

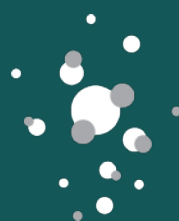
The XQ Competencies: A Comparative Review of Leading Student Learning Frameworks

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Report Commissioned by
XQ Institute



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About the Authors

For three decades, Karen Pittman and Merita Irby have worked to promote positive youth development. Their work together began at the Center for Youth Development and Policy Research, which Karen co-founded with Michele Cahill in 1990. After stints in the Clinton Administration, at the International Youth Foundation, and supporting the startup of America’s Promise, Pittman and Irby co-founded the Forum for Youth Investment—a national nonprofit committed to changing the odds for youth. After nearly 25 years, Pittman and Irby stepped away from organizational management to dedicate their time to galvanizing the growing interest in using science-informed strategies to truly change the odds that all children and youth can be successful. Pittman and Irby serve on numerous advisory boards and field-building initiatives, including as governing partners for the Science of Learning and Development Alliance. Pittman is also an AIR Scholar at American Institutes for Research.

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Knowledge to Power Catalysts is a change-oriented consulting firm whose three partners (Merita Irby, Katherine Plog Martinez, and Karen Pittman) have more than 100 years of experience moving ideas to impact in the education and youth development fields. The Knowledge to Power Catalysts team works with education and youth development leaders to amplify ideas, advise initiatives, and align partners to change the odds that all children and youth will thrive.



XQ Institute is the nation’s leading organization dedicated to rethinking high school. Our young people are growing up at a time when the economy, the workforce, and the environment are changing rapidly. And high schools must respond. We help high schools become centers of innovative and rigorous learning, where every student is prepared to succeed in college, career, and life. Our free tools and products empower educators, communities, and policymakers to disrupt outdated systems by redesigning schools and transforming student learning to be more relevant and engaging. Our approach is guided by deep research, and powered by data and storytelling that inspire action. In partnership with a growing network of schools, districts, and states, we are advancing a movement that radically transforms the high school experience for young people everywhere.

FOREWORD:

Exploring the Purpose and Promise of Student Competencies

Michele Cahill, Senior Advisor, XQ Institute

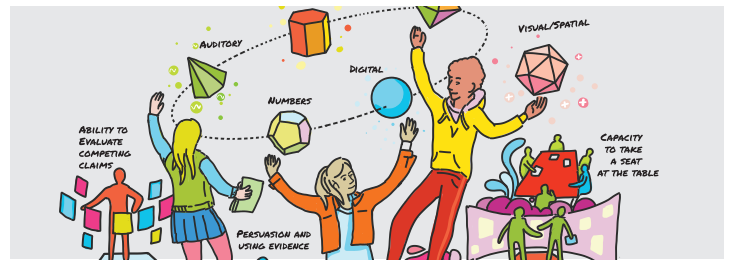
Today's young people are growing up in a complex and uncertain world. Rapid changes in technology, the shifting demands of the labor market, environmental threats, and other larger forces pose challenges for youth that require our high schools to respond with a broader understanding of what young people need to be thoroughly prepared for the future. This sense of urgency is shared by leaders in education, the economy, the workforce, and the broader youth development field, all of whom are calling for high schools to engage students through more powerful learning experiences that can build a broader set of academic and durable life skills.

Recent advances in neuroscience, cognitive psychology, and the learning sciences have all shed new light on how adolescents learn. Adolescence, we now know, is a time of great cognitive malleability and growth and a period when learning across all domains—academic, cognitive, social, and emotional—is deeply affected by relationships, a sense of belonging, and engagement in rigorous and relevant learning experiences. For adolescents, cognitive and social-emotional growth, the development of positive mindsets for learning, and the development of academic and social identity are inextricably intertwined, and all are influenced by what, where, and how students experience their schooling and by opportunities to practice skills in genuine ways.

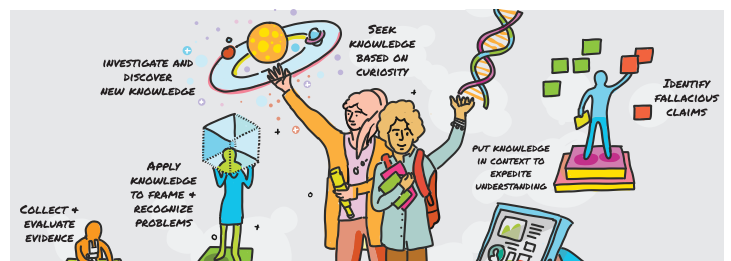
At XQ, we are dedicated to developing and sharing resources that can support communities in transforming the high school experience so all students thrive. We created the five XQ Learner Outcomes in 2016 to provide educators, communities, and young people with a clear and expansive articulation of the knowledge, cognitive capacities, and life skills young people will need to meet

the challenges and opportunities of the future. Grounded in decades of research in adolescent development and learning science, economics and workforce development, and education, the XQ Learner Outcomes function as a North Star for how high schools can and must change to support learners to achieve their full potential. By digging deeply into the work of the National Academies of Sciences,¹ the University of Chicago Consortium on School Research,² innovative adolescent neuroscience researchers such as Mary Helen Immordino-Yang,³ Catherine Hartley, and Leah Somerville,⁴ youth development researcher David Yeager and colleagues,⁵ economists such as Anthony P. Carnevale,⁶ and many others referenced throughout this report, we articulate the XQ Learner Outcomes in ways that honor how students learn and the social contexts within which they do so.

Two XQ Learner Outcomes identify the academic knowledge and skills that have traditionally been the core of high school learning:

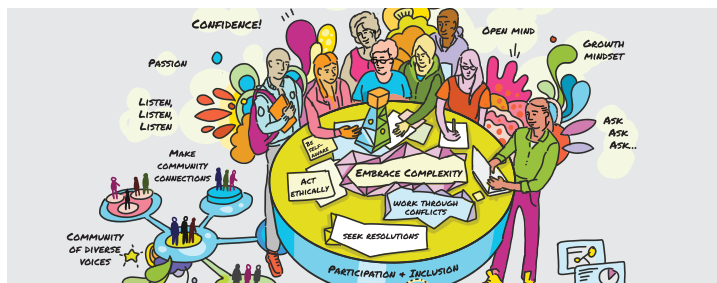


- **Masters of All Fundamental Literacies**—Critical readers, compelling writers, mathematical and numeric thinkers, and data and visual thinkers who are building the academic core necessary to prepare for college, career, and life.



- **HOLDERS OF FOUNDATIONAL KNOWLEDGE**—Curious people who are knowledgeable about the world, its history and culture, its sciences and underlying mathematics, and its biology and cultural currency. They're engaged participants who are key to creating a more just and functional democracy, who participate fully in all America has to offer.

Three XQ Learner Outcomes are less familiar and identify the broader set of capabilities young people need to meet the challenges of today, including collaboration, original thinking, and lifelong learning:



- **Generous Collaborators for Tough Problems**—Self-aware team members who bring their strengths, talent seekers who find the expertise of others. They're essential co-creators—because of what they bring, and how they show up—and inquisitive world citizens who seek out and respect diversity and diverse points of view.



- **Original Thinkers for an Uncertain World**—Sense-makers capable of dealing with conflicting knowledge. They're also generative thinkers, creating many ideas in ambiguous and new situations. And they're creative thinkers who reframe, imagine, and see problems from different perspectives.



- **Learners for Life**—Self-driven, self-directed and curious learners—about themselves, and the world. They're inventors of their own learning paths, careers, and lives.

Taken together, the five XQ Learner Outcomes are foundational to reimagining high school. Yet they are not enough. To make them real and actionable, XQ has also been building the XQ Competencies, a concrete framework that includes granular, observable measures of success in adolescent learning, along with related tools educators will need to capture those measures and guide student learning. Notably, in its developing work on the need for new, expanded measures for assessment, the Institute of Education Sciences (IES) recognizes competency-based education as well aligned to the science of learning.

The XQ Competencies define the full range of cognitive skills and social-emotional capacities that high school graduates need to thrive in college, career, and life. These 37 research-backed competencies, derived from the XQ Learner Outcomes, are designed to be used in concert with academic content standards. Each competency is broken down into component skills and detailed, four-level progressions of student growth and development. The competencies can work in any state, in any school, and in any outside-of-school education setting. They are designed to be accessible to all members of the learning community—teachers, students, families, and local partner organizations and businesses.

The XQ Competencies are the core element of the XQ Student Performance Framework (SPF), which includes a larger (and growing) suite of tools designed to enable educators to utilize the XQ Competencies in teaching and learning. The XQ Competency tools are currently available and include a downloadable rubric; a digital application, the XQ Competency Navigator; and a deck of cards, or manipulatives, that educators can use to spark ideas and discussion about learning experiences. All are being tested for efficacy and ease of use, and we expect to continue to refine them as we learn more. We believe that, in the hands of high school educators, the XQ Competencies can transform how we create holistic learning experiences, assess student progress, and certify students' successful acquisition of essential skills and knowledge. XQ is also working with education technology partners to develop an XQ Learning Management System (LMS) that will allow for seamless tracking of student work, demonstrations of knowledge, and student growth along the XQ Competency progressions

Why XQ Commissioned This Study

The XQ Learner Outcomes and Competencies received high levels of positive feedback during our initial engagements with experts, educators, and students. But reaching the broader community of high school educators, policymakers, families, and students necessitated a more formal review by experts in education and adolescent learning and development. By undertaking a rigorous, research-aligned “pressure test” of the XQ Competencies, we sought to understand where our competency framework adds to existing knowledge and tools in the field, and to do so with a high standard of methodological rigor. Recognizing that there are many competency frameworks that seek to guide social-emotional learning, we also sought a review that would provide context within this body of work to assess how useable our competencies are for educators in high school and out-of-school learning settings, and whether they are a productive, positive addition to advancing the field of adolescent learning.



Educators using the XQ Competencies at the Carnegie Summit in 2023. (Photo courtesy of the Carnegie Foundation.)

With these purposes in mind, we commissioned this review by Karen Pittman and Merita Irby of Knowledge to Power (KP) Catalysts. Pittman has for decades stood as one of the foremost leaders in the field of youth development and social-emotional learning; she is a prominent advocate and translator of research in adolescent development to the education field. In 1998, Pittman and long-time collaborator Merita Irby co-founded the Forum for Youth Investment to connect and convene prominent national organizations engaged in integrating youth development and education to promote equitable strategies for all young people to fully prepare for adult life. These organizations include the National Urban League, 4H, the Council of Chief State School Officers, and the National Youth Employment Coalition.

Key Themes and Findings

In their review, KP Catalysts elucidate three key themes. First, they speak to the scientific basis for competency-based education generally, and the demand from families, employers, institutions of higher education, and students themselves for this type of learning experience. Second, they review whether the Competencies flow directly from the Outcomes, and the degree to which the XQ Competency framework provides a logical, coherent, and actionable tool for educators. Finally, KP Catalysts partnered with the EASEL Lab at Harvard University to compare the XQ Competency framework to other competency frameworks in the field, in order to understand the ways in which the XQ Competencies have unique conceptual and pedagogical value relative to alternatives.

EASEL’s findings indicate that the XQ Competency framework makes a unique and important contribution to the field. EASEL named as particular strengths XQ’s focus on high school learners, the use of student-facing language (“I” statements), and the degree to which the XQ Competencies delineate observable behaviors. Perhaps the most important element of the XQ Competency framework identified by EASEL is its intentional integration of academic and cognitive skills with social-emotional skills, which far exceeds any of the 30-plus existing competency frameworks in EASEL’s review.

We believe that this last element—the integration of academic and cognitive skills alongside social-emotional skills—is essential for adolescent learning. Recent research

from the University of Chicago finds that students experience more positive outcomes, both academic and non-academic, when their schools directly and intentionally invest in students' social-emotional learning and cognitive development.⁷ In fact, support for these two dimensions of adolescent learning is more likely to result in positive academic and post-secondary outcomes than focusing on academic supports in high school.

XQ Competencies can serve as a powerful tool for providing young people with learning experiences that prepare them for future success in college, career, and life. The framework's progressive structure helps ensure that cognitive, social, and emotional competencies can be embedded in every learning experience and integrated with the core academic competencies.

As the review affirms, the framework is uniquely suited for improving the high school experience because it:

- Focuses on observable competencies (not student attitudes or beliefs).
- Builds in meaningful, demonstrable developmental progressions for each competency.
- Integrates and indeed emphasizes cognitive competencies across all domains.
- Assesses mastery across multiple comparison points and learning settings.

We hope that this review by KP Catalysts encourages more educators to consider and adopt the XQ Competencies—and to join with XQ in a movement to reimagine high school teaching and learning. In the words of the review's authors, "The XQ Competency Rubric is a hidden gem." We hope it will remain hidden no longer! The world is changing rapidly, and students need high schools that prepare them for the challenges ahead and help them grow as XQ Learners. The XQ Competencies can help make that vision a reality.



XQ educators demonstrating the XQ Competency Cards at the Carnegie Summit. (Photos courtesy of the Carnegie Foundation.)



XQ is collaborating with researchers and educators to create and build a suite of tools to help teachers effectively bring the XQ Competencies to their classrooms. Learn more about how teachers are using them, with examples, by scanning the QR code.

The XQ
Competencies:
A Comparative
Review of
Leading Student
Learning
Frameworks

Karen Pittman and Merita Irby

Overview

The XQ Student Performance Framework (XQ SPF) defines student success not by test scores or Carnegie Units, but by the achievement of meaningful outcomes across academic content, cognitive skills, and social-emotional competencies. The framework provides a new way of “doing school”—from the design of student-level learning experiences to assessment of student learning and credentialing (see Math Badges, below) to an XQ Transcript that certifies students’ successful acquisition of accredited skills and knowledge for graduation. The XQ SPF is designed to work in any state, in any school, and in any outside-of-school education setting and is designed to integrate with any existing state content standard regime.

At the core of the XQ SPF are the XQ Competencies. Drawn from research and professional expertise, these competencies align with the five XQ Learner Outcomes to articulate a series of skill-based, cognitive, and social-emotional progressions. These competencies offer a new way to assess, document, and certify student learning, reframing core content in terms of active learning and mastery. Further, they build out areas of learning missing from existing standards regimes and curricula—like civics and arts. (See Appendix 1 for the full framework).

The XQ Competencies are designed to be an actionable tool accessible to all members of the learning community—teachers, students, families, and local partner organizations and businesses. Most importantly, each of the progressive indicators that bring the 37 competencies to life are written in positive “I” statements that give the learners and educators an opportunity to place themselves accurately on the journey from emerging skill to skill mastery. These nuanced statements are much more than the simplistic never, sometimes, usually, always that typify many progressions. They are increasingly complex statements of effort that chart progress across four levels: Emerging, Developing, Proficient, Applying. (See figure 12 for a sample progression.)

There are many competency frameworks currently in use by schools and out-of-school learning organizations. Like XQ, the creators of these various frameworks are interested in broadening the definition of student success both to

build understanding of what students need to flourish—now and as adults in an evolving future—and to serve as a wedge to expand and deepen student learning experiences.

XQ’s goal to provide a new way of “doing school” by developing an integrated package of design, assessment, credentialing, and certification tools could well be the game-changing force needed to move the country away from test scores and Carnegie Units. XQ’s partnership with the Carnegie Foundation for the Advancement of Teaching to “catalyze and construct a new education architecture” increases confidence that this goal is attainable.⁸

Uptake, however, will hinge in part on the confidence and ease with which educators can evaluate and align their current assessment frameworks and measures against the XQ Competencies. This alignment presupposes that there is no one right way to sort and bundle the complex amount of knowledge and number of skills needed to define the competencies required for youth success. This is especially true when success must be presented in a manageable number of broad outcome areas that have currency for learners, families, employers, and the public. Gaining confidence will require recognizing the irrevocable interrelatedness of academic, cognitive, and social-emotional domains of learning, as well as building approaches to instruction and assessment that foster student growth accordingly. It will also require an understanding of the content and focus areas of the social-emotional learning (SEL) curricula and assessment products on which most school districts now rely to bridge the gap between conventional academics and whole child education.

LEARNER OUTCOMES

Students need learning experiences that support them in achieving the XQ Learner Outcomes

— Holders of Foundational Knowledge

— Masters of All Fundamental Literacies



— Original Thinkers for an Uncertain World

— Generous Collaborators for Tough Problems

— Learners for Life

Purpose

The paper endeavors to place the XQ Competencies within the larger research context of social-emotional and cognitive development, and to outline the research evidence for the XQ Competencies associated with the cognitive, social, and emotional (CSE) XQ Learner Outcomes: Original Thinkers for an Uncertain World, Generous Collaborators for Tough Problems, and Learners for Life (see Table 1).

The options for comparison and validation of the CSE competencies are complex, and therefore the sole focus of this paper. We provide two arguments here: first, that the XQ Competencies meet the needs of students, educators, families, and other stakeholders who are increasingly demanding that students receive highly rigorous educational experiences that are relevant to their current experiences and to their post-secondary goals and aspirations; and second, that the XQ Competencies are

technically robust in their construction, providing logical, observable (assessable) learning progressions for constructs that derive directly from the scientific body of knowledge on adolescent learning and development.

While this paper focuses on the CSE XQ Learner Outcomes, we note that the XQ team is undertaking extensive research to pressure-test the competency progressions for the first two Learner Outcomes (Masters of All Fundamental Literacies, Holders of Foundational Knowledge) against academic content standards and is currently developing competency frameworks inclusive of core academic content (e.g., math) to enrich and integrate with the cognitive, social, emotional competencies.

In this paper, we place the XQ Learner Outcomes and Competencies in a larger context—both in terms of the research-derived body of knowledge about adolescent learning and in terms of the current state of practice regarding competency frameworks. We then zoom in to analyze the components of XQ’s CSE outcomes in relationship to this knowledge base.

Table 1. Overview of the XQ Learner Outcomes in relationship to XQ Competencies

XQ LEARNER OUTCOMES				
Holders of Foundational Knowledge	Masters of All Fundamental Literacies	Original Thinkers for an Uncertain World	Generous Collaborators for Tough Problems	Learners for Life
Curious people who are knowledgeable about the world. Its history and culture. Its sciences and underlying mathematics. Its biology and cultural currency.	Building the academic core necessary to prepare for college, career, and life. Critical readers.	Sense-makers—dealing with conflicting knowledge. Generative thinkers—creating many ideas and new situations.	Self-aware team members who bring their strengths. Talent-seekers who find the expertise of others.	Self-driven, self-directed. Curious learners—about themselves and the world.
Engaged participants who are key to creating a more just and functional democracy—who participate fully in all America has to offer.	Compelling writers. Mathematical and numeric thinkers. Data and visual thinkers.	Creative thinkers—reframing, imagining, and seeing problems from different perspectives.	Essential co-creators—because of what they bring, and how they show up. Inquisitive world citizens who seek out—and respect—diversity and diverse points of view.	Inventors of their own learning paths, careers, and lives.
Academic Competencies		Cognitive, Social, Emotional Competencies		

Process

We conducted an initial review of more than two dozen comparable frameworks and measures recommended by XQ Institute and other researchers. We developed an analytic approach with framing based upon our deep experience in the fields of youth development and learning, but found it difficult to compare the nominated frameworks and measures because of inconsistencies in terminology and taxonomy.

We turned next to the Explore SEL site.⁹ Explore SEL was constructed by Harvard's Ecological Approaches to Social Emotional Learning (EASEL) Lab as a part of the Taxonomy Project. EXPLORE SEL synthesizes the major frameworks and SEL skills most robustly described in research literature, in order to support educators, researchers, and others in the SEL field to connect and compare across SEL frameworks.

Using the Explore SEL online tools and a rudimentary in-house coding of the XQ Competencies, we conducted an exploratory comparative analysis of the XQ Competency framework against a select few of the tools included in the EASEL database (e.g., *Search Institute's Developmental Assets Profile*,¹⁰ *Rand's High School Survey of Student Engagement*,¹¹ *PEAR's Holistic Student Assessment*¹²). While this initial analysis showed consistency between the XQ Outcomes and Competencies and these prominent frames, the plethora of terminology and variable use of concepts highlighted the need for deeper exploration than was possible since XQ's Competency framework was not included in the EASEL site.

To understand the XQ Competency framework more authoritatively, we then engaged EASEL Lab to undertake a more formal coding process and to conduct a rigorous item-level analysis of the competencies against the frameworks and measures in the Explore SEL site. The XQ Competencies within the three XQ CSE Learner Outcomes were coded by two trained researchers using the EASEL Lab coding system, which was designed to analyze frameworks and measurement tools in order to identify specific social, emotional, and related psychological constructs including skills, behaviors, knowledge, values, and attitudes. Once analyzed in this way, the XQ Competencies were compared to the 40 frameworks in the Explore SEL database.

We rely heavily on EASEL Lab's technical report throughout this paper. The report visually demonstrates a longstanding conundrum in the field of SEL: inconsistent terms and constructs. The challenge is not just that the field has too many terms to refer to the same thing. Terms are also bundled and clustered into broader constructs that have overlapping components under different headings. Further, general constructs (e.g., skill, attitude, knowledge, competency) are often used interchangeably. EASEL Lab addresses this problem by acting as a neutral translator, coding all frameworks against their coding system so that they can be transparently compared to each other.

We further explored these definitional and framework inconsistencies by conducting a review of the definitions and uses of SEL- and competency-related terms across the 40 frameworks used in EASEL Lab's comparison.

Structure

The paper has two sections:

Section One offers definitions of competency and examines how this construct relates to other common SEL terms. This section includes an analysis of how competency and the other SEL-related terms show up in the 40 frameworks on the Explore SEL site that were used for the comparative analysis by EASEL Lab.

Section Two provides an explication of the EASEL Lab Analysis Report. This section includes details on EASEL Lab's methodology, findings (both composite analysis against the 40 frameworks and comparative analysis to three popular SEL frameworks), research-informed opinions, and conclusions.

We close with a brief, high-level view of how and where the XQ Competency framework fits in the broader education reform/rethink/reimagine context occupied by K-12 innovators and adjacent youth development organizations.

Takeaways

One of the most distinguishing features of the progressive structure of the XQ Competencies is that this design ensures that the cognitive, social, and emotional competencies are embedded in every learning experience, integrated with the core academic competencies organized under Masters of All Fundamental Literacies and Holders of Foundational Knowledge (the first two XQ Learner Outcomes). While our charge was to focus on the cognitive, social, and emotional competencies, our conclusion, based on analyses of the XQ Competency progressions and the broader context into which it is being introduced, is that the XQ Competency framework is uniquely suited for the ambitious goal XQ has set for itself and the country because:

- The XQ Competency framework focuses on observable competencies (not student attitudes or beliefs).
- The XQ Competency framework builds in meaningful, demonstrable developmental progressions for each competency.
- The XQ Competencies integrate and indeed emphasize cognitive competencies across all domains.
- The XQ Competencies assess competence across multiple comparison points (e.g., different classes, learning settings).



A demonstration of the XQ Competencies at the Carnegie Summit. (Photo courtesy of the Carnegie Foundation.)

Our concern, however, is that the cacophony of constructs and terms in use across the field has created such an undisciplined space that the comprehensiveness and consistency of the XQ Competency framework may go unrecognized. The fields of adolescent learning and competency-based education suffer from a tendency to: 1) confuse skill development with competency development, 2) develop measures that combine learner perceptions and beliefs with skill growth, and 3) promote and measure SEL separately from academics. The XQ Competency framework effectively addresses all three of these barriers.

There will likely never be complete or universal agreement on when simple skills (e.g., writing) become complex skills (e.g., writing an argument, writing an explanatory essay) become a competency (e.g., writing a legal brief, writing a news report), or whether it is worth trying to change the general term used by the public (skills). What we can do, however, is highlight the fact that if our goal is to help young people be successful (competent) across a range of tasks, situations, and settings, we need to assess how they perform in those situations and settings in ways that are rigorous, relevant, and reliable.

The intentional integration of academic, cognitive, and social-emotional competencies in the XQ Competencies could bolster efforts across the country focused on centering competency in learner outcomes and educational practices.

Consider, for example, the Portrait of a Graduate model.¹³ PoGs provide a template for school districts across the country to customize more balanced, relevant sets of outcomes for their graduates that depend on, but are not centered exclusively on academic skills and content. Communities use this model to create their vision for the broader mix of skills and attributes needed to succeed in post-secondary education, work, and life using existing frames (e.g., 21st century skills) as a starting point. Panorama Education’s Comprehensive Guide to a Portrait of a Graduate compiled a list of frequently used terms, including creative and critical thinker, problem solver, solution seeker, lifelong learner, effective communicator, innovator, collaborator, ethical and global citizen, and dynamic leader.¹⁴ XQ’s three SEL-related learner outcomes (Original Thinkers, Generous Collaborators, Learners for Life) and related competencies (e.g., problem solver, effective communicator) are clearly represented in the list.

The potential value of the XQ Competency framework to this movement is worth noting:

Named emphasis on foundational academics. The first two XQ Learner Outcomes (Holders of Foundational Knowledge, Masters of All Fundamental Literacies) are implied but not directly stated in many of the Portrait of a Graduate models developed by communities. XQ argues that competency-based education will not be fully realized until the practices used to develop core knowledge and skills are addressed in tandem with “soft skills” practices.

Deep integration of academic standards and developmentally staged cognitive, social, and emotional competencies. Panorama offers tools to help districts gather valid and reliable data from students on their development of Portrait of a Graduate traits that align to CASEL competencies and are customized to be mapped to the traits a district selects. It also includes a college and career readiness platform that puts Portrait of Graduate data alongside other standard indicators to create a more holistic view.

These are useful stop-gap tools. But taking advantage of the momentum building up around competency-focused approaches and project-based (or place-based) learning will require tools that define and progressively measure learner competencies related to a higher-level list of learner outcomes, inclusive of the fundamental competencies most people associate with school.

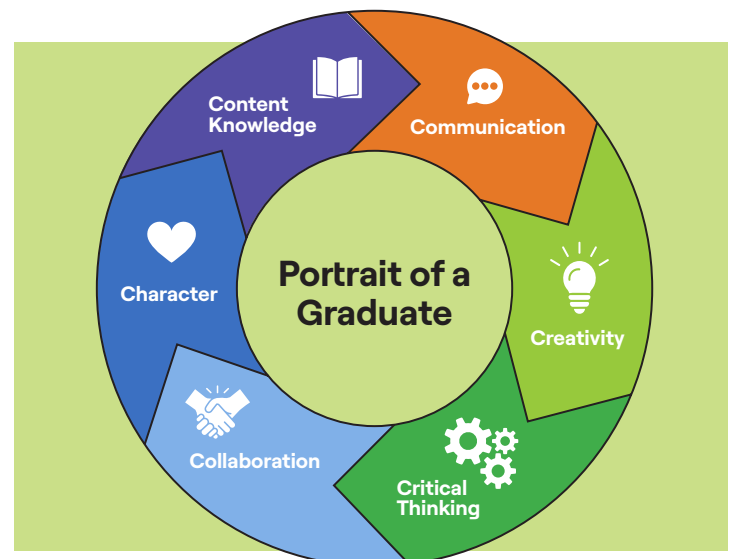


Figure 2. COEUR Competencies. Portrait of a Graduate example courtesy of Coeur d’Alene, Idaho

SECTION ONE:

Defining Competency

The demand for competency-based education (CBE) is growing. But what competencies do learners need to develop in order to be ready for further education and training, the workforce, and community and civic life?

The Institute of Education Sciences (IES)—the nation’s leading source for rigorous, independent education research and an independent, nonpartisan arm of the U.S. Department of Education—defines competency-based education as “educational practices that emphasize mastering the content, rather than receiving credit that corresponds to a specified number of hours in the classroom.” IES highlights four common practices:¹⁵

- specific and measurable learning targets
- multiple opportunities for students to demonstrate that they have met those learning targets
- flexible pacing and learning opportunities
- individualized support based on each student’s needs

IES lifts up competency-based education as the approach most aligned to the science of learning, and most aligned to the purpose of education: to prepare all students for the dynamic learning, career, and civic environments they must navigate as adults.

Yet it is not only educational researchers and professionals who see the value in competency-based approaches. Parents, families, and the general public demand these educational practices as well, and have done so even before the pandemic. For example, the 2022 Purpose of Education Index,¹⁶ conducted by Populace, a Boston-based think tank, finds that the public in general believes:

Individualized Education Is the Future, One-Size-Fits-All Is the Past: Respondents not only deprioritized one-size-fits-all approaches to K-12 education (e.g., evaluating students through standardized tests, providing every student the same amount of support and resources, etc.), they also actively prioritized attributes that enabled education to be

tailored to meet each child’s needs (e.g., allowing children to learn at their own pace, providing unique supports, etc.).

Practical Skills and Outcomes Should Be the End Goal:

Respondents reported developing practical skills as the number one priority for education outcomes and consistently prioritized practical, tangible skills and outcomes over lofty ideals and other short-term goals. They also ranked developing character (e.g., honesty, kindness, integrity, ethics) as a top priority.

The Cascade of Practical Skills Lists

The public is most comfortable when educators describe the specific types of skills that help young people achieve their goals through practical, relevant learning experiences. But, such lists of skills can be endless, the ways in which they have been categorized are inconsistent, and the global terms frequently used (SEL, life skills, 21st century skills, durable skills) are confusing at best and non-starters for some (e.g., the SEL backlash).

Business leaders are certainly pushing for specificity. In 2022, America Succeeds partnered with Emsi Burning Glass to conduct a comprehensive analysis of more than 82 million job descriptions across 22 occupational sectors to catalog and quantify the top 100 specific non-technical skills employers are looking for.¹⁷ They identified 100 specific attributes grouped into 10 categories (see Figure 2). They coined the term *Durable Skills* (an alternative to *soft skills*) to emphasize the foundational importance these skills have to any job. Nationally, they found that 7 out of ten most requested skills in job postings are Durable Skills, with the leadership and communication competencies in the highest demand. See Table 2 for a list of the top ten durable skills and how often they showed up in job postings.

“The High Demand for Durable Skills” report’s conclusion:

“Whether or not a student obtains a postsecondary credential, this research underscores the critical role of these skills in moving into and along job pathways. As we look toward economic recovery and meeting the challenge of building a diverse, inclusive workforce, we believe better integrating Durable Skills in K-12 education will help ensure a broader group of learners ultimately find success in their careers and communities.”

The education field is much closer to consensus on how to articulate the core components of a competency-based education *approach* than it is on how to define, measure, and message the actual core competencies that ensure learners are ready for further education, multiple jobs if not careers, and life in the 21st century. Yet these two efforts must go hand in hand to maximize results.

Competency vs. Skill Development

There is general agreement that *competency* is more than *skill*. The “Foundations for Young Adult Success” report by the UChicago Consortium on School Research explained the difference with this example:

“...being able to write is a skill. However, being able to write a persuasive letter to the editor about a contentious issue is a competency—it draws on knowledge about the topic, an understanding of one’s values and the message one wants to convey, an awareness of the audience, and a belief that one can persuade others. It requires organizing these various components in a particular combination and applying them to meet the demands of a specific task for a specific purpose, making it a competency rather than a skill.”¹⁹

The National Institute of Health’s Office of Human Resources defines competencies as “the knowledge, skills, abilities, and behaviors that contribute to individual and organizational performance.”²⁰ The editorial team at Indeed.com offers a similar definition: “competencies are the combination of skills, knowledge, and the ability to apply those skills and knowledge to practical situations.”²¹

These definitions, and others, have two things in common:

- 1. Competencies are a complex combination of other simpler constructs (e.g., knowledge, skill, ability) brought together to respond to a particular situation.**
- 2. Competencies are best evidenced in the behaviors that emerge in specific situations.**

Extrapolating from these two points helps connect back to the value of competency-based approaches. Having specific “learning targets” achieved through more flexible pacing, more opportunities to master, and more

individualized supports will certainly improve the percentage of learners who meet the target. But truly relevant, transformative learning is not often experienced in core academic classes where the emphasis is on mastery of discrete skills, specific academic content, or abstract knowledge.

Competency as a Determinant of Behavior (Outcomes)

Competency is one’s overall capacity to perform a task. Behavior is the actual performance of the task, which can be influenced not only by your competency but by your attitude (e.g., whether you think the task is important), beliefs (e.g., whether you think the task is right, fits with your values), and your actions (e.g., whether your beliefs or attitudes have caused you to act in a specific way before when faced with similar tasks).

A hierarchical relationship exists between a competency and its components (skills, knowledge, ability). But competencies are not merely assemblages of skills. Competencies consist of other constructs as well—attitudes and beliefs (or values). These attitudes and beliefs (along with the construct of previous actions) are linked to the broader construct of behavior.²²

In workplace settings, this distinction is often more intuitively understood. Behaviors certainly inform competencies, and competencies influence the manifestation of behaviors. But behaviors and competencies can—and should—be analyzed separately when attempting to understand a student’s (or a worker’s) learning and capability.

This distinction is extremely relevant for schools for two reasons. First, learners, unlike employees, are not expected to have fully mastered a robust set of competencies. They are still developing both competencies and also their sense of identity and agency. Adolescent behavior is “jagged.” Adolescents often make great strides in their learning, then fall back as they encounter new situations and find new applications for what they have learned, then leap forward to new heights of conceptual understanding and identity integration.²³ Second, similar to employees, marginalized populations are more likely to hold back in

showing or using all of their competencies, either because they find the opportunity presented threatening or irrelevant to their lives, or because they are not motivated to do their best in settings in which they feel they don't belong;²⁴ or because they are not understood.^{25,26} This phenomenon has particular import for the creation of equitable learning spaces, and indeed there is some evidence that competency approaches bolster performance for traditionally marginalized groups in some settings or subjects.^{27,28}

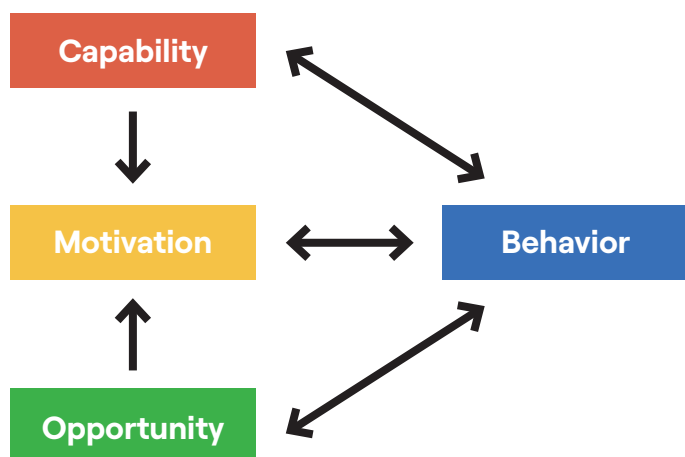


Figure 4. *The COM-B System: A Framework for Understanding Behavior* from Susan Michie, Maartje M van Stralen, and Robert West.

Competencies vs. Outcomes

Schools and workplaces run on performance measures. The fact that competency contributes to but does not completely determine observable behaviors is depicted in The COM-B Model (Figure 4), one of the cornerstones in behavioral psychology.²⁹

The COM-B model also makes evident that competency (or capability) is only one determinant of behavior, consistent with the dynamic model depicted above, and with the UChicago Consortium for School Research's three components of youth success: a broad set of competencies, an integrated identity (which can motivate or demotivate in different settings), and a strong sense of agency (which allows one to assess and seize opportunities).³⁰

These frameworks, in their similarity, argue for the same transformational shift in education: building educators' capacity and motivation not only to use competency-

based education practices but to link those practices to the advancement of learning targets that parents, youth, and employers believe are critical for young adult success. This requires practice change—from teacher training through classroom practice—in order to give educators the tools, training, and space needed to shift their focus from measuring discrete content knowledge and skills to measuring competency as evidenced in behaviors demonstrated in multiple situations. This shift will require drastic effort to achieve at scale, but a necessary first step to facilitate that change entails increasing our understanding of the differences between the terms that are synonyms for or associated with *competency*.

An Exploration of Terms

The big categories. To gain a fuller understanding of how the terms “competencies” and “behaviors” are defined and used—as well as how these terms are used in relationship to each other—we compiled a list that included the supporting terms in the diagrams above plus other commonly used terms related to these concepts. We then compiled and compared the dictionary definitions from three sources (Websters, Oxford, and Dictionary.com) and scanned academic and applied research studies, looking in particular for those with the express purpose of reviewing or analyzing terms. (The dictionary definitions can be found in Appendix 2. A summary of related terms found in applied research studies can be found in Appendix 3.) See Table 3 below for the commonly used terms from this research review.

Table 3. *Most Commonly Used Terms From Research Review*

Abilities/Aptitudes	Habits
Actions	Identity
Agency	Knowledge
Assets	Mindsets
Attitudes	Perceptions
Behavior	Self-Regulation
Beliefs	Skills
Character	Traits
Competency	Values
Dispositions	

These are “big” concepts that are often used to cluster other terms and, in combination, to cover overall concepts (e.g., attitudes, skills, behaviors). Lending to the confusion, the hierarchy (or mapping) of the terms is not clear. Depending upon the framework or definition, terms are often used as descriptors or components of others. For example, one critique of “soft skills” explains:

“Whereas dispositions are, in large part, hardwired in individuals and therefore much less pliable, skills are actions we take based on knowledge we possess. The terms trait and disposition—functionally synonymous—are individual qualities. Relatively stable over time, traits affect behavior ... Essentially, dispositions are qualities people possess; they inform what people do using their skill sets.”³¹

We used the interactive online Explore SEL tool to produce a word analysis of the 40 practice-oriented frameworks the EASEL Lab team was also using for the XQ Competency framework comparative analysis. We found that the circularity present in the research world is equally present in applied practice. With the notable exception of the term “beliefs” (which is closely related to “values”), all of the

terms found in the research review were in use in the EASEL-reviewed frameworks.

A summary chart mapping the 19 frequently used terms from the research review against the practice-oriented frameworks can be found in Table 4 below. Not surprisingly, the term “skills” has the highest presence, being mentioned in nearly three-fourths of the frameworks (28 of 40). Self-regulation, noted frequently within skill categories, had the next highest presence at 19. Other top appearances included Cognitions (15) Competencies (13) and Knowledge (12).

Frequency drops for the other terms, with a handful being used five to eight times (“agency,” “attitudes,” “behaviors,” “identity,” “mindsets,” “values”) and the remaining terms mentioned four times or less.

For the most part, these terms are not defined in the frameworks, with the exception of several frameworks developed by research groups (e.g., ACT Holistic Framework, Clusters of 21st Century Competencies, the 5Cs Model of Youth Development, Young Adult Success). See Appendix 3 for examples.



The XQ Competency Cards help teachers plan lessons that lead to the XQ Learner Outcomes. (Photo courtesy of the Carnegie Foundation.)

Table 4. Frequency of Term Usage Across SEL Frameworks Selected by EASEL Lab

	Abilities	Actions	Agency	Assets	Attitudes	Behaviors	Beliefs	Cognitions	Competencies	Dispositions	Habits	Identity	Knowledge	Mindsets	Perspective	Self Regulation	Skills	Trails	Values	frequency
21st Century Learning																				2
ACT Holistic Framework																				8
Big Five Personality Traits																				1
Building Blocks for Learning																				6
CASEL																				4
Character Lab																				4
Clover Model																				4
Clusters of 21st Century Competencies																				4
Developmental Assets																				7
EDC Work Ready Now!																				4
Emotional Intelligence																				4
Employability Skills																				4
EU NESET Framework for Social and Emotional Education																				0
Habits of Mind																				5
Head Start																				6
IB Learner Profile																				2
IRC Social and Emotional Learning Competencies																				3
K-12SEL Standards (Anchorage)																				3
K-3SEL Standards (Connecticut)																				8
Kenya BECF Core Competencies for Basic Education																				1
Kenya TVET Values and Life Skills (VaLI)																				3
KIPP																				2
LEGO's Skills for Holistic Development																				2
MELOO MODEL Framework																				4
MESH																				3
OECD																				3
Pratham Life Skills Framework																				4
Preparing Youth to Thrive																				1
Room to Read Life Skills Education Learning Outcomes																				4
Sesame Workshop Global Framework for Learning																				3
Singapore Framework for 21CC and Student Outcomes																				4
Social, Emotional, and Ethical (SEE) Learning Framework																				5
The Five Cs Model of Positive Youth Development																				1
The PRACTICE Model																				2
UNICEF India Comprehensive Life Skills Framework																				1
UNICEF MENA Life Skills and Citizenship Education																				3
Vision of the Haitian Child in Society																				3
WHO Skills for Health																				4
Young Adult Success																				8
YouthPower Action																				4

This chart was created based on EASEL Lab's Thesaurus (<http://exploresel.gse.harvard.edu/terms/>). Terms were designated as present if they were there in whole, part, or with other words. For example: cognitive was included for cognitions; competent and competence were included in competencies; "ability to express emotions accurately..." was included for abilities. Additionally, if the term was included in the core of a name of a framework, it was counted as present. For example: habit and mindset are present in the Habits of Mind framework. With the most entries, skills were usually further specified (e.g., social, emotional, cognitive, physical, creative).

SECTION TWO:

XQ Competency Framework Analysis

Background

The Ecological Approaches to Social Emotional Learning (EASEL) Laboratory, led by Dr. Stephanie M. Jones of the Harvard Graduate School of Education, explores the effects of high-quality social-emotional interventions on children, youth, and the adults who work with them in school and community settings.

The Lab’s Taxonomy Project exists to bring greater precision and transparency into the SEL field and to facilitate more effective translation between research and practice. The Lab uses an analytic process, based on a comprehensive review of the developmental and prevention science literature (updated and revised repeatedly over the past 10+ years) to pressure test frameworks and constructs such as the XQ Competencies against current scientific knowledge of the science of adolescent learning.

EASEL activates this analytic process to look inside documents such as frameworks and measurement tools to

tag them for specific social, emotional, and related psychological constructs including skills, behaviors, knowledge, values, and attitudes across six broad domains and 23 sub-domains (see Figure 5). The domains come from an analysis of SEL research and practice and were identified and refined through a review of the literature that links social and emotional skills to positive child outcomes, as well as a content analysis of common SEL frameworks, programs, and measurement tools currently being used to guide, build, and assess skills in practical settings.^{32,33} (Note: In our opinion, the distinctions made between cognitive, social, and emotional skills and values, and perspectives and identity are, in and of themselves, valuable, much-needed additions to the field.)

To date, the coding system has been applied to 91 frameworks, 25 programs, and 34 measures. The Lab created Explore SEL,³⁴ an interactive site designed to help practitioners and researchers navigate the tools and frameworks by providing information and tools that summarize and compare.

As noted earlier, the most direct and comprehensive route to reviewing the competencies related to three of the XQ outcomes—specifically, Original Thinkers for an Uncertain World, Generous Collaborators for Tough Problems, and Learners for Life—was to juxtapose them against the extensive body of knowledge curated and captured by the EASEL Lab.

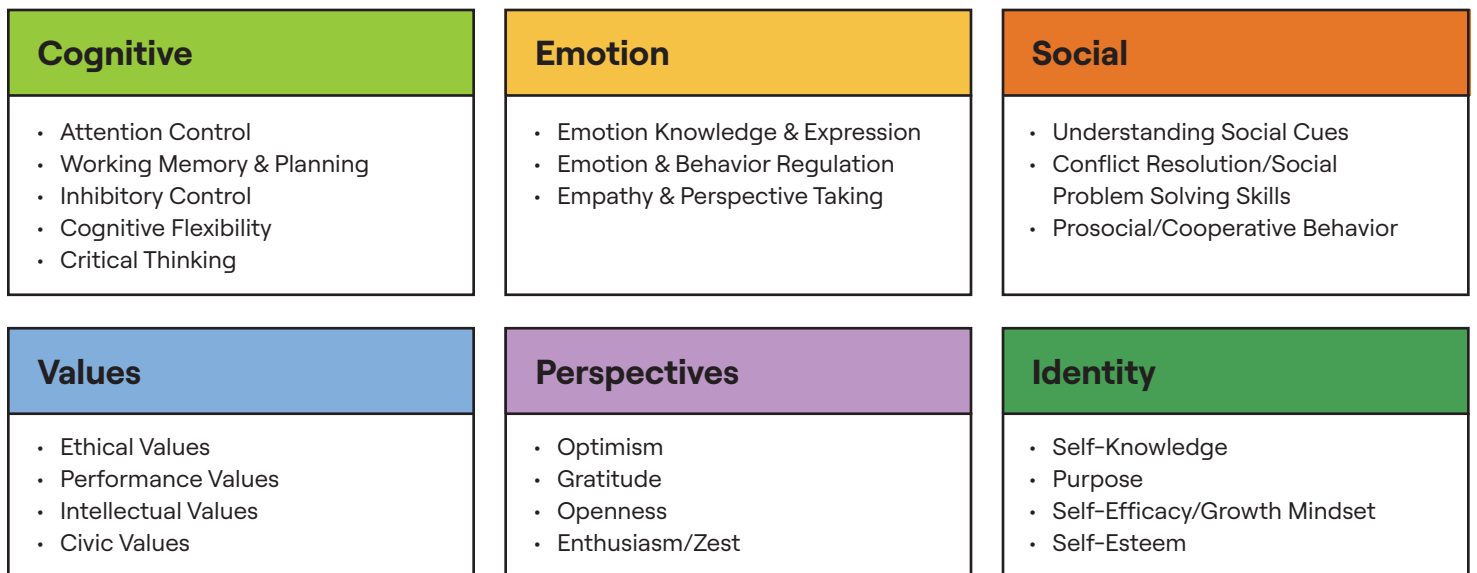


Figure 5. EASEL Lab Domains and Sub-Domains

Methodology

The XQ cognitive, social, and emotional competencies (three Outcomes containing 24 competencies and 70 sub-competencies) were coded by two trained researchers using the EASEL Lab coding system. Each statement within the competency received a benchmark code if a coder determined that the statement matched the skills or behaviors described in the associated benchmark code. The two coders then discussed the coded results and came to a consensus on one set of coded materials for the coder pair. The result is a set of codes for each statement within the XQ Competency Rubric. This data can be examined for each statement and also aggregated for each competency and learner outcome.

The domain and sub-domain focus of the XQ Competency Rubric is calculated by determining the percentage of total codes applied to the framework that are from each domain and sub-domain of the EASEL Lab coding system. While the coding data for the XQ Competencies were created for this project, the comparison frameworks were coded as a part of previous EASEL Lab projects.

Findings

Domain Coverage. As shown in Figure 6, the competencies associated with the three SEL-related XQ Learner Outcomes mapped into five of the six EASEL Lab domains: Cognitive, Emotion, Social, Values, and Identity (see Figure 6). Cognitive is the most observed domain (39%), with nearly twice as many codes as the next most frequent domains (Values, 21%, Social, 20%).

The Perspectives domain (e.g., gratitude, optimism, openness) is not represented in the XQ Learner Outcomes. The EASEL team notes that this is a smaller domain within the coding system that does not appear as frequently in frameworks, and when it does appear it is typically only a small percentage of the codes.

Learner Outcomes Analysis. As shown in Figure 7, the Cognitive domain is most emphasized in the Original Thinkers outcome (69% of codes were related to creative thinking, critical thinking, problem seeking, and problem solving). But critical thinking is an important aspect of the competencies profile for Generous Collaborators (22%) and Learners for Life (27%). The Social (35%) and Values (31%) domains were most emphasized for the Generous Collaborators learning outcome. The coding for Learners for Life was evenly spread across the five domains.

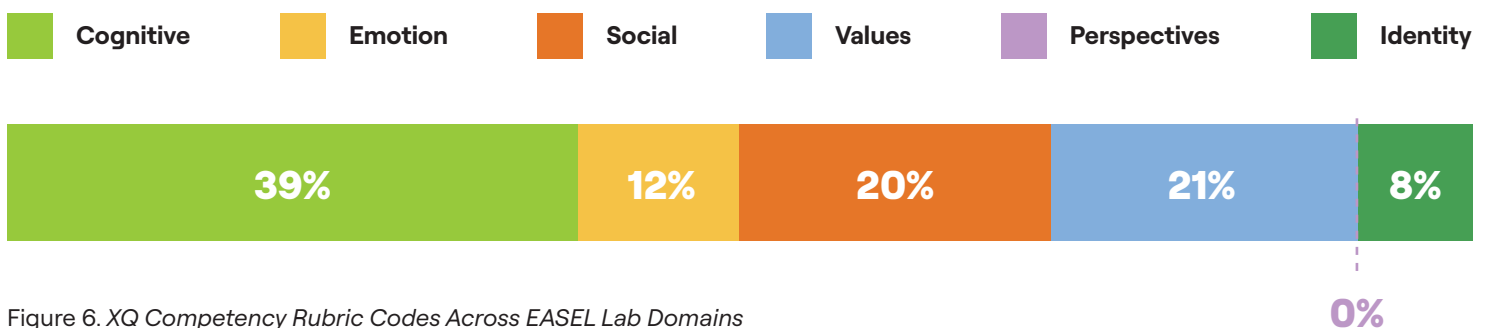


Figure 6. XQ Competency Rubric Codes Across EASEL Lab Domains

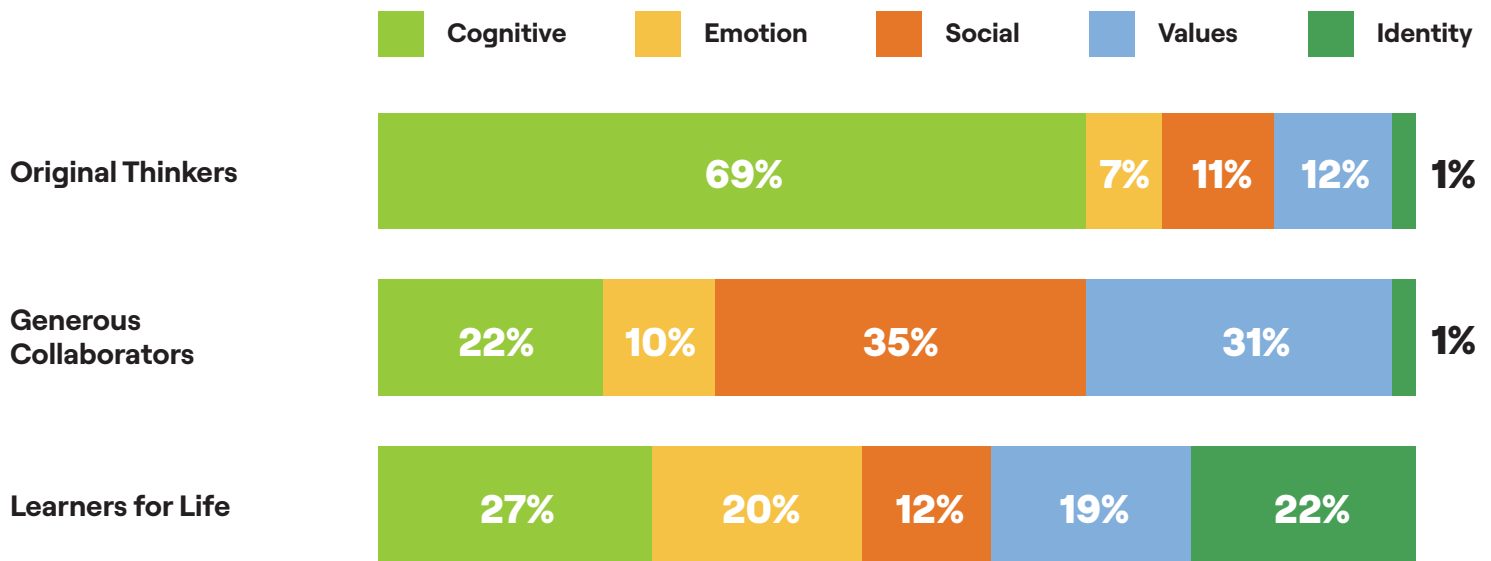


Figure 7. XQ Learner Outcomes Focus within the EASEL Cognitive Domains

The EASEL Analysis Report notes that these different mixes reflect intentional efforts to develop more complex learner outcomes. The fact that Generous Collaborators, for example, includes EASEL’s prosocial and cooperative behavior sub-domains, but also includes critical thinking and, to a lesser extent, ethical and civic values, indicates that this learner outcome goes beyond simple collaboration and extends to include reasoning and being thoughtful of others and the community as a part of collaborating. They highlight an example (see Figure 8).

The EASEL team made a similar observation about Learners for Life, which not only coded across all five domains found in the XQ Competencies, but also coded on 15 of the 23 sub-domains. The sub-domains more generously represented are intellectual values, critical thinking, and emotional knowledge and expression. Intellectual values and critical thinking are intuitively a part of being a lifelong learner. In the team’s opinion, emotional knowledge and expression reflect a self-awareness aspect of this learner outcome that makes it more multi-dimensional.

An Individual Statement from the XQ Competency Rubric

I identify the facts, assumptions, and biases that form my perspective on a given issue/ circumstance, analyze the relationship between them, and analyze them for any roots in racist (such as white supremacist) culture, heteronormative beliefs, or thinking driven by traditional views on gender roles.

This is an Applying statement (highest level) from Social Awareness, with the Generous Collaborators Outcome.

EASEL Lab’s Comment:

"This statement includes elements of critical thinking ('I identify the facts, assumptions, and biases that form my perspective on a given issue/ circumstance') and ethical values ('analyze them for any roots in racist (such as white supremacist) culture, heteronormative beliefs, or thinking driven by traditional views on gender roles'). This integration of these sub-domains is persistent throughout the learner outcome."

Figure 8. EASEL Lab Comment on an Example Statement from XQ Competency Rubric

The EASEL team’s final observation based on their sub-domain review of the three outcome areas was about the focus on critical thinking within the Cognitive Domain.

“Most of the Cognitive skills in the XQ Competency Rubric are from the critical thinking sub-domain. Executive functions (attention control, working memory, inhibitory control, and cognitive flexibility) are not emphasized to a large extent.”

More specifically, attention control and inhibitory control are not present at all in the three XQ Learner Outcomes reviewed and working memory and planning skills are only found in Learners for Life.

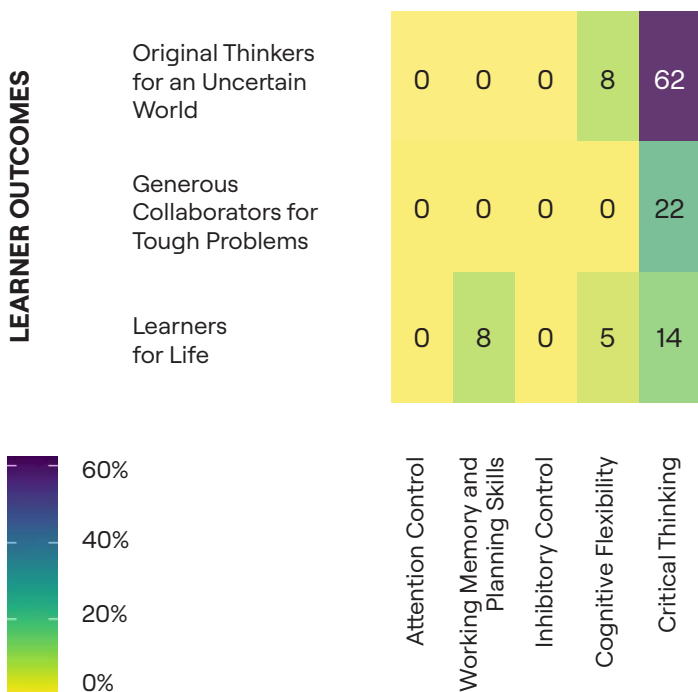


Figure 9. Cognitive Sub-Domains by Learner Outcome



The XQ Competencies are broken down into domains. (Photo courtesy of the Carnegie Summit)

XQ Competencies Analysis

While there are phrasing differences, most researchers and practitioners would generally agree that EASEL’s six domains are distinct—representing different constructs. And while they might lobby for additions, most would also agree that the sub-domains included under each domain fit.

But as described in Section One, competencies are complex.

The XQ Learner Outcomes and Competencies were designed to fuel wholesale changes in the education architecture. We have already learned that one EASEL domain, Perspectives, is missing from the XQ Competencies. We assume this was intentional. We also assume that the emphasis on the Cognitive domain and in particular critical thinking (present in 23 of the 24 coded competencies) was intentional since bringing this domain into the SEL space is consistent with XQ’s goal of creating a throughline between academic, social, and emotional domains. What we will be looking for at this level of analysis is further evidence of the internal integrity of the competencies as evidenced by their inclusion of expected EASEL sub-domains. The EASEL Analysis Report is very strong here:

“In the three coded learner outcomes, there are 24 competencies (e.g., generating ideas, empathy, self-regulation). Many of the relationships between competencies and sub-domains are expected. For example, 82% of codes applied to Collaboration and 76% of the codes applied to Relationships are in the Prosocial and Cooperative Behavior sub-domain. Other competencies are comprised of many sub-domains, but are equally expected, such as Sharing Ideas being comprised of Prosocial and Cooperative Behavior, Critical Thinking, and Intellectual Values.

Some nuances of the competencies can be seen through the coding. For example, the Problem Seeking competency (“Identify and define a problem”) emphasizes Critical Thinking, as expected, but also includes Empathy and Perspective Taking (e.g., I can recognize when a problem I’m facing might be shared by others), and Ethical Values (e.g., I consider the ethical and practical implications of my ideas and actions). This demonstrates that Problem Seeking in the rubric relies on how one interacts with others, rather than only looking inward to find opportunities to improve a situation.”

Sub-domain emphases and gaps. Critical thinking is the sub-domain that is emphasized in the most competencies. Every competency includes critical thinking with the exception of Self-Advocacy. There are sub-domains that do not appear in any of the 24 competencies—two in the Cognitive domain and five in Perspectives. They are:

Cognitive Domain:

Attention Control
Inhibitory Control

Perspectives Domain:

Understanding Social Cues
Optimism
Gratitude
Openness
Enthusiasm/Zest

The EASEL Lab report does not pass judgment.

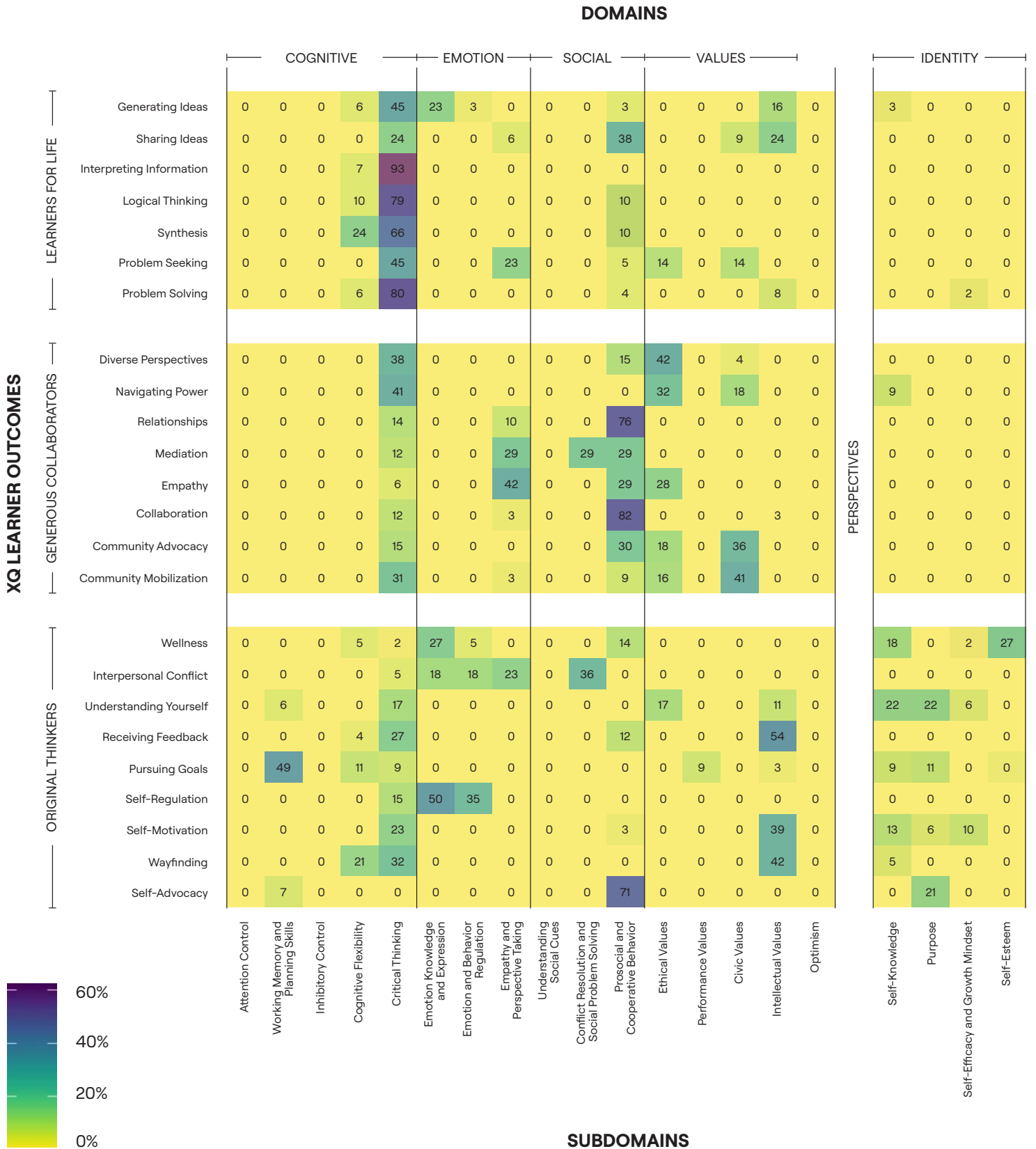
“The exclusion of the sub-domains is not indicative of a shortcoming of the framework; every framework prioritizes skills and is not always intended to include every SEL domain and sub-domain, but if these SEL sub-domains were intended to be included, the competency statements may need to be revisited.”

As noted earlier, we inferred some intentionality in not including the Perspectives domain and subdomains. (Only one entry appeared under Perspectives, relating receiving feedback to openness.) We recommend that XQ respond to these omissions, either with explanations or statement adjustments.



The color-coded cards break down each Learner Outcome into a student competency. (Photo courtesy of the Carnegie Foundation.)

Table 5. XQ Learner Sub-Competencies by EASEL Sub-Domains



Graying out the perspectives domain, the three XQ SEL outcomes have sub-competencies that code into all five of the remaining EASEL domains looking across the rows. In addition, they come very close to having at least 10 percent of their sub-competencies in each (the main exception is Original Thinkers). This feels like a very achievable and potentially important benchmark if one goal is to demonstrate the complexity of sub-competencies needed to achieve mastery in any XQ Outcome.

It might be useful for XQ to assess the extent to which any of these five domains, beyond Cognitive, are found in the Competencies associated with the first two XQ Outcomes (Holders of Foundational Knowledge and Masters of All Fundamental Literacies) since it could strengthen the underlying connections.

Overall Comparison to Leading Frameworks

The XQ Competency framework has been developed for a specific age group (high school learners) and purpose (catalyzing a new education infrastructure). But it sits among a broader group of frameworks and assessments designed to support a commitment to social and emotional development, child education, or college and career readiness. The EASEL report used 40 of the frameworks available in Explore SEL to determine the extent to which XQ Competencies were similar to or different from other frameworks.

The first thing that stood out was XQ’s emphasis of the Cognitive domain. Not only does XQ lead with the Cognitive domain (39%, nearly twice the percentage of the other frameworks), the number of codes in this domain are

almost twice those in the next highest areas (Values, 21% and Social, 20%). These percentages, however, are about the same as those in the other frameworks (see Figure 11).

Given the subdomain coding shared above, it is likely that much of the 15 percentage point difference between the combined codes of the three SEL-related outcomes in the XQ Competency Rubric and the average domain focuses of the other SEL-related frameworks is the heavy emphasis on critical thinking which permeates all three outcome areas.

The EASEL Lab team conducted two subgroup analyses, one separating early childhood/early elementary frameworks from adolescent/young adult frameworks, and the other separating U.S.-based from international frameworks, taking advantage of the breadth of their database. The story remained the same: 1) no significant differences between the sub-groups, 2) the same big differences between them and the XQ framework.

The EASEL team then ran comparison analyses against the individual frameworks. The findings underscore the amount of sausage-making that goes into the development of different frameworks and assessments, even if they are seen as somewhat interchangeable by practitioners. Again, we quote the Report directly:

“While the average of framework sub-groups tend to have similar averages for the domains, there is a wide range in how individual frameworks emphasize each domain. No domain is included in all 40 frameworks, and only about half of the frameworks (21) include all 6 domains.”

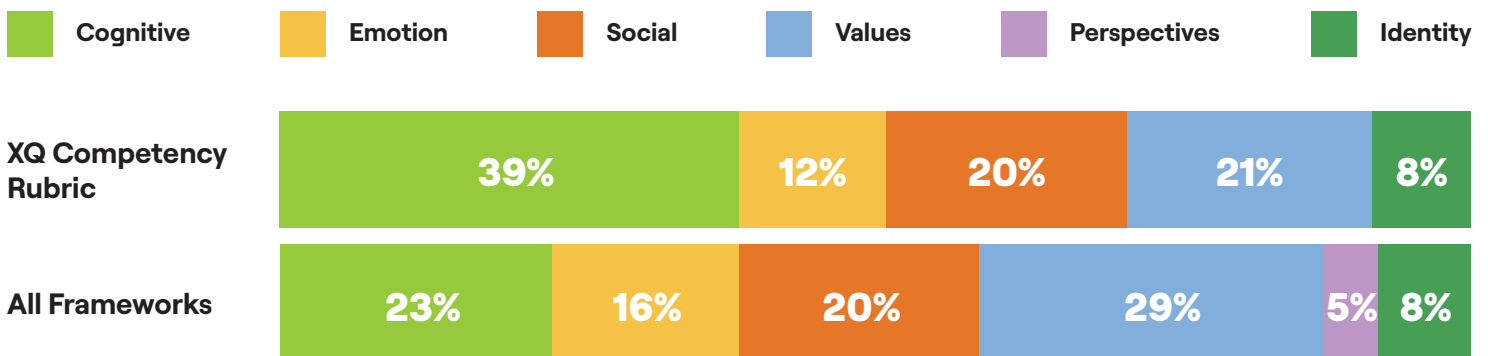


Figure 10. XQ Rubric Coding Across EASEL Domains Compared with All Selected EASEL Framework

In Table 6 we added a column to the EASEL Report to highlight one more point. The XQ Competencies framework shows balance:

- It is below the maximum in every category.
- It is within ten percentage points of the average in all but one category (Cognitive, 16%). It achieves this goal even with no codes in Perspectives because of the low usage of this domain by most frameworks.

The 40 frameworks and their domain focus percentages are shown in Figure 11 on the next page.

Table 6. Domain Score Ranges Across 40 Frameworks

EASEL Frameworks				XQ Scores
SEL Domain	Min	Ave	Max	
Cognitive	0%	23%	44%	39%
Emotion	0%	16%	87%	12%
Social	0%	20%	45%	21%
Values	0%	29%	68%	20%
Perspectives	0%	5%	38%	0%
Identity	0%	8%	30%	8%

Comparative Analysis to Specific Frameworks

The EASEL team selected three common competency frameworks, each with distinct differences, for detailed review with the XQ Competency framework. The resulting charts provide a detailed map of those frameworks, and are included in the appendix for those interested in an exhaustive review of the similarities and differences (see Appendix 4).

The EASEL team selected:

- The U.S. Department of Education’s Office of Career, Technical and Adult Education (OCTAE) Employability Skills Framework.
- The Partnership for 21st Century Skills (P21) Framework for 21st Century Skills.
- The Collaborative for Academic, Social and Emotional Learning’s CASEL Framework for Social and Emotional Learning.

The EASEL Report includes very detailed charts comparing the 24 XQ Competencies to the actual terms used in each of these frameworks. The XQ/CASEL Comparison Chart is included in a sidebar on page 28 as an example. CASEL has five broad competency areas, making the chart a bit easier to digest. The Comparison Charts and accompanying narratives for the other two frameworks are in Appendix 4.

The coding for each competency is compared to skills and competencies in other frameworks. The result is a value between 0 and 1 for each pair of competencies, with 0 meaning no overlap in codes and 1 meaning a complete overlap in codes. In other words, a 0 indicates that the competencies are completely different constructs and a 1 indicates that they are identical. Values below 0.2 are removed for readability, as they represent very little overlap.

The EASEL report sums up the takeaway from this exercise well:

“Comparing the XQ Competency Rubric to individual frameworks (CASEL, P21, Employability Skills) demonstrates how relationship between the competencies and skills can fit several patterns. Competencies sometimes overlap one-to-one with competencies in other frameworks, but often a competency in one framework cuts across the competencies of another. These tools can illuminate where competencies are aligned or where gaps might occur based on how the frameworks are defining them.”



Educators discussing the XQ Competencies. (Photo courtesy of the Carnegie Foundation.)

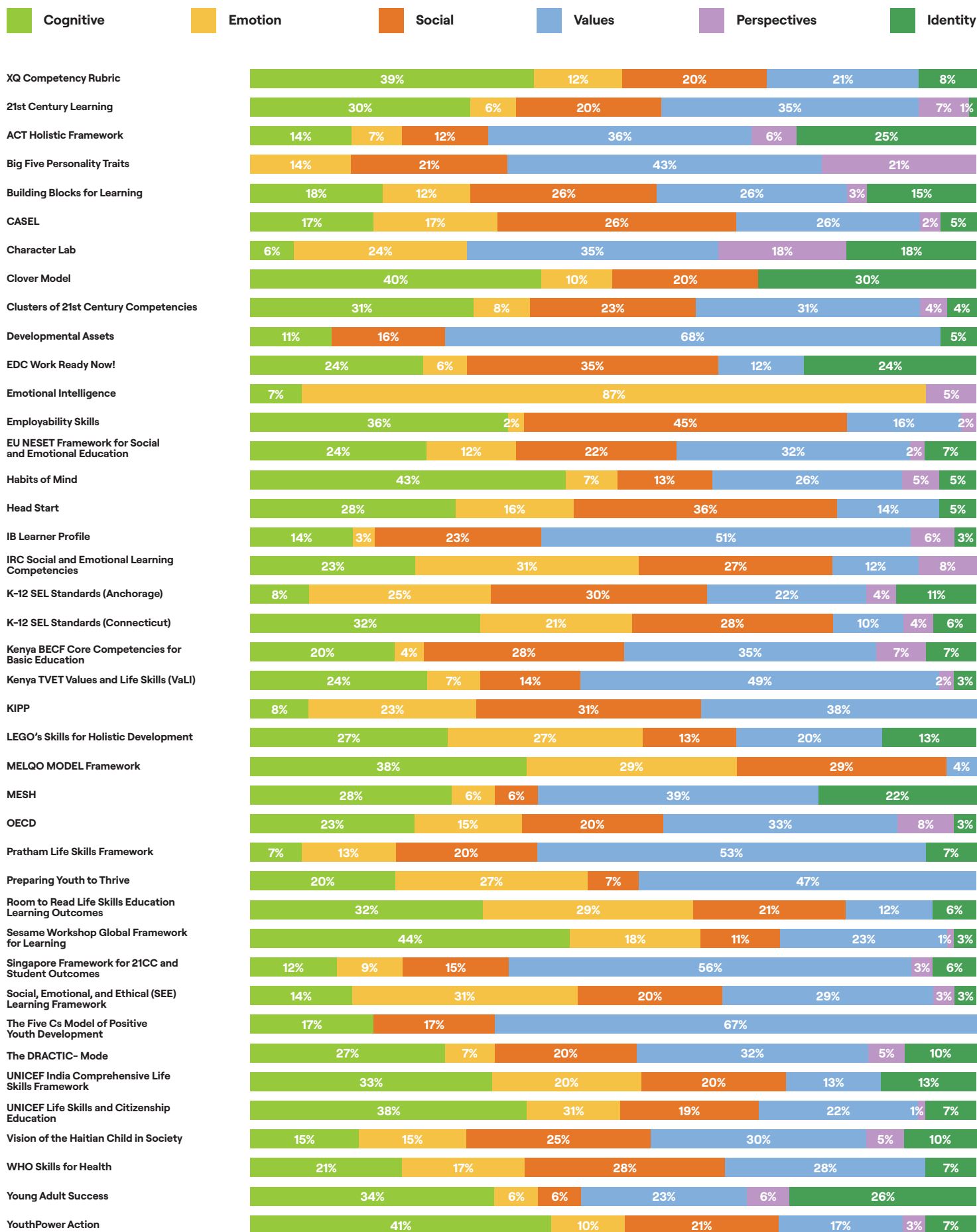


Figure 11. Forty Frameworks and Domain Focus Percentages

Table 7. XQ and CASEL Competencies Overlap on EASEL Codes

	self-awareness	self-management	social awareness	relationship skills	responsible decision making
Generating Ideas	0.39	0.26	0.26	0.21	0.42
Sharing Ideas		0.25	0.42	0.39	0.42
Interpreting Information					0.38
Logical Thinking				0.24	0.62
Synthesis				0.24	0.62
Problem Seeking		0.25	0.54	0.39	0.54
Problem Solving	0.28		0.21	0.26	0.54
Diverse Perspectives			0.36	0.49	0.67
Navigating Power	0.32				0.36
Relationships	0.23		0.39	0.22	0.39
Mediation	0.22		0.36	0.35	0.50
Empathy		0.25	0.58	0.28	0.58
Collaboration		0.25	0.44	0.28	0.44
Community Advocacy			0.36	0.49	0.67
Community Mobilization		0.25	0.54	0.39	0.54
Wellness	0.43	0.25	0.31		0.47
Interpersonal Conflict	0.30	0.24	0.24		0.33
Understanding Yourself	0.33	0.29			0.29
Receiving Feedback			0.21	0.26	0.54
Pursuing Goals	0.27	0.30			0.30
Self-Regulation	0.39	0.32			
Self-Motivation	0.46	0.26	0.32	0.20	0.32
Wayfinding	0.32				0.36
Self-Advocacy				0.22	0.26

EASEL Statement on XQ/CASEL Framework Comparison

“Competencies from both the XQ Competency Rubric and CASEL’s Framework for Systemic Social and Emotional Learning overlap in the coding from many competencies in the other framework. For example, CASEL’s responsible decision making includes codes that were applied to nearly all of the competencies in the XQ Competency Rubric. Only XQ’s self-regulation does not, which is more closely related to CASEL’s self-awareness and self-management. Because CASEL’s responsible decision making includes identifying problems, analyzing situations, solving problems, evaluating, and reflecting, it overlaps with the many critical thinking codes that were found throughout the XQ Competency Rubric. This indicates that this competency may be a component that cuts across many XQ Competencies, rather than a one-to-one relationship with another competency.

CASEL’s self-management overlaps with 12 of the XQ Competencies, and the two with the most overlap are Pursuing Goals and Self-Regulation, which are grouped together under Self Management in the XQ Competency Rubric. This indicates that there is some congruence in how this competency is defined. CASEL’s self awareness, on the other hand, overlaps with many XQ competencies, and those with the most overlap are not the two XQ Competencies grouped under Self Awareness. This indicates that there are differences in how these terms are used.”

Research-Informed Opinions

The purpose of this paper was not only to assess the completeness and consistency of the XQ Competencies against research-based domains and sub-domains. It was also to offer an opinion, based on the literature review and field scans, of the specific features of the XQ Competency Rubric that make it well suited to XQ's broader goal: "to catalyze and create a new education architecture."

There are two additional questions that we can answer with the EASEL data. (Note: The data is from the EASEL report. The opinions are ours unless explicitly attributed to EASEL.)

Does the XQ tool stand out as a strong example of a Competency Rubric?

- Do individual statements consistently use action verbs to ask about observable behaviors?
- Do individual statements reflect complex actions that require the use of multiple skills, knowledge, abilities, and values?
- Does the complexity of the tasks described in individual statements increase by proficiency level?

Does the XQ Competency framework stand out as a balanced tool given its bridging purpose?

- Does the focus across SEL domains meet the needs of whole child/youth development users?
- Does the emphasis on Cognition and, in particular, on critical thinking appeal to users of conventional academic measures?

Table 8. Average Number of Codes by Developmental Stage

Developmental Stage	Average Number of Codes
Emerging	1.7
Developing	2.3
Established or Proficient	2.6
Applying	3.1
Total	2.4

1. Developmental Progression: The Strongest Sign of a Competency Rubric

EASEL Lab was not asked to do a comparative analysis on the first question since the comparative data is not in their database. They did, however, provide data and statements to respond to the three sub-questions.

Overall, an average of 2.4 codes were applied to individual statements within the competencies. The number of codes increased as the proficiency level moved. The number of codes for the highest level statements (Applying) was 3.1, nearly double the number of codes for the first level (Emerging). (See Table 8). This progression suggests a strong, intentional approach to defining and measuring competency growth. Figure 12 is an example of the developmental progression in the statements associated with Diverse Perspectives under the Generous Collaborators Learner Outcome.

We asked EASEL Lab to provide us with a statement regarding how this intentionality compared with that found in other frameworks. Their response speaks volumes:

"The competencies in the XQ Competency Rubric are written as active statements of what the learner is able to do (e.g., 'I can identify,' 'I can apply,' 'I analyze,' 'I can explain'), and these tend to be observable behaviors. This is congruent with what we see with frameworks that have an emphasis on developmental progression. The inclusion of observable behaviors is not universal among SEL frameworks. Often the skills and competencies are described, with the observable behaviors left to local implementers. In other cases, observable behaviors are included separately from the definitions of skills and competencies. Frameworks that include active verbs as indicators and definitions, like the XQ Competency framework, are often those with clear developmental progression, such as Head Start Early Learning Outcomes Framework and various state standards."

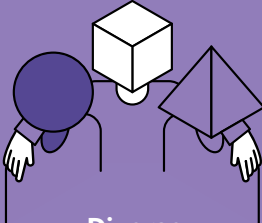
COMPETENCY	1. EMERGING	2. DEVELOPING	3. PROFICIENT	4. APPLYING
 <p>Diverse Perspectives (GC.SA.1)</p> <p><i>Recognize the value of differences.</i></p> <p>Recognize and act upon the importance of diverse perspectives.</p>	Collaborating across difference (GC.SA.1.a)			
	<p>I can collaborate with people who have diverse perspectives and backgrounds. (GC.SA.1.a.1)</p>	<p>I can discuss differences with people who have diverse perspectives and backgrounds. (GC.SA.1.a.2)</p>	<p>I collaborate with people who have diverse perspectives and backgrounds in order to improve outcomes. (GC.SA.1.a.3)</p>	<p>I engage and actively look for ways to collaborate with people who have diverse perspectives and backgrounds in order to improve outcomes. (GC.SA.1.a.4)</p>
	Situating my perspective (GC.SA.1.b)			
	<p>I can identify the facts that I may hold about a given circumstance. (GC.SA.1.b.1)</p>	<p>I can identify the facts, assumptions, and biases that I may hold about a given circumstance. (GC.SA.1.b.2)</p>	<p>I identify the facts, assumptions, and biases that form my perspective on a given issue/ circumstance and analyze relationships among them. (GC.SA.1.b.3)</p>	<p>I identify the facts, assumptions, and biases that form my perspective on a given issue/ circumstance and analyze them for oppressive or exclusionary elements (e.g., racism, homophobia, etc.). (GC.SA.1.b.4)</p>

Figure 12. An Example of the Developmental Progression from Emerging to Applying in XQ Competency Rubric ³⁵

2. Critical Thinking: The Bridge Between the Academic and SEL XQ Learner Outcomes

The three frameworks selected by EASEL for individual comparison differ in their coding profiles and the complexity of their definitions (domains, subdomains, sentence descriptions). Equally important, they differ in purpose. The CASEL Framework is designed specifically to introduce and integrate SEL into academic learning in K-12

schools. The P21 Framework is designed to increase focus on the skills and competencies employers prioritize within high schools to increase college and career readiness. The OCTAE Framework is designed for use in career and technical education programs with employers’ priorities for entry level workers specifically in mind.

The differences in purpose, in our opinion, are reflected in each framework’s domain focus percentages:

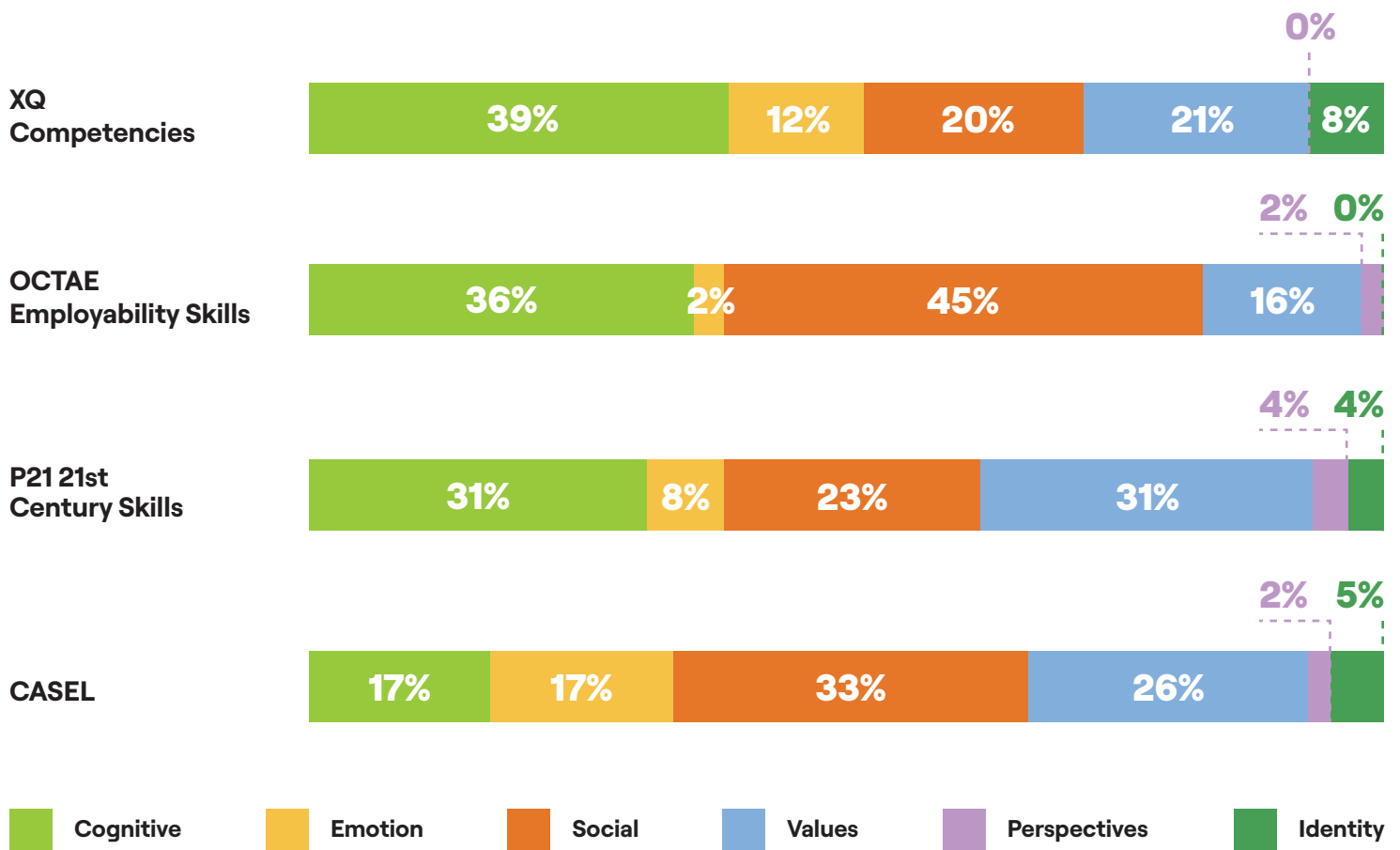


Figure 13. SEL Domain Focus of Comparative Frameworks

The CASEL framework stands out because of its low coding in the Cognitive domain.

The framework has half the codes in this domain compared to the average of the other three frameworks. This is completely understandable. The CASEL framework was designed to introduce SEL skills into classrooms where the specific subdomains associated with Cognitive (attention control, inhibition control, working memory/ planning skills, critical thinking, cognitive flexibility) are already infused into curricula. The other frameworks were designed to support learner readiness beyond high school. The three SEL-related outcomes in the XQ Competency Rubric have the highest percentage of Cognitive domain codes. As noted above, this over-emphasis is the result of critical thinking being built into all three outcome areas.

The Employability Skills framework stands out because of its heavy focus on two domains: Cognitive and Social.

Unlike the XQ Competency framework, this framework had codes in the Perspectives domain. But 81% of its codes are in its top two domains, compared to about 60% in the other frameworks. This is completely understandable given the much more explicit focus on workplace readiness.

The XQ and P21 frameworks are the most similar and the most balanced.

The XQ Competency framework has about the same percentage of combined social and emotional codes (32%) as the P21 Skills framework (31%) which is about one-third lower than the combined codes for Employability Skills and CASEL frameworks, both of which lead with the Social domain. This emphasis, again, is understandable. Both are designed to demonstrate the natural integration of a broader competencies menu into conventional high school programs.

Takeaways

The XQ Competency framework is a hidden gem. There are SEL frameworks beyond the 40 reviewed by EASEL (e.g., Panorama’s SEL Survey). There are frameworks within the 40 that could be analyzed in detail beyond the three profiled. But the analyses provided suggest that the XQ Competency progressions reviewed are extremely well-designed for the purpose at hand:

- **They are balanced.** The coding percentages are below the maximum for all six EASEL domains and within ten percentage points of the average in all but one (Cognitive is 39% vs. the average of 23%).
- **They are appropriate.** Critical thinking is a central goal in the Common Core State Standards and many individual state standards. It is baked into 23 of the 24 competencies that make up the three SEL-related XQ Learner Outcomes. This emphasis in particular, and the more general emphasis on Cognition, helps blur the line between the three SEL-related Learner Outcomes and the two academic Learner Outcomes already aligned to state standards.
- **They are action focused.** The individual statements that comprise the competencies use action words (“I identify,” “I evaluate”) that can be linked to observable behaviors across learning experiences.
- **They are developmental.** Building in complexity and difficulty at each progressive level, from Emerging to the Applying (see Figure 12).

The XQ Competencies have three additional advantages:

- **They are aligned with academic outcomes.** The Foundational Knowledge and Fundamental Literacies Rubrics have the same sentence format and proficiency structure. They are presented as an integrated set of Learner Outcomes.
- **They are a part of a larger Student Performance Framework** engineered to help educators design learning experiences that build academic knowledge, cognitive skills, and social-emotional capacities together and help students track and get credit for their growth across experiences.

- **They are applicable across learning settings.** The statement language focuses on the competency, not the situation. It is applicable to and would likely be welcomed by other organizations and systems (e.g., youth organizations, museums, libraries, summer employment programs) that design and offer discrete competency-based learning experiences.

We refer to the XQ Competency framework as a hidden gem because, as noted in the introduction, our concern is that the cacophony of constructs (e.g., competencies, traits, skills, values, beliefs) and framework labels (e.g., SEL, Life Skills, Durable Skills, 21 Century Skills) has created an undisciplined space such that the value of the XQ Competency framework—especially to those committed to moving towards integrated competency measures and competency-based practices—may not be recognized.



*An XQ student tries out lesson planning.
(Photo by Chris Chandler.)*

Conclusion

Settled Science

We know what makes a difference in young people's success. The science underpinning the youth development movement—from the National Research Council's "Community Programs to Promote Youth Development" report in 2002,³⁶ to the Federal Interagency Working Group on Youth Programs' definition-setting in 2008,³⁷ to the Science of Learning and Development Alliance's work to bring developmental science and brain research into direct conversation with school leaders³⁸—is uncontroversial.

Couple this decades-long body of knowledge with the latest in neurodevelopmental research. Mary Helen Immordino-Yang, for example, maps brain activity patterns that suggest how young people make meaning—moving from concrete narratives to abstract narratives—by doing the emotionally-driven work of deep thinking. The long-term effects of this deeper thinking surpass variables such as family income or IQ in the predictive power of youth success.³⁹

In high school specifically, the science is just as clear. A recent authoritative study from the University of Chicago Consortium on School Research explicates the power of supporting *all* dimensions of student growth. UCCSR found that focusing on socioemotional development has just as much positive impact on test scores as focusing directly on academic growth.⁴⁰ Furthermore, focusing on socioemotional development had *greater* impact on long-term student outcomes such as graduation and post-secondary attendance. Addressing near-term academic goals while setting up students for long-term success underscores the benefits of a "multiple dimensions" approach, completely upending any case to be made for the out-of-date practices of teaching to the test.

Positive youth development is an intentional, pro-social approach that engages youth within their communities, schools, organizations, peer groups, and families in a manner that is productive and constructive; recognizes, utilizes, and enhances young people's strengths; and promotes positive outcomes for young people by providing opportunities, fostering positive relationships, and furnishing the support needed to build on their leadership strengths.

—*Interagency Working Group on Youth Programs.*

UCCSR *Investing in Adolescence* Key Takeaways

- When schools foster socioemotional development (SED), students are more likely to thrive in high school and beyond.
- Many 'school quality' measures miss the important ways in which high schools foster student thriving.
- School climate is strongly and positively tied to school effectiveness.
- Effective schools are rigorous and relationship-oriented.

Contextualizing the Research

While research on socioemotional factors has existed for many decades, the importance of these factors—for academic, social, civic, and psychological markers of success—has been elevated more recently. Evolutions in the education sector that may have contributed to increased attention to the socioemotional aspects of development include:

- 1) a substantive shift in the social construction of "ability" away from purely inheritable to substantially influenced by environment and access to resources;
- 2) a rethinking of the purpose of schooling from identifying exceptional "natural" talent toward nurturing the ability of all students to reach their intellectual potential; and
- 3) a reckoning with the impacts of systemic racism and exclusionary cultural norms in education contexts that restrict particular students' opportunities for rigorous high quality learning.

Clear Demand

The science upon which the XQ Competencies rest is clear. But the XQ Competencies are not merely a tool for pedagogical theory—they are a tool for action, for meeting real needs articulated by students, families, higher education, and employers.

According to a 2019 Kauffman Foundation/Global Strategy Group survey of over 1000 adults (half of them parents), 500 high school students, and 500 employers, all three groups agree: high school graduates are not being prepared for the workforce, and developing real world skills is more important than focusing on subject matter

expertise.⁴¹ The results of Populace’s “Purpose of Education Index” cited above concur: the public values the multi-dimensional, real-world definition of competence lifted up by XQ.⁴² Families, employers, and higher education value character as well as reading, writing, and math skills. They believe students should develop practical skills and also be able to think critically, solve problems, and make decisions. They want students to demonstrate an understanding of science, but also be prepared more generally for a career. They want students to have agency in pursuing their passions and honing expertise in their areas of interest, without sacrificing the ability to generalize knowledge across contexts and experiences. In short, they want well-rounded students who are well-prepared for the workforce.

Which of the following comes closest to your opinion about high school preparation?

- High schools should focus on developing real world skills
- High schools should focus on fundamentals of subject matter expertise like reading and writing

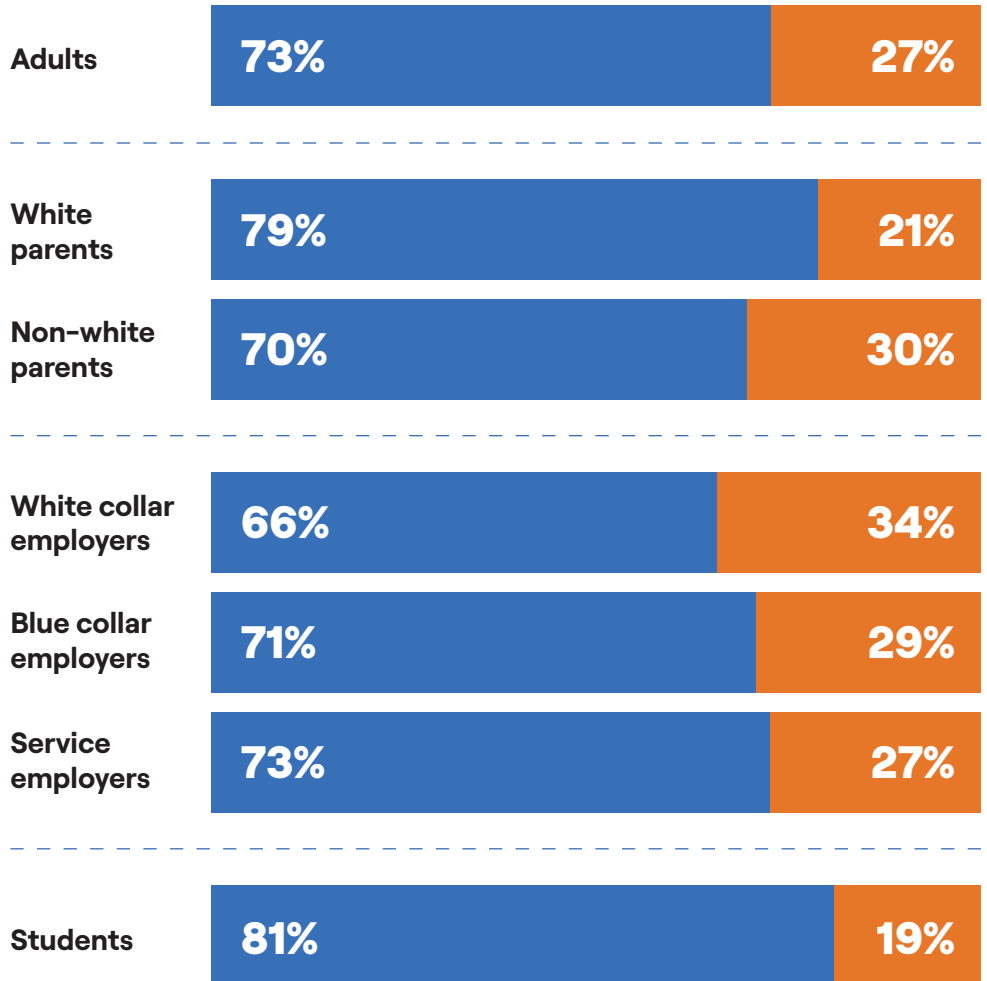


Figure 14. “Visions of the Future,” Ewing Marion Kauffman Foundation and Global Strategy Group

Amplifying and Expanding Practice

The XQ Competencies provide students, educators, institutions of higher education, and employers with a better way to define student success. But the work does not stop here. Any competency-driven learning framework must necessarily provide not only definitions of student growth, but also instructional practices that create rich contexts for learning and tools that measure learning as it happens. The XQ Competencies therefore sit within a larger system that centers students, educators, and their interactions. The goal is to shift the unit of change from the level of the system, school, or even classroom to the level of individual student learning, growth, and development, grounded in creatively and carefully designed learning experiences. Combined with XQ’s ongoing efforts to develop student assessments, educator supports, and resources for school design and redesign, the XQ Competencies present a foundational approach—and an important point of entry—to transform secondary education nationwide.



PARENTS’ TOP 10 PRIORITIES
All students have the option to choose the courses they want to study based on interests and aspirations
Students develop practical skills (e.g., manage personal finances, prepare a meal, make an appointment)
Students are able to think critically to problem solve and make decisions
Students are prepared for a career
Students advance once they have demonstrated mastery of a subject
Students demonstrate character (e.g., honesty, kindness, integrity, and ethics)
Students can demonstrate an understanding of science (e.g., biology, chemistry, physics)
Students can demonstrate basic reading, writing, and arithmetic
All students receive the unique supports that they need throughout their learning
Students are evaluated by assessments through tests administered by teachers as part of a course

Figure 15. 2022 Purpose of Education Index, Populace



The XQ Competencies are a unique, adaptable framework to transform teaching and learning across all domains. Learn more and get started by scanning the QR CODE.

Endnotes

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Appendix

Appendix 1: XQ Competencies

Holders of Foundational Knowledge

Social Systems

- **Governments:** Understand governments (FK.SS.1)
- **Politics:** Understand political and social power (FK.SS.2)
- **Economics:** Understand economic forces (FK.SS.3)
- **Cultures:** Understand different cultures (FK.SS.4)

Appreciating and Creating Art

- **Artistic Expression:** Express myself artistically (FK.AC.1)
- **Art Analysis:** Appreciate art and art history (FK.AC.2)

Masters of All Fundamental Literacies

Communicating and Receiving Ideas

- **Making Meaning:** Interpret information from many sources (FL.ID.1)
- **Persuasive Communication:** Inform and persuade others (FL.ID.2)
- **Critical Dialogue:** Make and support arguments (FL.ID.3)

Mathematical and Scientific Thinking

- **Computational Thinking:** Use math to solve problems (FL.MST.1)
- **Mathematical Modeling:** Use math to make predictions (FL.MST.2)
- **Interpreting Data:** Use data to explain relationships (FL.MST.3)
- **Scientific Investigation:** Explore questions using scientific concepts (FL.MST.4)

Original Thinkers for an Uncertain

Creative Thinking

- **Creative Production:** Seek and develop new concepts (OT.Creat.1)
- **Sharing Ideas:** Put forward new concepts (OT.Creat.2)

Critical Thinking

- **Interpreting Information:** Understand and assess evidence (OT.Crit.1)
- **Logical Thinking:** Analyze assumptions and reasoning (OT.Crit.2)
- **Synthesis:** See and make connections (OT.Crit.3)

Problem Seeking and Solving

- **Problem Seeking:** Identify and define a problem (OT.PS.1)
- **Problem Solving:** Generate creative solutions (OT.PS.2)

Generous Collaborators for Tough Problems

Social Awareness

- **Diverse Perspectives:** Recognize the value of differences (GC.SA.1)
- **Navigating Power:** Read and manage social dynamics (GC.SA.2)

Interpersonal Skills

- **Healthy Relationships:** Build and maintain healthy relationships (GC.IS.1)
- **Negotiating Conflict:** Negotiate solutions to conflict (GC.IS.2)
- **Building Empathy:** Cultivate my understanding of others (GC.IS.3)
- **Productive Collaboration:** Work productively with a group (GC.IS.4)

Social Agency

- **Community Advocacy:** Advocate for myself and others (GC.SAg.1)
- **Community Mobilization:** Inspire and organize others (GC.SAg.2)

Learners for Life

Self-Awareness

- **Wellness:** Understand my physical and emotional health (LL.SAw.1)
- **Recognizing Conflict:** Cope constructively with conflict (LL.SAw.2)
- **Understanding Self:** Know my strengths and areas for growth (LL.SAw.3)

Self-Management

- **Receiving Feedback:** Seek and act on feedback from others (LL.SM.1)
- **Pursuing Goals:** Set goals and work to achieve them (LL.SM.2)
- **Self-Regulation:** Manage emotions and behavior (LL.SM.3)

Self-Directed Learning

- **Self-Motivation:** Nurture a sense of purpose (LL.SD.1)
- **Wayfinding:** Navigate my learning path (LL.SD.2)
- **Self-Advocacy:** Seek out the support I need (LL.SD.3)

Appendix 2: Dictionary Definitions of Frequently Used Terms

	Merriam Webster	Google powered by Oxford Languages	dictionary.com
Abilities	"the quality or state of being able" "competence in doing something: skill"	"possession of the means or skill to do something" "talent, skill, or proficiency in a particular area"	"power or capacity to do or act physically, mentally, legally, morally, financially, etc." "competence in an activity or occupation because of one's skill, training, or other qualification"
Actions	"a thing done: deed" "the accomplishment of a thing usually over a period of time, in stages, or with the possibility of repetition"	"the fact or process of doing something, typically to achieve an aim" "a thing done; an act"	"the process or state of acting or of being active" "something done or performed; act; deed"
Agency	"the capacity, condition, or state of acting or of exerting power: operation" "a person or thing through which power is exerted or an end is achieved: instrumentality"	"action or intervention, especially such as to produce a particular effect"	"the state of being in action or of exerting power: operation" "the capacity to act or exert power"
Assets	"advantage, resource" "an item of value owned"	"a useful or valuable thing, person, or quality"	"a useful and desirable thing or quality"
Attitudes	"a mental position with regard to a fact or state" "a feeling or a notion toward a fact or state"	"a settled way of thinking or feeling about someone or something, typically one that is reflected in a person's behavior"	"manner, disposition, feeling, position, etc., with regard to a person or thing; tendency or orientation, especially of the mind"
Behaviors	"the way in which someone conducts oneself or behaves"	"the way in which one acts or conducts oneself, especially toward others"	"manner of behaving or acting"
Beliefs	"a state or habit of mind in which trust or confidence is placed in some person or thing" "something that is accepted, considered to be true, or held as an opinion: something believed"	"an acceptance that a statement is true or that something exists" "trust, faith, or confidence in someone or something"	"something believed; an opinion or conviction" "confidence in the truth or existence of something not immediately susceptible to rigorous proof"
Cognitions	"cognitive mental processes"	"the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses"	"the act or process of knowing; perception"
Competencies	"possession of sufficient knowledge or skill" "specific area of competence"	"the ability to do something successfully or efficiently"	"the quality of being competent; adequacy; possession of required skill, knowledge, qualification, or capacity"
Dispositions	"prevailing tendency, mood, or inclination; the tendency of something to act in a certain manner under given circumstances"	"a person's inherent qualities of mind and character"	"the predominant or prevailing tendency of one's spirits; natural mental and emotional outlook or mood; characteristic attitude" "state of mind regarding something; inclination"
Habits	"a settled tendency or usual manner of behavior"	"a settled or regular tendency or practice, especially one that is hard to give up"	"an acquired behavior pattern regularly followed until it has become almost involuntary"
Identity	"the distinguishing character or personality of an individual"	"the fact of being who or what a person or thing is"	"the state or fact of remaining the same one or ones, as under varying aspects or conditions"
Knowledge	"the factor condition of knowing something with familiarity gained through experience or association" "the range of one's information or understanding"	"facts, information, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject"	"acquaintance with facts, truths, or principles, as from study or investigation; general erudition" "familiarity or conversance, as with a particular subject or branch of learning"
Mindsets	"a mental attitude or inclination" "a fixed state of mind"	"the established set of attitudes held by someone"	"a fixed attitude, disposition, or mood" "an intention or inclination"
Perspective	"a mental view or prospect" "the interrelation in which a subject or its parts are mentally viewed"	"a particular attitude toward or way of regarding something; a point of view"	"a mental view or prospect"
Self-Regulation	"the act or condition or an instance of regulating oneself or itself"	"the fact of something such as an organization regulating itself without intervention from external bodies"	"control by oneself or itself, as in an economy, business or a nation, etc., especially such control as exercised independently of governmental supervision, laws, or the like."
Skills	the ability to use one's knowledge effectively and readily in execution or performance"	"the ability to do something well"	"the ability, coming from one's knowledge, practice, aptitude, etc., to do something well" "competent excellence in performance; expertness; dexterity"
Traits	"a distinguished quality (as of personal character)" "an inherited characteristic"	"a distinguishing quality or characteristic, typically one belonging to a person"	"a distinguishing characteristic or quality, especially of one's personal nature"
Values	"relative worth, utility, or importance"	"the regard that something is held to deserve; the importance, worth, or usefulness of something" "a person's principles or standards of behavior; one's judgment of what is important in life"	"relative worth, merit, or importance"

Appendix 3: Sample Definitions From Research Summaries and Research Informed Frameworks

	“What is the difference between competencies and behaviors when establishing performance criteria?” (Blaug 2014)	“Soft Skills: A Phrase in Search of Meaning” (Matteson et al. 2016)	“Foundations for Young Adult Success” (Nagaoka et al. 2014)
Abilities	“Person’s internal potential to accomplish one or more activities, in a certain manner and at a certain level of quality”		
Actions	“Manifest themselves”		
Agency			Ability “to shape the course of their life”; “taking an active role in shaping and managing one’s chosen path”; four parts of agency: intentionality, forethought, self-reactiveness, and self-reflectiveness
Assets			
Attitudes	“Indirect form of manifestation, which implies adopting a position towards something or someone without an explicit expression”	“A positive or negative judgment, based in part on emotion, about an outside entity.”	
Behaviors	Three dimensions: beliefs, attitudes, action		“The instantiation of the other factors as young adults set out their own life course and move toward their goals”
Beliefs	“Certitudes developed in time”	“An acceptance that certain factual evidence is true, informed by an individual’s own values”	
Cognitions			“Cognitive domain (cognitive processes and strategies, creativity, and knowledge)”
Competencies	Three dimensions: aptitude (abilities), knowledge, and skill		“We define competence as strategies appropriately applied in a context, informed by the interactions of knowledge, awareness, and “mindsets”
Dispositions		“Individual qualities, relatively stable over time, that influence behavior and actions performed as part of an individual’s skill set.”	

Habits			"Strategies can be consciously controlled by the individual, but if implemented regularly can become automatic responses or habits"; "Over time these behaviors can evolve into habits that are enacted unconsciously."
Identity			"Identity development is the process of exploring and understanding who one is as an individual and as a member of a group and integrating these different dimensions to make sense of past, present, and future experiences, as well as managing different contexts"
Knowledge	"Understand [ing] all the theoretical information related to performing a certain task or activity"		"Broadly speaking, a person has knowledge when he or she is in possession of a certain set of facts, information, or understanding." (See below for detail on specific areas of knowledge & skills)
Mindsets			"Mindsets are the psycho-social beliefs and attitudes toward oneself, the external world, and the interaction between the two." "Specifically, we suggest six mindsets that are crucial for young adult success: Self-efficacy, openness, relevance, optimism, growth, and belonging." "A growth mindset consists of the attitude and belief that competency and skill will increase in response to effort."
Perspective			"How others feel and think (perspective-taking)"
Self-Regulation			"The process of thinking about and managing one's own behavior—its aims or goals, its form or direction, and its ultimate effectiveness—are all part of a broader process of self-regulation."
Skills	"Developed dexterity to perform and accomplish an activity or a task"	"The ability to access knowledge from a domain-specific knowledge base and use that knowledge to perform an action or carry out a task."	"Skills can be defined as having the learned ability to carry out a task with pre-determined results or goals, which can be general or domain-specific." (See note below for detail on specific areas of knowledge & skills.)
Traits			"We formulate perseverance (i.e., tenacity, persistence, grit), as being a characteristic of behaviors rather than as an independent factor or trait."
Values		"General standards or principles that guide behaviors among varying situations and to which individuals feel a strong commitment."	

Note: Knowledge & Skills detail from Foundations for Young Adult Success. A. According to Conley, content knowledge and skills are knowledge and skills gained within school and includes "reading and writing skills, and core academic subject area knowledge and skills" (Conley, 2012). B. Technical knowledge and skills refers to specialized information about how to do a specific task at hand, using the skills and tools necessary to complete the task. C. Cultural knowledge and skills refer to the awareness and understanding of people from other races, ethnicities, or cultures, and the ability to navigate and move within other cultural contexts (Antonio, 2001). D. Institutional knowledge and skills refer to the knowledge of how institutions—universities, workplaces, communities—function, and the ability to successfully overcome obstacles and accomplish goals within those institutions (Stanton-Salazar, 2001). E. Professional knowledge and skills include knowing the proper behaviors one is expected to display in the workplace, including the rules around workplace etiquette and the expectations that govern professional behavior (The Conference Board, Partnership for 21st Century Skills, and Corporate Voices for Working Families, 2006).

Appendix 4: EASEL’s Overlap Analysis of P21 21st Century Skills and Employability Skills Frameworks with XQ Competencies Rubric

P21 21st Century Skills

The P21 Framework for 21st Century Skills is a framework designed to help practitioners integrate 21st century skills into the teaching of core academic subjects and focuses on the skills and knowledge needed to succeed in work, life, and citizenship in today’s world.

When comparing the XQ Competency Rubric to P21 21st Century Skills, some P21 skills overlap with many XQ Competencies, while others have little overlap. Those that overlap with many include P21’s Work Creatively with Others, Collaborate with Others, and Guide and Lead Others (see Figure 11). Though they overlap with many competencies, these three are most aligned to the competencies grouped together in the Generous Collaborators for Tough Problems. This indicates that collaboration is defined in similar ways, but the way it breaks down into competencies and skills differs.

There are skills and competencies in these frameworks that have little representation in the other. For example, while 10 of the P21 skills have codes that overlap with XQ’s Interpersonal Conflict, these are quite small overlaps (.32 or less). Meanwhile, P21’s Adapt to Change and Be Flexible do not have much overlap in XQ Competencies. This is likely due to the under-representation of the Perspectives domain in the XQ Competency Rubric.

Employability Skills

The Employability Skills Framework was compiled by the Office of Career, Technical, and Adult Education (OCTAE) at the U.S. Department of Education to outline the personal and interpersonal skills necessary for success in all sectors of the labor market.

In comparing the XQ Competency Rubric to Employability Skills, the overlaps occur across many competencies without many direct one-to-one competencies (see Figure 13). This is likely due to the shorter, simpler definitions of the Employability Skills. The XQ Competencies are comprised of many statements that grow as the skill develops. This typically results in a larger set of codes applied to each competency. When the number of codes applied to skills and competency differ greatly, it is unlikely to have a complete overlap in codes; this can only occur if the skills and competencies being compared have the identical number of codes. The exceptions to this are the competencies and skills with a cognitive focus, such as XQ’s Interpreting Information and Employability Skills’ Reasons and Analyzes, where we see identical coding.

There are competencies that each framework addresses that do not occur, or do so to a small extent, in the other framework. For example, XQ’s Interpersonal Wellness overlaps with some of the Employability Skills, but not above 0.33. In the Employability Skills framework, Manages Resources only overlaps with Pursuing Goals, but this overlap is small (0.21). These differences highlight skills that appear in one framework but not the other.

Identifying Connections

Additional connections and gaps between frameworks can be identified using the figures provided. When identifying connections, they are sometimes main one-to-one connections between competencies, but often a competency in one framework cuts across the competencies of another. Without consistency in the field around the names and definitions of competencies, aligned competencies often have different names. These tools can illuminate where competencies are aligned or where gaps might occur based on how the frameworks are defining them.

Table 9. Coding Overlap of XQ Competency Rubric and P21 21st Century Skills

	think creatively	work creatively with others	implement innovations	reason effectively	use systems thinking	make judgments and decisions	solve problems	communicate clearly	collaborate with others	access and evaluate information	use and manage information	analyze media	create media products	apply technology effectively	adapt to change	be flexible	manage goals and time	work independently	be self-directed learners	interact effectively with others	work effectively in diverse teams	manage projects	guide and lead others	be responsible to others
Generating Ideas	0.42	0.46				0.42	0.26	0.21	0.37		0.30		0.22	0.37					0.35		0.30		0.35	
Sharing Ideas	0.39	0.56	0.22	0.22	0.22	0.39		0.39	0.47	0.22	0.39	0.28	0.28	0.47		0.30			0.32	0.22	0.49	0.58	0.22	
Interpreting Information	0.61			0.67	0.67	0.61	1.00		0.28	0.67	0.33			0.28	0.39				0.24				0.24	
Logical Thinking	0.44	0.28		0.39	0.39	0.44	0.61	0.24	0.56	0.39	0.24		0.28	0.56	0.28					0.39			0.49	
Synthesis	0.44	0.28		0.39	0.39	0.44	0.61	0.24	0.56	0.39	0.24		0.28	0.56	0.28					0.39			0.49	
Problem Seeking	0.26	0.44		0.22	0.22	0.26		0.39	0.65	0.22	0.39	0.43	0.43	0.65		0.21			0.22	0.22	0.49	0.78	0.22	
Problem Solving	0.57	0.56	0.22	0.22	0.22	0.57	0.35		0.47	0.22	0.39		0.28	0.47					0.58	0.22	0.28		0.44	
Diverse Perspectives	0.33	0.31		0.28	0.28	0.33	0.24		0.83	0.28	0.49	0.22	0.56	0.83			0.22	0.22	0.26	0.28	0.32	0.22	1.00	0.28
Navigating Power	0.33	0.23		0.28	0.28	0.33	0.24		0.43	0.28	0.49	0.22	0.22	0.43			0.22	0.22	0.43			0.22	0.57	0.28
Relationships	0.22	0.45		0.33	0.33	0.22	0.28	0.56	0.50	0.33	0.22	0.25	0.25	0.50						0.33	0.36		0.43	
Mediation		0.42		0.28	0.28		0.24	0.49	0.43	0.28	0.19	0.22	0.22	0.43						0.28	0.32		0.39	
Empathy	0.28	0.47		0.25	0.25	0.28	0.22	0.43	0.75	0.25	0.43	0.59	0.50	0.75		0.22			0.23	0.25	0.53	0.65		
Collaboration	0.43	0.60	0.25	0.25	0.25	0.43	0.22	0.43	0.52	0.25	0.43	0.30	0.30	0.52		0.32			0.36	0.25	0.53		0.47	
Community Advocacy	0.33	0.31		0.28	0.28	0.33	0.24		0.83	0.28	0.49	0.22	0.56	0.83			0.22	0.22	0.26	0.28	0.32	0.22	1.00	0.28
Community Mobilization	0.26	0.44		0.22	0.22	0.26		0.39	0.65	0.22	0.39	0.43	0.43	0.65		0.21			0.22	0.22	0.49	0.17	0.78	0.22
Wellness	0.27	0.43				0.27	0.21		0.42		0.27	0.20	0.28	0.42					0.32		0.28		0.40	
Interpersonal Conflict		0.30		0.24	0.24	0.30	0.22	0.32	0.26	0.24				0.26							0.21		0.25	
Understanding Yourself	0.37	0.41				0.37			0.31		0.47			0.31				0.39	0.39	0.67		0.39	0.30	
Receiving Feedback	0.57	0.56	0.22	0.22	0.22	0.57	0.35		0.47	0.22	0.39		0.28	0.47	0.43	0.30			0.32	0.22	0.49		0.44	
Pursuing Goals	0.51	0.35	0.21	0.21	0.21	0.51	0.30		0.24	0.21	0.39		0.24		0.20	0.41	0.41	0.58				0.41	0.23	
Self-Regulation	0.24			0.39	0.39	0.24	0.33		0.22	0.39	0.24			0.22										
Self-Motivation	0.28	0.61				0.28		0.20	0.35		0.28		0.21	0.35		0.23	0.21	0.21	0.53		0.29	0.21	0.33	
Wayfinding	0.72	0.31	0.28	0.28	0.28	0.72	0.44		0.28	0.28	0.49			0.28	0.22		0.22	0.22	0.56			0.22	0.26	
Self-Advocacy		0.24						0.22	0.30				0.25	0.30			0.25	0.25		0.33		0.25	0.28	

Table 10. Coding Overlap of XQ Competency Framework and Employability Skills

	math strategies/procedures	scientific principles/procedures	thinks creatively	thinks critically	makes sound decisions	solves problems	reasons	plans/organizes	understands teamwork and works with others	responds to customer needs	exercises leadership	negotiates to resolve conflict	respects individual differences	demonstrates responsibility and self-discipline	adapts and shows flexibility	works independently	demonstrates a willingness to learn	demonstrates integrity	demonstrates professionalism	takes initiative	displays a positive attitude and sense of self-worth	takes responsibility for professional growth	manages time	manages resources	manages personnel	locates	organizes	uses	analyzes	communicates	communicates verbally	listens actively	observes carefully	understands and uses systems	improves systems	
Generating Ideas		0.26			0.26	0.22	0.26	0.21		0.22			0.22	0.37								0.22	0.22			0.22				0.26						
Sharing Ideas	0.22		0.22	0.22		0.28		0.26	0.22	0.43	0.22	0.22	0.43	0.47			0.22		0.22	0.22		0.43	0.28		0.22	0.28	0.22	0.22		0.22	0.22	0.22	0.28	0.22	0.22	
Interpreting Information	0.67	1.00	0.67	1.00	0.39	1.00	0.33							0.28	0.67	0.33						0.39				0.39	0.67	0.67	1.00							
Logical Thinking	0.39	0.61	0.39	0.61	0.28	0.61	0.24	0.39	0.28	0.39	0.39	0.28	0.56	0.39					0.39	0.39	0.22	0.28	0.28		0.39	0.28	0.39	0.39	0.61	0.39	0.39	0.39		0.39		
Synthesis	0.39	0.61	0.39	0.61	0.28	0.61	0.24	0.39	0.28	0.39	0.39	0.28	0.56	0.39					0.39	0.39	0.22	0.28	0.28		0.39	0.28	0.39	0.39	0.61	0.39	0.39	0.39		0.39		
Problem Seeking	0.22		0.22		0.28		0.26	0.22	0.43	0.22	0.22	0.43	0.47				0.22	0.22	0.22		0.43	0.28		0.22	0.28	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.28	0.22		
Problem Solving	0.22	0.35	0.22	0.22	0.35	0.28	0.35	0.26	0.22	0.28	0.22	0.22	0.28	0.47	0.22		0.22	0.08	0.22	0.22	0.23		0.28	0.22	0.22	0.28	0.22	0.22	0.35	0.22	0.22	0.22		0.22		
Diverse Perspectives	0.28	0.24	0.28	0.24	0.36	0.24	0.33	0.28	0.56	0.28	0.28	0.56	0.60					0.28	0.28	0.28		0.22	0.36		0.28	0.36	0.28	0.28	0.24	0.28	0.28	0.28		0.28		
Navigating Power	0.28	0.24	0.28	0.24	0.36	0.24	0.33			0.22			0.22	0.28				0.28				0.22				0.36	0.28	0.28	0.24							
Relationships	0.33	0.28	0.33	0.28	0.25	0.28	0.22	0.33	0.25	0.33	0.33	0.25	0.50					0.33	0.33	0.20	0.67	0.25		0.33	0.25	0.33	0.33	0.28	0.33	0.33	0.33	0.39	0.33			
Mediation	0.28	0.24	0.28	0.24	0.22	0.24	0.19	0.28	0.22	0.28	0.28	0.22	0.43					0.28	0.28		0.56	0.22		0.28	0.22	0.28	0.28	0.24	0.28	0.28	0.28	0.36	0.28			
Empathy	0.25	0.22	0.25	0.22	0.30	0.22	0.28	0.25	0.30	0.25	0.25	0.30	0.52				0.25	0.25	0.25		0.50	0.30		0.25	0.30	0.25	0.25	0.22	0.25	0.25	0.25	0.30	0.25			
Collaboration	0.25	0.22	0.25	0.22	0.30	0.22	0.28	0.25	0.30	0.25	0.25	0.30	0.52			0.25	0.25	0.25		0.50	0.30		0.25	0.30	0.25	0.30	0.25	0.22	0.25	0.25	0.25	0.30	0.25			
Community Advocacy	0.28	0.24	0.28	0.24	0.36	0.24	0.33	0.28	0.56	0.28	0.28	0.56	0.60				0.28	0.28	0.28		0.22	0.36		0.28	0.36	0.28	0.28	0.24	0.28	0.28	0.28		0.28			
Community Mobilization	0.22		0.22		0.28		0.26	0.22	0.43	0.22	0.22	0.43	0.47				0.22	0.22	0.22		0.43	0.28		0.22	0.28	0.22	0.22		0.22	0.22	0.28	0.22	0.22			
Wellness	0.21		0.21	0.20	0.21				0.20			0.20	0.33								0.24	0.20	0.20		0.20				0.21							
Interpersonal Conflict	0.24	0.22	0.24	0.22		0.22							0.26								0.49					0.24	0.24	0.22				0.33				
Understanding Yourself					0.39		0.47						0.31												0.39											
Receiving Feedback	0.22	0.35	0.22	0.22	0.35	0.28	0.35	0.26	0.22	0.28	0.22	0.22	0.28	0.47	0.22		0.22		0.22	0.22	0.23		0.28		0.22	0.28	0.22	0.22	0.35	0.22	0.22	0.22		0.22	0.22	
Pursuing Goals	0.21	0.30	0.21	0.21	0.30	0.41	0.30	0.51					0.33	0.21	0.21	0.21								0.21	0.41	0.21	0.21	0.30								
Self-Regulation	0.39	0.33	0.39	0.33	0.28	0.33	0.24						0.22								0.50				0.28	0.39	0.39	0.33								
Self-Motivation					0.30		0.28		0.21			0.21	0.45									0.21	0.30		0.30											
Wayfinding	0.28	0.44	0.28	0.28	0.44	0.36	0.44	0.33					0.28	0.28	0.28	0.11						0.22			0.36	0.28	0.28	0.44								
Self-Advocacy								0.22	0.33	0.25	0.33	0.33	0.25	0.30	0.33				0.33	0.33	0.30		0.25	0.33					0.33	0.33	0.33		0.33			

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