalized professional learning. Defined helps teachers bring the real world to the classroom and empowers students to build critical future-ready skills.

To learn more, visit www.definedlearning.com.