# future9
## COMPETENCIES

# The Case for reDesign's
# **Future9 Competencies**

*Research Overview & Review Process*

**Y**ears in the making, reDesign's **Future9 Competencies** have been informed by a wide range of education and learning sciences research, and shaped by over a decade of design, field-testing, and competency implementation work alongside school, district, and state partners.

*This report includes:*

**Highlights from the research literature** that support the selection of skills sets included in the Future9 Competencies. The framework applies a whole-learner, cross-disciplinary lens to map out foundational academic, cognitive, metacognitive, and social-emotional development. They are designed to help learners put their skills and knowledge into action across authentic, diverse contexts over time.

**Synthesis of our external review process** prior to the release of the competencies. Nearly three dozen young people, educators, researchers, leaders, and content experts took a close look at the competencies' scope, content, and design and provided insights and feedback.

**Internal technical criteria** used to assess and improve the clarity and structure of the design, while attending to language, bias, and representation. These criteria helped set the standard for developing a set of high-quality, progression-based competencies that provide learners with transparent, stable, and coherent K-12 learning trajectories.

**future9**
C O M P E T E N C I E S

# Why do learners need future-ready competencies?

**What will K-12 learning, at its best, entail in the future?** Competencies and competency-based education — in which learners gradually progress through a continuum of sequentially arranged knowledge and skills — will likely play a key role. Across the country and the world, K-12 competency-based learning is gaining momentum, as educators, students, and parents recognize its capacity to support student agency and engagement, as well as more flexible, equitable, and meaningful learning pathways.

A number of national and international reports on the future of K-12 learning recommend the ongoing development of **competency-based approaches** in a variety of contexts: in school, in after school, and in out-of-school settings[1]. Every state now allows for some form of competency-based education, and a number of districts, schools and after school programs have successfully implemented competency-based approaches[2].

Yet despite the growing role of competency-based education in elementary and secondary settings, many people—while aware of the role of competencies play in higher education and work-force training—are still not aware of their potential role in K-12 learning, in part, because there are few readily available, published, high-quality K-12 competency sets available for use in the classroom.

To meet this gap in available competency sets for children and youth, reDesign has built a set of research-informed competencies and progressions focused on some of the most salient aspects of education and development: a **whole-child approach to learning** that recognizes the interrelationship of social, emotional, and cognitive learning; an emphasis on **future-ready knowledge and skills**, that focuses on the problem solving, critical thinking, and collaboration skills necessary for life in a complex, interdependent world; and an appreciation of learning as **developmental, iterative, and ongoing**, that takes the form of a flexible, holistic K-12 continuum to guide learning across the trajectory of a young person's education inside or outside of school[3].

In line with our social impact mission and informed by research and our work in the field, we have developed **reDesign's Future9 Competencies** as a tool to help practitioners attend to the complex ways that young people learn, think, and create throughout their entire lives—through their emotions, relationships, cultures, identities, languages, ideas, dreams, brains and bodies, rather than any single, specific academic behavior or method.



*Measuring the learning that matters.*

DESIGN SOLUTIONS • BUILD COMMUNITY • ENGAGE IN INQUIRY • SUSTAIN WELLNESS • EXPRESS IDEAS • REASON QUANTITATIVELY • LEARN INTERDEPENDENTLY • READ THE WORLD • NAVIGATE CONFLICT

## The reDesign Future9 Competencies *include:*

**Competencies** - a transferable set of specific, observable, and agency-building skills that are important for lifelong learning, as well as living, working, and contributing in a community

**Progressions** - that serve as "developmental rubrics" for each competency, describing concrete, observable behaviors and actions in student-facing language about how these skills authentically develop, from novice to expert

[1] AYPF, 2016; Boser et al, 2018; Hauser, 2016; Jerald, et al., 2017; Lerner, et al., 2016; OECD, 2018
[2] Stanford, 2023
[3] Cantor, et al., 2021; Care, 2018; Darling-Hammond, K., et al., 2022; Darling Hammond, L. et al 2018; Darling-Hammond, L. et al., 2020; Immordino-Yang, et al., 2018; Ladson-Billings, 2021; Nagaoka, et al., 2018; National Research Council, 2000; OECD, 2018; Ontario Ministry of Education, 2016; NYESD, 2018

**T**he research consulted in designing each of the Future9 **Competencies** is briefly summarized here. We outline the thinking, selection, development, and focus of individual competencies as part of a set of essential skills for future-ready learning.

## Build Community

The experience of belonging within a community has come to be seen as foundational to all learning and development[4]. Not only do learners need the opportunity to experience being part of caring communities and in positive relationships with others, they also need the chance to develop the skills to initiate and sustain relationships in a range of contexts in their lives, for both their inherently meaningful and instrumental purposes. The competency Build Community focuses on the essential, transferable skills individuals need to cultivate and sustain relationships in community, and develop multilingual skills to sustain home languages and learn new languages. For this competency, we drew on research related to belonging, connectedness, relationship-building inside and outside of schools, networking, social capital, and language development.

The competency **Build Community** focuses on the essential, transferable skills individuals need to contribute to the processes of establishing and sustaining community with others: belonging, building relationships, and networking.

For this competency, we drew on research on belonging, connectedness, relationship-building inside and outside of schools, networking, and the development, as well as the critique of, social capital in schools and life.

## Design Solutions

In the complex modern world, we are often called on to be problem-solvers in both our professional and personal lives. Problem-based learning, not surprisingly, has become an influential pedagogy, in which educators pose a challenging yet doable open-ended problem, with appropriate scaffolding to stimulate learners' creative thinking, cognitive growth, and the development of content-area skills[5]. At its best, problem-based learning also encompasses an iterative approach to developing solutions: once a problem has been grappled with and a potential solution envisioned, learners test and revise their solution to make it as viable as possible.

The competency **Design Solutions** emphasizes three key skills underlying problem-based learning: defining and exploring a problem; developing models and/or prototypes to solve the problem; testing and refining the models and/or prototypes to improve them. Not only is this competency applicable to many design challenges in work and life, but it is also applicable to many kinds of interdisciplinary learning across subjects in schools, including project-based learning, engineering challenges, art and media projects, science learning linked to real-world applications, and youth work on community projects.

Our thinking around the competency **Design Solutions** started with research on design thinking and rapidly branched out to include research on problem-based learning, project-based learning, engineering and art education, and youth participatory research.

[4] Darling-Hammond et al., 2018
[5] Zakaria, 2019

## Engage In Inquiry

Inquiry-based learning has a long history. As far back as Socrates, educators have been using systematic questioning to help students uncover truths and learn about the world around them. Dewey and Constructivism have influenced contemporary approaches to inquiry-based learning, most of which is characterized by a driving question or authentic problem, active, learner-ownership of the processes, teacher-support rather than direction, and creation of an artifact[6]. Project-based learning and a number other current pedagogical approaches are grounded in inquiry-based learning[7].

As valuable and compelling as inquiry is, it can be difficult to implement without a clear cycle of steps. Students benefit from learning and internalizing a clear, transferable cycle of steps for inquiry, which they can then use across content areas to explore knowledge in and out of school. The competency **Engage In Inquiry** speaks to this need for learning a clear, transferable cycle for doing inquiry, as it takes learners through the skills of learning to frame a research question, develop a plan, evaluate sources, and synthesize findings.

Often different subject areas in a school will have somewhat different approaches to inquiry, and a stream-lined, content-agnostic competency, such as **Engage In Inquiry,** can help students to better understand inquiry as a foundational, transferable processes for gaining knowledge, usable across content areas, without in any way diminishing their more specific understanding of subject-specific approaches to inquiry.

To develop this competency, we drew on three areas of research related to inquiry: general research on inquiry-based learning as a field, subject-specific approaches to inquiry, and previously-developed inquiry-based frameworks and cycles. Across all three of these research areas, we aimed to distill the most essential, most cross-cutting and transferable components of inquiry, in order to build a competency usable to seek out and generate knowledge in a wide range of academic and non-academic contexts. Additional background information for this competency can be found in our concept paper, Learning As Inquiry.

## Express Ideas

There are so many means and media through which we can express ideas: through the means of words, art, music, and dance, for example, and through the media of texts, performances, videos, and recordings, to name just a few. Yet, despite this abundance of ways to communicate, we often insist that learners think only of written words and texts as the way to express ideas, rather than seeing the expression of ideas in words and texts as a powerful, foundational tool, essential for success in life and work in multiple forms[8]. If we readjust our vision of how learners can express ideas to take in the beautiful array of means and media for doing so, then the expression of ideas in written words and texts remains an essential skill, but not a singularly-defined one, and we recognize the value of equipping learners with a necessary 21st-century ability: the capacity to choose and use the best means and media for expressing their ideas.

To develop learners' capacity for choosing and using the best means and media for expressing their ideas, they need a skill set that–while grounded in the expression of ideas through

writing–recognizes the value of orality and multiple modes of communicating, digitally and otherwise. The competency **Express Ideas** does just that, through a focus on five skill areas central to the expression of written thought, yet also more broadly applicable to conveying thoughts through other modes of expression: defining audience, purpose and format; developing one's message; developing craft; finalizing; sharing and reflecting. Because the skills in this competency are anchored in the skills needed to write well, yet are also highly applicable to other forms of communication, they are ideal for supporting student work on multimodal/multimedia performance assessments and/or portfolios.

To inform the development of this competency, we explored research related to: writing development, composition, and instruction; multimodality and multiliteracies; impact of the arts on learning, particularly from the perspective of artifact-making; and work on discourse and the practice of performance.

[6] Duncan and Chin, 2021
[7] Condliffe, 2017
[8] Si et al., 2022

*In a period of time where testing has become more important than child development, reDesign's framework is a great addition to any classroom curriculum."*

– EXPERT REVIEWER

## Learn Interdependently

When we learn interdependently we use our voice and agency to work with others. Educators, parents, and community members have come to realize that without voice and agency, youth are rarely engaged in their own learning, and may not think through what they are learning or be able to articulate their learning. In contrast, empowered, interdependent learners with voice and agency often willingly plan and discuss their learning with others[9].

The competency **Learn Interdependently** focuses on 1) the skills learners need to to use their voice and agency effectively and 2) the self-efficacy and conversational abilities necessary to collaborate and execute complex projects in schools, workplaces, and life.

To develop this competency, we synthesized not only the research on student voice and agency, but also the research on self-efficacy, goal setting, planning, discussion, and feedback.

Many resources and guidelines are available separately on each of these distinct areas of learning science, but this array of materials can leave learners and teachers confused about how to integrate them into something learners can readily use to improve their capacity to learn interdependently. We intend the competency **Learn Interdependently** to fill this gap and to get at what voice and agency look like when youth draw on the concrete skills associated with self-efficacy, goal setting, planning, discussion, and feedback.

## Navigate Conflict

Conflict is part of learning and life, and educators have long recognized the importance of developing learners skills in navigating conflict. The field of conflict resolution has for many years informed educators' approach to helping learners navigate conflict within schools and communities, as well as more recently the field of restorative justice, with its greater emphasis on relationships and the call to honor all individuals' inherent worth[10]. Many schools and youth programs have adopted frameworks for addressing conflict that are grounded in the work of both of those fields.

The competency **Navigate Conflict** likely aligns with skills and mindsets learners may have worked with in school and community-based conflict resolution and restorative justice frameworks. It likely differs somewhat from these frameworks,

though, in its distinct emphasis on the role of the individual learner's agency in recognizing and mitigating conflict within the classroom and beyond, and its careful distilling of what skills a learner as an individual can use to help them process and respond to conflict: recognize and process feelings; recognize and respond to feelings of others; and apply strategies to work towards resolution.

To develop this competency, we considered research and frameworks related to conflict resolution, restorative justice, self-regulation, and social-emotional learning.

[9]Baroutsis, et al., 2016; Toshalis and Nakkula, 2012
[10]Darling-Hammond, S., 2023; Fronius et al, 2019

## Read The World

Reading, according to the educator and philosopher Paulo Friere, entails reading the world as well as reading the word, paying attention to the context that surrounds texts, as well as the texts themselves: questioning, interrogating, and seeking to understand not just the meaning of discourse, but the power, point of view, and artistry embedded in discourse[11].

As a competency, **Read The World** demonstrates how learners understand ideas from many angles and how they learn to identify, critique, appreciate, and connect ideas across time and place. In our highly literate world–embedded in multiple texts and discourses–this ability to interpret ideas agilely is essential for navigating life and work.

To develop this competency, we drew on four primary areas of education research and practice:  student-generated questioning, critical thinking, criticality, and historical inquiry. What all four of these areas of research and practice have in common is the recognition that in order to read the world, learners need to be asking deep and probing questions about texts, discourse, and artifacts - questions that enable them to see the ever-evolving connections between texts, discourse, artifacts and society.

## Reason Quantitatively

Inside and outside of schools, we are called on to reason quantitatively, often in content areas and contexts not strictly defined as math-related. In other words, reasoning quantitatively, like reasoning verbally, is a universal, widespread competency, with some essential components that we can rely on to do our best reasoning regardless of setting. Numerous reports have made the case for quantitative reasoning and literacy as a significant 21st-century capability[12], yet getting learners to understand quantitative reasoning as something they can progressively learn and do in many contexts, not just math class, can be tricky because many learners have never seen and worked with quantitative reasoning as a transferable competency with wide-spread utility in daily life, as well as a range of academic disciplines.

The competency **Reason Quantitatively** aims to address this gap in learners' understanding of the transferability and viability of quantitative reasoning in many contexts by distilling quantitative reasoning down to its essence as an element of problem-solving — the skills associated with representing, solving, and explaining problems from a quantitative perspective. These problem-related skills, while often taught in math classes, are not exclusive to learning in math, and often show up in learning related to analysis more broadly, including analysis of data, at small and large scales in schools, work, and life. Once learned as a competency, reason quantitatively then becomes an accessible tool for making sense of problems and approaching them quantitatively throughout one's life.

Our work with this competency has been informed by research on quantitative reasoning and literacy, problem solving in math and science education, math mindsets, and emerging research on teaching data literacy in secondary and elementary schools.

[11] Freire, 1985
[12] Steen, ed. 2001

*During my first read of the framework, I kept thinking what a difference we would see in the world if every teacher, student, and caregiver had an understanding of these competencies."*

– EXPERT REVIEWER

## Sustain Wellness

Numerous researchers have recognized the extent to which learning entails social and emotional components, as well as cognitive ones[13]. To this recognition of the entwinement of social, emotional, and cognitive learning has been added a wide-spread recognition of the role that identity plays in learning, and the ways in which threats to one's identity in the form of bias and stereotypes negatively impact learning and well-being more generally[14]. For joyful learning to occur, learners need caring environments where they are given the tools to build, explore, and sustain their identities, relationships, and feelings, as well as their ideas.

The competency **Sustain Wellness** provides these tools for building, exploring, and sustaining identities, relationships, and feelings through three key skill areas: nurturing identity, disrupting bias, and building affirming life practices. The competency as a whole contains aspects of social emotional learning, but is not solely that, since it encompasses skills related to caring for one's self and others in socially just ways, as well as skills more traditionally associated with SEL.

As would be expected in a competency that works across a number of socially, culturally, and psychologically inflected areas of education practice, the research we drew on to design **Sustain Wellness** draws on approaches to thriving and flourishing articulated in a wide range of fields, including positive psychology, social and emotional learning, and culturally-responsive and sustaining education.

[13] Immordino-Yang, et al. 2018
[14] Nagaoka, 2015

# INSIGHTS

**A**cross the review process, we asked educators, young people, and subject matter experts to respond to face validity survey items based on their initial impressions of the competencies as a whole, make suggestions for improvement, including around the clarity of language, and provide open-ended comments on language, bias/representation, and potential use when implemented in classrooms.

Internally, we also held each skills progression to a high standard of quality review, which included an eye towards inclusive and affirming language, ease of distinctions between levels and indicators, ability for learners to directly use the competencies as student-facing materials for goal-setting and reflection, the measurement of observable and discrete actions/processes/behaviors through positive and developmental progressions, applicability to multiple contexts or ways of demonstrating understanding, and grounding in equity-driven, empirical research.

## *Data on Face Validity*
### HIGHLIGHTING
### LEVEL OF AGREEMENT
#### SCALE OF 1-5

| | YOUTH ADVISORY COUNCIL | EDUCATORS/EXPERTS IN THE FIELD | |
|---|---|---|---|
| The competency framework **measures worthwhile skills.** | 4.67 | 4.95 | The competency framework **measures worthwhile thinking & learning skills.** |
| The competency framework **measures relevant skills.** | 4.78 | 4.86 | The competency framework **measures relevant thinking & learning skills.** |
| The competency framework **builds skills that would be useful for lifelong learning.** | 4.89 | 4.85 | The competency framework **builds skills that prepare learners for lifelong learning.** |
| The competency framework **builds skills that can be used across different subjects.** | 4.78 | 4.85 | The competency framework **builds skills that can be transferred across different learning contexts or disciplines.** |
| The competency framework **builds skills that develop the whole student, academically and socially.** | 4.78 | 4.71 | The competency framework **builds skills that support a whole-child approach to learning.** |

# Researcher & Educator Perspectives

**W**e gathered perspectives towards reDesign's Future9 Competencies from nearly two dozen reviewers who have experience in the field as teachers, education leaders, policymakers, researchers, and content experts. They each provided input on the competencies as a collective set, and then took a deep dive into the particular competencies and progressions that aligned with their expertise and background. Here's some key learnings that informed revisions to the competencies.

## 4.71 *out of* 5

Across survey questions about the **face validity** of the **framework**, the **average rating** was **4.71 out of 5** on a scale from 1-5 that measured level of agreement.

**HOLISTIC** APPROACH

**QUALITY** OF DESIGN

**WORTHWHILE** SKILLS

**LIFE-LONG** RELEVANCY

**CLEAR SCAFFOLDING & PROGRESSION** FOR LEARNERS

**Wanted to see more:**
**Connections** to formative assessment tools, **support for teachers** to map evidence of learning to a particular level, understanding of **how to use** this as a **tool** for **growth** and **reflection** for students versus for ranking, **co-creation** and **co-design**, **guidance** for how to coordinate **use across different classrooms and subjects**

**Within the bias review:**
General agreement that there were **no significant issues of bias**, with the potential for the competencies to be used as an "**inclusive tool for discussion**" that was fairly **universal in design** and managed to "**tackle sensitive issues creatively**", "**look at ways that students go beyond themselves**", and place **value** on the **experiences of people** from **various backgrounds**.

**Further recommendations that informed our revisions included**
incorporating more **"community-embedded" approaches** in the design solutions portion, and throughout, considering **how to support neurodivergent learners, early childhood development**, and **variation in implementation contexts**.
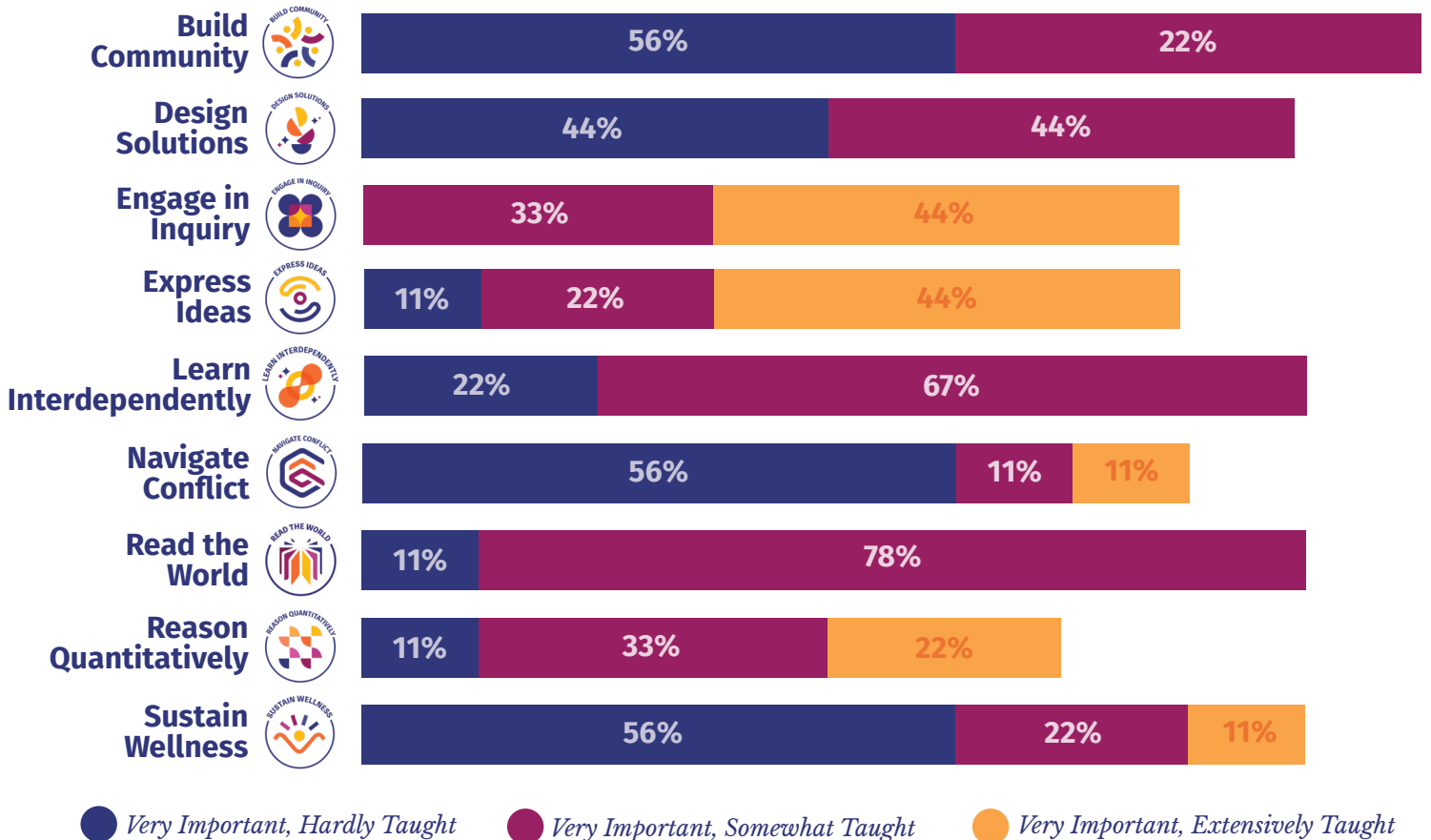
# Youth
## Data
## Highlights

**G**athering perspectives from a representative sample of learners was especially crucial to the development of reDesign's Future9 Competencies, because they are written in student-facing language that names what learners are able to do throughout each level of every skill progression. We wanted to hear from the reDesign Youth Advisory Council of students from around the U.S. and Canada about the relevance and utility of our competencies framework, and how it aligned with their future goals for their growth and learning, as well as their current schooling experience.

On average across our Youth Advisory Council, the **number of competencies that participants rated as "very important" was 7.67 out of the total nine.** Their responses about the extent to which the nine competencies are taught in their current school indicated that at least for secondary students, some competencies will support or extend current learning, while others will fill in a significant gap in holistic, future-ready skill development.

## *Importance & Opportunities*
## TO LEARN

Percentage of Total Respondents

| Competency | | |
|---|---|---|
| **Build Community** | 56% | 22% |
| **Design Solutions** | 44% | 44% |
| **Engage in Inquiry** | 33% | 44% |
| **Express Ideas** | 11% / 22% | 44% |
| **Learn Interdependently** | 22% | 67% |
| **Navigate Conflict** | 56% | 11% / 11% |
| **Read the World** | 11% | 78% |
| **Reason Quantitatively** | 11% / 33% | 22% |
| **Sustain Wellness** | 56% | 22% / 11% |

● *Very Important, Hardly Taught*   ● *Very Important, Somewhat Taught*   ● *Very Important, Extensively Taught*

### Loved

**Consistent connection** to lifelong value and real-world applicability; **high potential to support** their personal trajectories and development

### Questioned

**Utility across all grade levels, support and guidance needed** given the complexity of certain terms and language, & if we could make **more explicit global connections**

### Saw

**Potential to use competencies** to get practice with them over time & do things more independently as they get better at them; **usefulness for supporting giving and receiving feedback**

**WHAT YOUTH** HAD TO SAY

*"Because this framework is applicable in countless scenarios, it serves as a scaffolding for human life. It supports learning across the workplace, education, social community, self-identity, and more."*

*"All of the skills in the framework were essential at multiple points in my life, whether it was for school, extracurricular activities, or side passion projects."*

*"The learning in these blocks extends far past a classroom, subject, or grade level and instead focus on the student instead of the grades. It connects in classroom skills and rubrics to out of classroom independent study and ties in real world skills to make a better citizen of the earth. "*

ENGAGE IN INQUIRY

DESIGN SOLUTIONS

READ THE WORLD

NAVIGATE CONFLICT

# REFERENCES

American Youth Policy Forum (AYPF). (2016). The intersection of afterschool and competency-based learning: emerging trends, policy considerations, and questions for the future. American Youth Policy Forum, Washington, District of Columbia. https://www.aypf.org/resource/6875/

Baroutsis, A., McGregor, G., & Mills, M. (2016). Pedagogic voice: Student voice in teaching and engagement pedagogies. *Pedagogy, Culture & Society, 24*(1), 123-140. https://www.tandfonline.com/doi/abs/10.1080/14681366.2015.1087044

Boser, U., McDaniels, A., & Benner, M. (2018). Using the Science of Learning to Redesign Schools. *Center for American Progress.* https://files.eric.ed.gov/fulltext/ED592772.pdf

Buchanan, S., Harlan, M., Bruce, C., & Edwards, S. (2016). Inquiry based learning models, information literacy, and student engagement: A literature review. *School Libraries Worldwide*, 23-39. https://journals.library.ualberta.ca/slw/index.php/slw/article/view/6914

Cantor, P., & Osher, D. (Eds.). (2021). *The science of learning and development: Enhancing the lives of all young  people.* Routledge. https://www.routledge.com/The-Science-of-Learning-and-Development-Enhancing-the-Lives-of-All-Young/Cntor-Osher/p/book/9780367481070

Care, E., Kim, H., Vista, A., & Anderson, K. (2018). Education System Alignment for 21st Century Skills: Focus on Assessment. *Center for Universal Education at The Brookings Institution.* https://files.eric.ed.gov/fulltext/ED592779.pdf

Condliffe, B. (2017). Project-Based Learning: A Literature Review. Working Paper. *MDRC.* https://files.eric.ed.gov/fulltext/ED578933.pdf

Darling-Hammond, K., & Darling-Hammond, L. (with Byard, E.). (2022). *The civil rights road to deeper learning.* Learning Policy Institute. https://learningpolicyinstitute.org/product/civil-rights-road-deeper-learning-brief

Darling-Hammond, L., & Cook-Harvey, C. M. (2018). Educating the Whole Child: Improving School Climate to Support Student Success. *Learning Policy Institute.* https://learningpolicyinstitute.org/product/educating-whole-child-report

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied developmental science, 24*(2), 97-140. https://www.tandfonline.com/doi/pdf/10.1080/10888691.2018.1537791

Darling-Hammond, S. (2023). Fostering Belonging, Transforming Schools: The Impact of Restorative Practices. *Learning Policy Institute.* https://learningpolicyinstitute.org/product/impact-restorative-practices-brief

Duncan, R. G., & Chinn, C. A. (Eds.). (2021). *International handbook of inquiry and learning.* Routledge. https://www.routledge.com/International-Handbook-of-Inquiry-and-Learning/Duncan-Chinn/p/book/978113822600

Freire, P. (1985). Reading the world and reading the word: An interview with Paulo Freire. *Language arts, 62*(1), 15-21. https://www.jstor.org/stable/pdf/41405241.pdf

Fronius, T., Darling-Hammond, S., Persson, H., Guckenburg, S., Hurley, N., & Petrosino, A. (2019). Restorative Justice in US Schools: An Updated Research Review. *WestEd.* https://www.wested.org/resources/restorative-justice-in-u-s-schools-an-updated-research-review/

Hauser, A. (2016). Looking under the hood of competency-based education*: The relationship between competency-based education practices and students' learning skills, behaviors, and dispositions*. Washington, DC: American Institutes for Research. https://www.air.org/resource/report/looking-under-hood-competency-based-education-relationship-between-competency-based

Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. (2018). The Brain Basis for Integrated Social, Emotional, and Academic Development: How Emotions and Social Relationships Drive Learning. *Aspen Institute.* https://files.eric.ed.gov/fulltext/ED596337.pdf

Jerald, C., Campbell, N., & Roth, E. (2017). High Schools of the Future: How States Can Accelerate High School Redesign. *Center for American Progress.* https://files.eric.ed.gov/fulltext/ED586218.pdf

Ladson-Billings, G. (2021). *Culturally relevant pedagogy: Asking a different question.* Teachers College Press. https://www.tcpress.com/culturally-relevant-pedagogy-9780807765913

Lerner, J. B., Tomasello, J., Brand, B., & Knowles, G. (2016, January). The Intersection of Afterschool and Competency-Based Learning: Emerging Trends, Policy Considerations, and Questions for the Future. American Youth Policy Forum. https://www.aypf.org/wp-content/uploads/2016/01/AS.CBL-Paper-FINAL-1.6.pdf

Lewis, M. W., Eden, R., Garber, C., Rudnick, M., Santibañez, L., & Tsai, T. (2014). Equity in competency education: Realizing the potential, overcoming the obstacles. *RAND Education and Jobs for the Future.* https://www.luminafoundation.org/files/resources/equity-in-competency-education.pdf

Nagaoka, J., Farrington, C. A., Ehrlich, S. B., & Heath, R. D. (2015). Foundations for Young Adult Success: A Developmental Framework. Chicago: University of Chicago Consortium on School Research. https://consortium.uchicago.edu/publications/foundations-young-adult-success-developmental-framework

National Research Council. (2000). *How people learn: Brain, mind, experience, and school: Expanded edition* (Vol. 1). National Academies Press. https://nap.nationalacademies.org/catalog/9853/how-people-learn-brain-mind-experience-and-school-expanded-edition

NYSED, 2018. Culturally Responsive-Sustaining Education Framework. https://www.nysed.gov/sites/default/files/programs/crs/culturally-responsive-sustaining-education-framework.pdf

Ontario Ministry of Education. (2016). Towards Defining 21st Century Competencies for Ontario. https://www.edugains.ca/resources21CL/About21stCentury/21CL_21stCenturyCompetencies.pdf

# REFERENCES

Organization for Economic Co-operation and Development (OECD). (2018). The future of education and skills: Education 2030. *OECD Education Working Papers.*
https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

Si, Q., Hodges, T. S., & Coleman, J. M. (2022). Multimodal literacies classroom instruction for K-12 students: a review of research. *Literacy Research and Instruction, 61*(3), 276-297.
https://www.researchgate.net/profile/Julianne-Coleman/publication/357537572_Multimodal_literacies_classsoom_instruction_for_K-12_students_a_review_of_research.pdf

Star, J. R., Strickland, S., & Hawkins, A. (2008, March). What is mathematical literacy? In *Meeting the challenge of adolescent literacy: Research we have, research we need* (pp. 104-112). New York: Guilford Press.

Stanford, L. (2023, September 17). *Every State Now Let's Schools Measure Students' Success Based on Mastery, Not Seat Time*. Education Week.
https://www.edweek.org/policy-politics/every-state-now-lets-schools-measure-students-success-based-on-mastery-not-seat-time/2023/05

Steen, L. A. (Ed.). (2001). *Mathematics and democracy: The case for quantitative literacy*. Princeton, NJ: NCED.
https://maa.org/sites/default/files/pdf/QL/MathAndDemocracy.pdf

Toshalis, E., & Nakkula, M. J. (2012). *Motivation, engagement, and student voice.* Boston, MA: Jobs for the Future.
https://www.howyouthlearn.org/pdf/Motivation%20Engagement%20Student%20Voice_0.pdf

Zakaria, M. I., Maat, S. M., & Khalid, F. (2019). A systematic review of problem based learning in education. *Creative Education, 10*(12), 2671.
https://www.scirp.org/html/15-6304671_96692.htm

Freire, P. (1985). Reading the world and reading the word: An interview with Paulo Freire. *Language arts, 62*(1), 15-21.
https://www.jstor.org/stable/41405241

Fronius, T., Darling-Hammond, S., Persson, H., Guckenburg, S., Hurley, N., & Petrosino, A. (2019). Restorative Justice in US Schools: An Updated Research Review. *WestEd.*
https://www.wested.org/resources/restorative-justice-in-u-s-schools-an-updated-research-review/

Hauser, A. (2016). *Looking under the hood of competency-based education: The relationship between competency-based education practices and students' learning skills, behaviors, and dispositions*. Washington, DC: American Institutes for Research.
https://www.air.org/resource/report/looking-under-hood-competency-based-education-relationship-between-competency-based

Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. (2018). The Brain Basis for Integrated Social, Emotional, and Academic Development: How Emotions and Social Relationships Drive Learning. *Aspen Institute.* https://files.eric.ed.gov/fulltext/ED596337.pdf

Jerald, C., Campbell, N., & Roth, E. (2017). High Schools of the Future: How States Can Accelerate High School Redesign. *Center for American Progress.*
https://files.eric.ed.gov/fulltext/ED586218.pdf

Ladson-Billings, G. (2021). *Culturally relevant pedagogy: Asking a different question*. Teachers College Press.
https://www.tcpress.com/culturally-relevant-pedagogy-9780807765913

Lerner, J. B., Tomasello, J., Brand, B., & Knowles, G. (2016, January). The Intersection of Afterschool and Competency-Based Learning: Emerging Trends, Policy Considerations, and Questions for the Future. American Youth Policy Forum. https://www.aypf.org/wp-content/uploads/2016/01/AS.CBL-Paper-FINAL-1.6.pdf

Lewis, M. W., Eden, R., Garber, C., Rudnick, M., Santibañez, L., & Tsai, T. (2014). Equity in competency education: Realizing the potential, overcoming the obstacles. *RAND Education and Jobs for the Future.* https://www.luminafoundation.org/files/resources/equity-in-competency-education.pdf

Nagaoka, J., Farrington, C. A., Ehrlich, S. B., & Heath, R. D. (2015). Foundations for Young Adult Success: A Developmental Framework. Chicago: University of Chicago Consortium on School Research. https://consortium.uchicago.edu/publications/foundations-young-adult-success-developmental-framework

National Research Council. (2000). *How people learn: Brain, mind, experience, and school: Expanded edition* (Vol. 1). National Academies Press.
https://nap.nationalacademies.org/catalog/9853/how-people-learn-brain-mind-experience-and-school-expanded-edition

NYSED, 2018. Culturally Responsive-Sustaining Education Framework.
https://www.nysed.gov/sites/default/files/programs/crs/culturally-responsive-sustaining-education-framework.pdf

Ontario Ministry of Education. (2016). Towards Defining 21st Century Competencies for Ontario.
https://www.edugains.ca/resources21CL/About21stCentury/21CL_21stCenturyCompetencies.pdf

Organization for Economic Co-operation and Development (OECD). (2018). The future of education and skills: Education 2030. *OECD Education Working Papers.*
https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

Si, Q., Hodges, T. S., & Coleman, J. M. (2022). Multimodal literacies classroom instruction for K-12 students: a review of research. *Literacy Research and Instruction, 61*(3), 276-297.
https://www.researchgate.net/profile/Julianne-Coleman/publication/357537572_Multimodal_literacies_classroom_instruction_for_K-12_students_a_review_of_research.pdf

Star, J. R., Strickland, S., & Hawkins, A. (2008, March). What is mathematical literacy? In *Meeting the challenge of adolescent literacy: Research we have, research we need* (pp. 104-112). New York: Guilford Press.

Stanford, L. (2023, September 17). *Every State Now Let's Schools Measure Students' Success Based on Mastery, Not Seat Time.* Education Week.
https://www.edweek.org/policy-politics/every-state-now-lets-schools-measure-students-success-based-on-mastery-not-seat-time/2023/05 time/2023/05

Steen, L. A. (Ed.). (2001). *Mathematics and democracy: The case for quantitative literacy.* Princeton, NJ: NCED.
https://maa.org/sites/default/files/pdf/QL/MathAndDemocracy.pdf

Toshalis, E., & Nakkula, M. J. (2012). Motivation, engagement, and student voice. Boston, MA: Jobs for the Future.
https://www.howyouthlearn.org/pdf/Motivation%20Engagement%20Student%20Voice_0.pdf

Zakaria, M. I., Maat, S. M., & Khalid, F. (2019). A systematic review of problem based learning in education. *Creative Education, 10*(12), 2671.
https://www.scirp.org/html/15-6304671_96692.htm

*To access a bibliography by competency, please view the complete Future9 Competencies framework, available at*

**redesignu.org/future9**

**MEASURING THE LEARNING** THAT MATTERS

# THE
# future
# IS NOW

LEARN MORE AND DOWNLOAD THE COMPETENCIES AT
**redesignu.org/future9**

**reDesign**