battelle for kids

imagine learning

Portrait of a Graduate, Deeper Learning, and High-Quality Instructional Materials:
Bridging Vision and Practice

Introduction: The Evolving Workforce Landscape

As artificial intelligence (AI) and automation rapidly transform industries, today's students will enter a workforce like none before. In 2017, Microsoft and McKinsey & Company estimated that technological advances could cause significant disruptions in the workforce, with automation possibly replacing up to 50% of existing jobs in the U.S. by 2030. Additionally, researchers predict that the integration of generative AI could automate up to 30% of tasks associated with current work approaches (Dondi et al., 2021).

Although some projections indicate that the impact of most technologies on jobs is expected to be a net positive over the next 5 years, skills needed for future jobs are being redefined (World Economic Forum, 2023). Specifically, companies consider analytical and creative thinking top skills, as are self-efficacy (i.e., resilience, flexibility, and agility), curiosity, and lifelong learning (McLean & Company, 2024; World Economic Forum, 2023). Additionally, McKinsey & Company documented that foundational skills needed to help citizens thrive in the future of work include interpersonal skills, self-leadership, and digital literacy (Dondi et al., 2021).
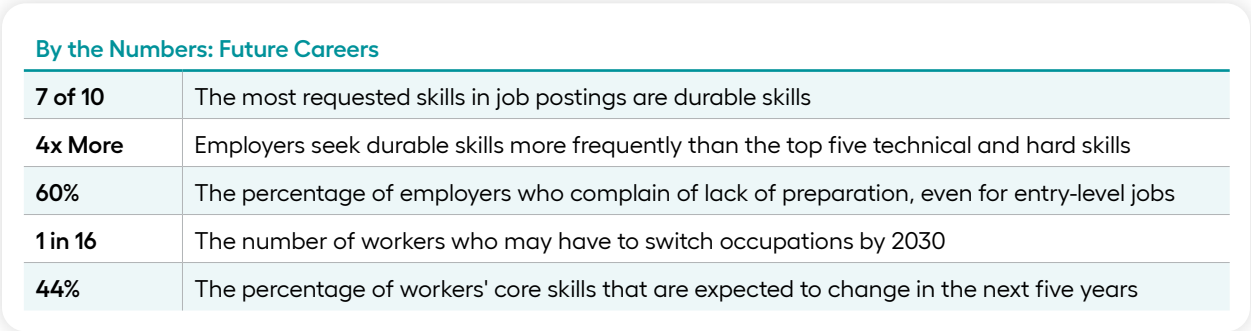
By the Numbers: Future Careers

7 of 10	The most requested skills in job postings are durable skills
4x More	Employers seek durable skills more frequently than the top five technical and hard skills
60%	The percentage of employers who complain of lack of preparation, even for entry-level jobs
1 in 16	The number of workers who may have to switch occupations by 2030
44%	The percentage of workers' core skills that are expected to change in the next five years

Figure 1. *Battelle for Kids 2024*

The Portrait of a Graduate: A Vision for Future-Ready Students

In response to these evolving demands, states and school districts across the U.S. have embraced the *Portrait of a Graduate* framework to redefine student success. A well-developed *Portrait of a Graduate*, often developed with community input, articulates the competencies — such as collaboration, critical thinking, and adaptability — that prepare students for life beyond high school (Medina & Alderman, 2023). These frameworks position students as active agents in their learning journey, emphasizing skills beyond traditional academic measures like GPA and standardized test scores (Battelle for Kids, 2024), thereby making the community an integral part of the educational process.

Integral to the development of *Portrait of Graduate* frameworks is the identification of durable skills. According to America Succeeds, durable skills "are skills we use to share what we know, like critical thinking, collaboration, or communication, as well as character skills like fortitude and leadership."

In 2022, the North Carolina Department of Public Instruction released its *Portrait of a Graduate*. The *Portrait* was developed collaboratively by 1,200 individuals across the state. The seven competencies included in the *Portrait* were selected from 50 competencies identified for consideration. In selecting the competencies for its *Portrait of a Graduate*, Catherine Truitt, North Carolina Superintendent of Public Instruction, stated, "We really set about to frame a collective reflection of what skills a student needs to have, no matter what they're going to do when they graduate from high school." In using the *Portrait*, the North Carolina Department of Public Instruction indicated that "school districts can use the *Portrait* to enhance classroom learning, as it pairs academic rigor with the skills and mindsets that will help prepare North Carolina students for an ever-changing world. It gives school leaders and teachers the framework to design instruction that promotes real-world competencies and job readiness" (Granados, 2022).
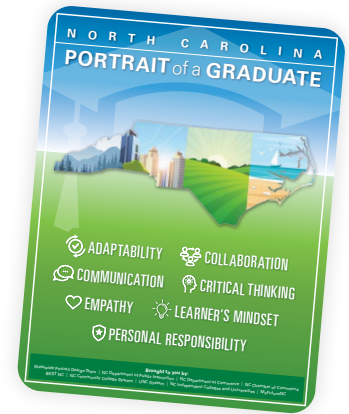
Moreover, the *Portrait of a Graduate* has transformed learning for students like Alex, a high school senior in North Carolina who said, "Now, I feel like school is preparing me for the real world, not just for tests." Stories like Alex's illustrate the profound impact of shifting from content-driven instruction to skill-centered learning.

> ## "We really set about to frame a collective reflection of what skills a student needs to have, no matter what they're going to do when they graduate from high school"
>
> • • •
>
> **Catherine Truitt**
> **Superintendent of Public Instruction, North Carolina**

Conceptually, *Portrait of a Graduate* frameworks represent shifts in educational practices, moving beyond traditional conceptions of what it means to be a successful K–12 graduate in terms of courses completed, GPAs, and standardized test scores to a focus on instructional approaches that equip students with skills needed to prepare them for college, career, and civic engagement. The North Carolina Department of Public Instruction indicates that educators can use its *Portrait* as a framework for creating learning environments that enhance classroom learning and promote real-world competencies.

Deeper Learning: The Bridge Between Vision and Implementation

Portrait frameworks specify targeted durable skills — the "what" or competencies that need to be nurtured and developed. Determining "how" to support the acquisition of durable skills requires districts to examine practices and identify mechanisms for supporting change. "The *Portrait of a Graduate* isn't transformation, it is the catalyst to spark transformation. . . [It] is just the beginning, and it requires hard work and the commitment of all stakeholders to engage in the work" (Battelle for Kids, 2024, p. 11).

Changing Environments (Why) → Portrait of a Graduate/Learner (What) → Durable Skills (What) → Deeper Learning (How) → HQIM (How)
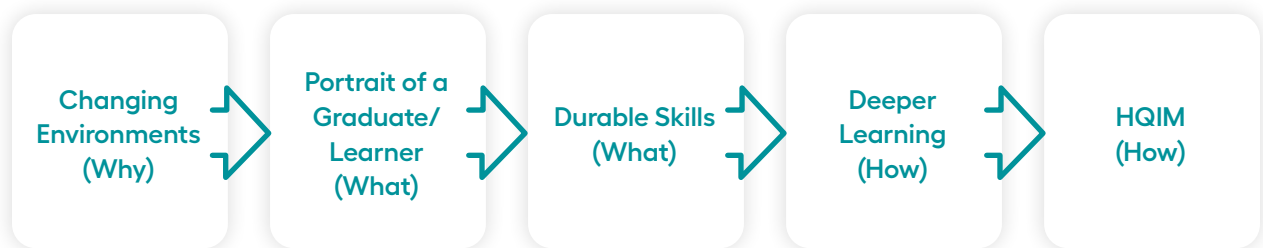
Figure 2. While the Portrait of a Graduate provides a vision for success, deeper learning ensures that students engage in meaningful, skills-based learning. High-quality instructional materials bring that vision to life by equipping educators with the tools needed to foster deeper learning experiences.

"You can't have the how [realizing the vision of a *Portrait*] without high-quality instructional materials. It's about creating environments and processes that engage students in deeper learning every day."

. . .

Mike Duncan
President & CEO of Battelle for Kids

The work associated with achieving *Portrait of a Graduate* outcomes involves examining systems and practices to identify shifts necessary for creating deep learning environments that address skills students will need for their futures. "At a time when society is becoming increasingly global and complex, and technology and the Internet increasingly power learning, the need to engage students in deeper learning experiences has never been greater" (Cator, et. al., 2015). Teachers' ability to orchestrate deeper learning opportunities corresponds with school and district leaders' capacities to grasp the importance of deeper learning and support cultures of inquiry, critical thinking, collaboration, and creativity (Cator, et. al., 2015). In a 2024 survey of district leaders, 28% of administrators indicated that priorities for supporting *Portrait* initiatives in the future included focusing on deeper learning frameworks (Battelle for Kids, 2024). Such frameworks can guide instructional practices and represent one approach or lever for effecting change and accomplishing the goals of the *Portrait of a Graduate* initiatives.

> ## "At a time when society is becoming increasingly global and complex, and technology and the Internet increasingly power learning, the need to engage students in deeper learning experiences has never been greater"
> ...
> **Cator, et. al., 2015**

Schools and districts committed to deeper learning create environments where students engage in inquiry-based learning, develop communication skills, and collaborate on real-world problems (Learning Policy Institute, n.d.). Research by Zeister et al. demonstrated that students who experience deeper learning environments are more likely to graduate and enroll in college and develop a strong sense of self-efficacy and academic engagement, fostering a positive outlook for the future (2014).

One example of this in practice is the San Ramon Valley Unified School District, which integrates deeper learning into its *Portrait of a Graduate* initiative. According to a district administrator, "We want our students to see learning as an active process, where they engage in real-world problem-solving and find personal meaning in their education." A high school student shared, "I feel more prepared for the future because I'm not just memorizing facts — I'm learning how to think and adapt." The district's strategic direction prioritizes deep learning, innovation, and academic excellence, ensuring that students take ownership of their learning and find purpose and joy in their education.

High-Quality Instructional Materials: A Practical Lever for Change

Supporting mastery of core academic content is fundamental to deeper learning. Students need foundational skills and access to grade-level content to engage in deeper learning processes. Adopting high-quality instructional materials (HQIM) provides scalable solutions for districts to create deeper learning environments for all students. HQIM share key characteristics: standards alignment, evidence-based pedagogical approaches, commitment to equity and inclusion, and comprehensive teacher support.

Mike Duncan, President & CEO of Battelle for Kids, highlighted the critical connection between *Portrait of a Graduate* initiatives and adopting high-quality instructional materials, **"You can't have the how [realizing the vision of a *Portrait*] without high-quality instructional materials. It's about creating environments and processes that engage students in deeper learning every day."**

High-quality instructional materials matter. According to Steiner (2017), curriculum is a critical factor in students' academic success. The cumulative impact of using high-quality curricula can be significant, particularly for students in upper grades whose learning gains tend to be lower than in previous grades (Steiner, 2017). Additionally, using high-quality instructional materials can help schools ensure that their students have access to grade-level content. The choice of ELA, math, and science programs has marked effects on assessment scores (Council of Chief State School Officers, 2021), with other studies suggesting that the most dramatic impact of HQIM occurs when they are placed in the hands of less experienced teachers (Berlin & Zhou, 2022).

Many U.S. districts have implemented HQIM successfully, reporting improvements in student performance; Louisiana and Tennessee have made significant strides in HQIM adoption, achieving near-universal access to high-quality curricula in math and ELA. In Tennessee, "Our teachers say that having a strong curriculum has increased their confidence in their teaching abilities. It's taken away the uncertainty. Teachers also report that they can see and understand 'the why.' One teacher described having a quality curriculum as 'hitting the teacher jackpot.' Another stated that she could 'never go back to anything else'" (Score, 2019).

Recognizing the importance of curriculum in student success, the demand for HQIM has increased, leading states and districts to prioritize the adoption of these tools (Doan et al., 2022). Imagine Learning has developed a portfolio of core curricula, including **Imagine IM (Illustrative Mathematics)**, **Twig Science**, and **Traverse**, which aim to exemplify the principles of HQIM. These programs focus on enhancing the teacher and student experience through inquiry-based learning, hands-on activities, digital investigations, and real-world connections. They provide ample opportunity for students to communicate and collaborate with peers as they engage in meaningful, relevant learning using new technologies. The pedagogical approaches of Imagine Learning's programs support students in mastering grade-level content as they engage with deep learning, enabling students to acquire the durable skills associated with *Portrait of a Graduate* initiatives.

Call to Action: Moving from Vision to Impact

Many districts have established *Portrait of a Graduate* frameworks. However, that is just the first step. Moving the *Portrait* vision to practice and impact means ensuring these visions translate into meaningful classroom experiences filled with joy, purpose, and engagement. Achieving this requires:

1. **Commitment to Instructional Change** — Districts must embed deeper learning principles into everyday teaching, shifting from passive instruction to active, inquiry-based learning models. For example, in Cupertino, California, district leaders are partnering with principals and a cadre of teachers in their Accelerators Network to finalize a learning framework that helps clarify classroom changes across the district. By involving students in the learning process, these efforts ensure that education is rigorous, inspiring, and, most importantly, student-centered.

2. **Investment in High-Quality Instructional Materials** — States such as Arkansas, Indiana, Kentucky, Ohio, Michigan, and Washington have adopted *Portrait of a Graduate* frameworks along with supporting the adoption of HQIM. Districts can also prioritize the adoption of HQIM that align with state or local *Portrait of a Graduate* goals. This will support educators with implementing deeper learning opportunities that nurture the *Portrait of a Graduate* skills and support all students in accessing materials that foster deep understanding and skill development. Alanna Zawlocki, an elementary teacher in Illinois, highlighted the impact of HQIM on student development: "[Students] feel more confident; they are able to solve the problems on their own or with a partner, and then are able to explain it in front of the class. They actually get really excited to come up and share ideas" (Imagine Learning, n.d.). Thoughtfully designed instructional materials help bring learning to life by encouraging exploration, creativity, and collaboration. Let's leverage the benefit HQIM provides by putting these in the hands of more educators!

Imagine IM (Illustrative Mathematics) – imaginelearning.com/imagine-im
Twig Science – imaginelearning.com/twig-science
Traverse – imaginelearning.com/traverse

3. **Professional Learning for Educators** — Teachers need ongoing support to implement deeper learning effectively. This includes professional development focused on integrating HQIM and designing student-centered learning experiences. In Winston-Salem/Forsyth County Schools, NC, district leaders are leveraging their district office and teacher volunteers to provide professional learning dedicated to crafting the vision for instructional excellence by aligning their professional learning with strategic plan goals and their theory of action. Chief Academic Officer Paula Wilkins describes it this way: "The PoG is our 'North Star' — our why and vision for student outcomes and the durable skills we want all students to develop. Instructional Excellence is the educator's input, creating the conditions for deeper learning. Deeper Learning is the student's thinking and engagement required to achieve *Portrait* outcomes."

4. **Community and Stakeholder Engagement** — Sustainable transformation requires a comprehensive approach. It takes everyone! Collaboration between educators, policymakers, families, and community members can reinforce the importance of skills-based learning and advocate for systemic change. Every *Portrait of a Graduate* initiative should be deeply rooted in the community's voices, ensuring shared ownership and sustained impact. Battelle for Kids supports districts in planning meaningful community engagement to co-create a *Portrait* as a shared vision for student success.

In this vital work, we are not alone. Other organizations are focusing on helping school leaders see an urgent need to reimagine what is possible in our schools to better prepare students for the future. As the School Superintendents Association's (AASA) Dave Schuler said, "When we cultivate critical thinking, creativity, and resilience, our students leave high school equipped to thrive in an increasingly complex global society. And when we allow students to co-author their learning journey, we set them — and all of us — up for future success" (Battelle for Kids, 2024).

By aligning *Portrait of a Graduate*, *Deeper Learning,* and *High-Quality Instructional Materials*, education systems can move beyond vision statements to create transformative learning environments where all students develop the skills they need for lifelong success. When we provide opportunities for students to think critically, collaborate with others, and engage deeply in their learning, they grow into capable and resilient citizens. When students experience deeper learning infused with curiosity, relevance, and joy, they are more likely to see education as a pathway to fulfilling their aspirations. Let's ensure our classrooms cultivate knowledge, hope, and excitement for the future.

References

Battelle for Kids. (2024). *The portrait of a graduate: A special futurecast report.* battelleforkids.org/insights/futurecast-report/

Berlin, R. & Zhou, C. (2022). *Prioritizing use of HQIM among aspiring and first-year teachers.* SCORE. tnscore.org/perspectives-and-press/perspectives/prioritizing-use-of-hqim-among-aspiring-and-first-year-teachers

Cator, K., Lathram, B., Schneider, C., & Vander Ark, T. (2015). *Preparing leaders for deeper learning.* Hewlett Foundation. hewlett.org/library/preparing-leaders-for-deeper-learning/

Council of Chief State School Officers. (2021). *How states can support the adoption and effective use of high-quality standards aligned instructional materials.* Author. 753a0706.flowpaper.com/CCSSOIMPDCaseStudyOVERVIEWFINAL/#page=2

Doan, S., Kaufman, J.H., Woo, A., Prado Tuma, A., Diliberti, M. K., & Lee, S. (2022). *How states are creating conditions for use of high-quality instructional materials in K-12 classrooms: Findings from the 2021 American instructional resources survey.* RAND Corporation. rand.org/pubs/research_reports/RRA134-13.html

Dondi, M., Klier, J., Panier, F., & Schubert, J. (2021). *Defining the skills citizens will need in the future world of work.* mckinsey.com/industries/public-sector/our-insights/defining-the-skills-citizens-will-need-in-the-future-world-of-work

Granados, A. (2022). *State superintendent Catherine Truitt unveils Portrait of a Graduate.* EducationNC. Portrait of a Graduate unveiled - EducationNC

Imagine Learning. (n.d.). *Impact story: Community consolidated school district 59 (CCSD59).* imaginelearning.com/wp-content/uploads/2023/04/1074206548_IM_MATH_CCSD_59_Research_Success-Story_DIGITAL.pdf

Learning Policy Institute. (n.d.). *Deeper Learning.* learningpolicyinstitute.org/topic/deeper-learning

McLean & Company. (2024). *The future of work summary report: Summary report.* go.mcleanco.com/future-of-work-g/a1Na7000000JNvNEAW

Medina B., & Alderman, K. (2023). *Portrait of a graduate: A gateway to competency-based learning.* Aurora Institute. aurora-institute.org/cw_post/portrait-of-a-graduate-a-gateway-to-competency-based-learning

Microsoft & McKinsey & Company. (n.d.). *The class of 2030 and life-ready learning: The technology imperative.* info.microsoft.com/rs/157-GQE-382/images/EN-US-CNTNT-Whitepaper-Education-Class-of-2030-report.pdf

North Carolina Department of Public Education. (2022). *North Carolina Portrait of a Graduate revealed.* dpi.nc.gov/news/press-releases/2022/10/18/north-carolina-portrait-graduate-revealed

San Ramon Unified School District. (n.d.). *Learner profile.* srvusd.net/documents/About-Us/SRVUSD-Learner-Profile.pdf

Score. (2019). *High-quality materials in the hands of teachers: Hitting the teaching jackpot.* tnscore.org/perspectives-and-press/perspectives/high-quality-materials-in-the-hands-of-teachers-hitting-the-teaching-jackpot

Steiner, (2017). *Curriculum research: What we know and where we need to go.* Standards Work. standardswork.org/wp-content/uploads/2017/03/sw-curriculum-research-report-fnl.pdf

World Economic Forum. (2023). *Future of jobs report 2023.* Retrieved from www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf

Zeiser, K. L., Taylor, J., Rickles, J., & Garet, M. S. (2014). *Report 3: Findings from the study of deeper learning opportunities and outcomes: Evidence of deeper learning outcomes.* American Institutes for Research & The Research Alliance for New York City Schools. air.org/sites/default/files/downloads/report/Report_3_Evidence_of_Deeper_Learning_Outcomes.pdf

battelle for kids

imagine
learning
empower potential®

battelleforkids.org
imaginelearning.com