

Expanding Access, Value and Experiences Through Credentialing

A Landscape Analysis of Credentialing and Its Impact on K-12

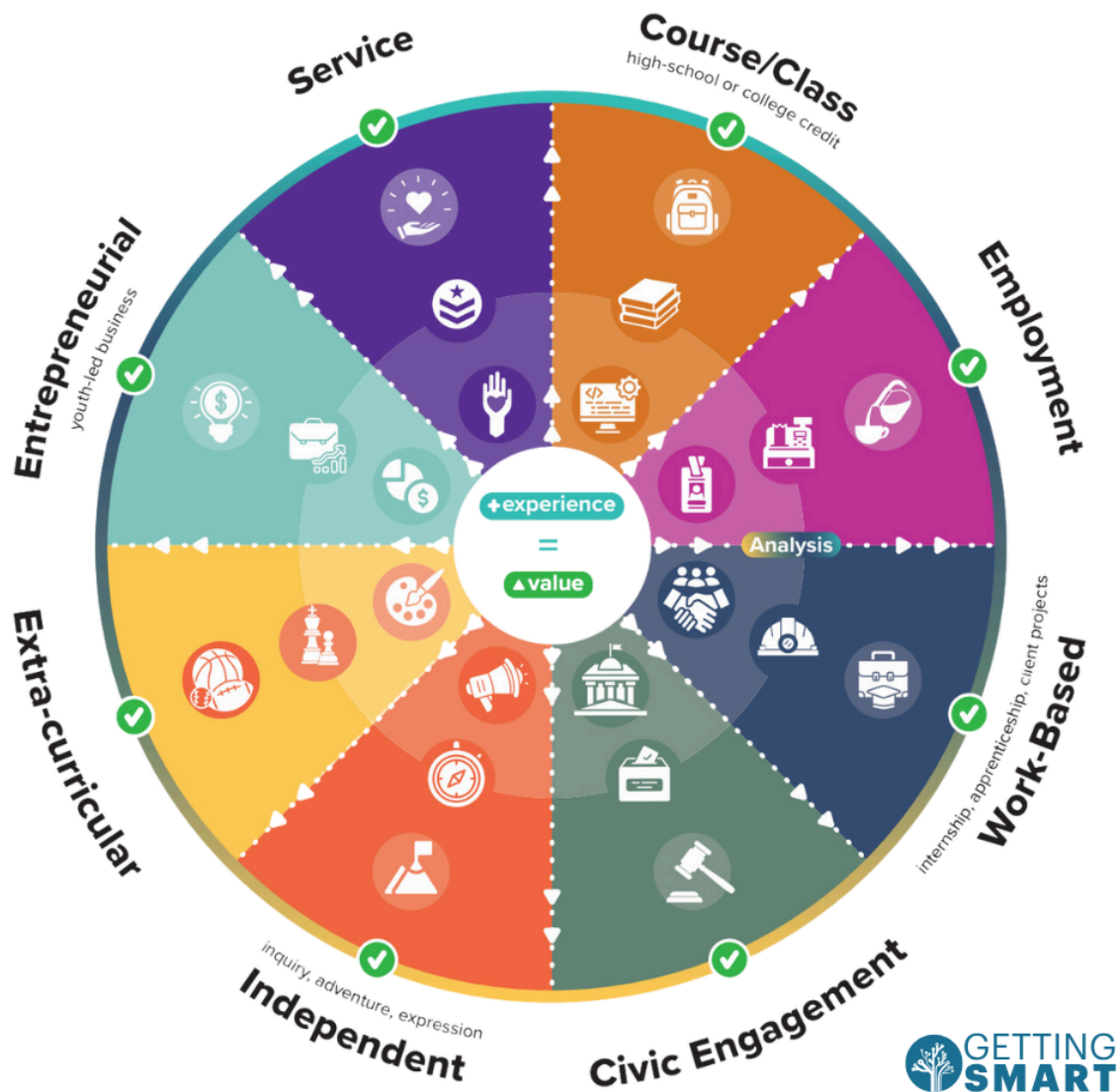


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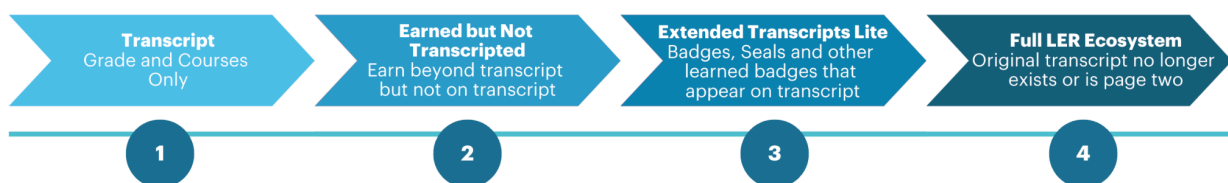
Authors & Gratitude

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Executive Summary

This report examines the evolving landscape of credentialing and learner records within global education systems, highlighting a shift from traditional time-based signals—such as courses and grades—to competency-based signals (credentials and learner records).



These new frameworks prioritize measurable skills and achievements, providing a more precise evaluation of an individual's capabilities. By capturing and communicating these competencies effectively, this transition not only aligns educational outcomes with real-world demands but also enhances the transparency and mobility of learners in a dynamic job market. This report outlines the current practices and trends, proposes an experience taxonomy and translation model, and recommends best next steps for K-12, higher education and workforce leaders.



Valuable experiences develop and demonstrate priority competencies. They occur in and outside formal education, are becoming more valuable elements of youth/career development, but are not captured and communicated systematically by traditional signals (transcripts and resumes). This report proposes a taxonomy to capture the type and intensity of valuable experiences to augment skill credentials in extended transcripts and learner records.

Our Methodology

To begin this exploration of the credentialing landscape, we formed a steering committee, composed of experts and operators, to unpack the questions around capturing and communicating

work-based learning experiences. In addition, we interviewed more than 40 credentialing leaders to address the three core research questions (see the [Recommendations and Acknowledgements](#) page for individual names and organizations).

Interviewees identified concerns with our original line of thinking, which included:

- Imposition on network sites with established language and models.
- Imposition of standardized measures of rigor, variety and complexity and allowing for variability.
- Value by employers as credentialed experiences are valuable but not valued.
- Cost of credentialing and building adopted recognition.
- Disruption of the validation and recording of credentials by emerging technology
- Impact of unbundled learning on the value of pre-existing curriculum and teacher expertise.

This research led us to the following vision.

Vision

The American education system requires a new architecture constructed around new goals, new learning experiences and new signals of learning.

- **Goals:** Education should equip young people with skills, knowledge, confidence and resources to develop purpose, engage civically, earn a family-sustaining wage and contribute to their community. These aspirations are increasingly communicated as a [portrait](#) of a graduate or learner profile.
- **Experiences:** Powerful experiences (in and out of school) develop and demonstrate important learning goals. Moving from time to learning as the most important metric will expand access to valuable experiences.
- **Signals:** Demonstrations of learning captured in a robust credentialing ecosystem will power the transition from transcripts and resumes to a more actionable and portable digital record, or Learner Employment Record (LER).

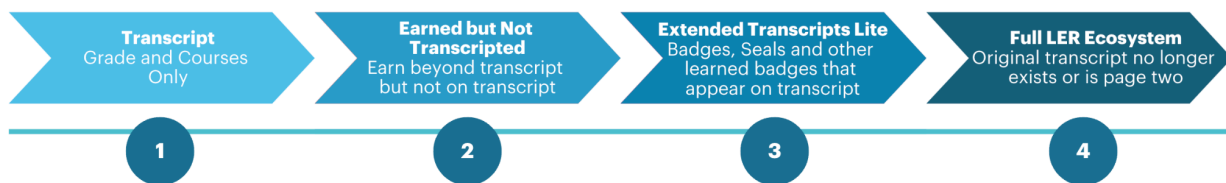
Realizing this new education architecture **expands access** for all learners, particularly those on the margins; **expands value** to both the learner and the workforce and **expands experiences** as a core component of both verifying skills and encouraging community connection.

While the formula is currently Graduation = School Experience + School Authorized Credential, a more useful equation would look more like Graduation = Valuable Experiences + Credentialed Skills.

Credentialing Continuum

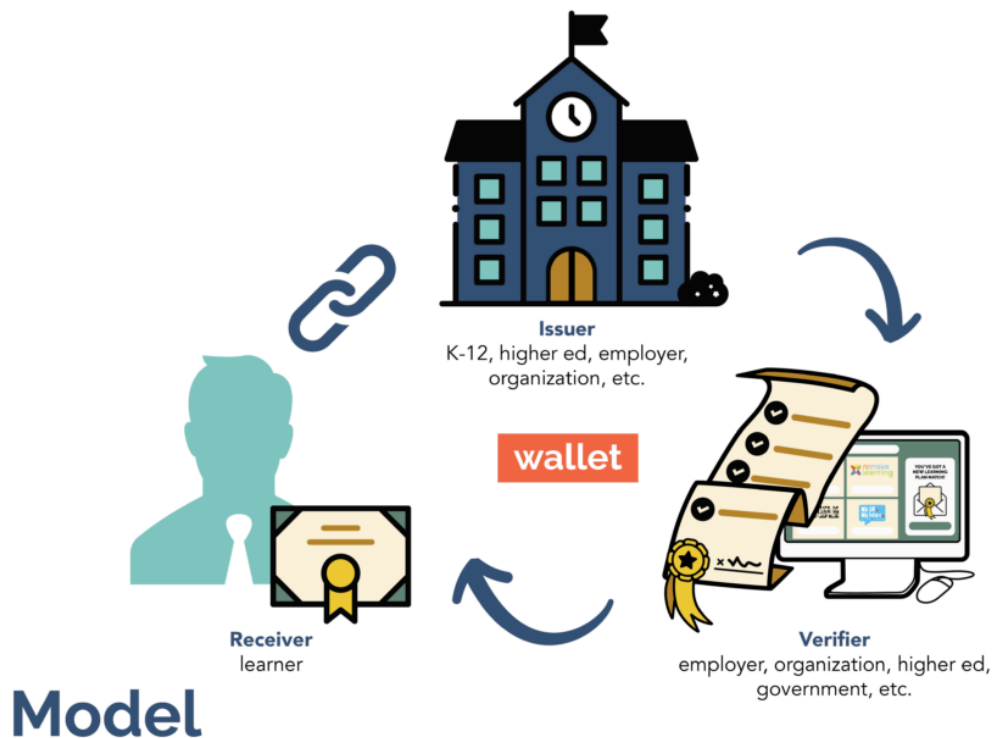
Education systems around the world are on a continuum toward this LER ecosystem, but most exist in Stages 1 and 2.

- **Stage 1:** Transcript (grade and courses only)
- **Stage 2:** Opportunity to earn beyond transcript but not on transcript (CNA, CTE certs)
- **Stage 3:** Extended transcript lite (endorsements, awards, credentials, experiences mentioned on the second page of a transcript)
- **Stage 4:** Full LER ecosystem (skills-based transcript or LER wallet)



Vision of the Future

In order to document badges and credentials, a system of checks/balances must exist that builds connections between the holder (the individual who receives the badge/credential), the awarder or issuer (the provider who is responsible for issuing and ensuring the quality of the credential), and the reviewer (the organization or entity that reviews and verifies the credential). An issuer could be an educational organization, accrediting body, or employer who makes the skill assertion around the credential. This data, often described as a Learning and Employment Record (LER), is stored in an interoperable digital wallet and owned by the holder.



Below are a few depictions of what a school and workforce of the near future might look like with a fully implemented LER ecosystem.

Student Perspective

Aaliyah, a 16-year-old, logs into her personal dashboard. Her day begins with a virtual internship with a biotech company, where she works on real-world projects and earns digital badges for her achievements in various related skills. In the afternoon, she attends a virtual reality (VR) class on environmental science, participating in interactive simulations. Every skill demonstration and valuable experience is tracked in her Learning and Employment Record (LER), some or all of which she can share with colleges and future employers to demonstrate her competencies and experiences.

Employer Perspective

John, a hiring manager at a tech firm, accesses a digital platform to review potential candidates. Instead of relying solely on resumes, his technology system scans all available LERs permissioned by applicants, which provides a detailed view of their skills and experiences. This system allows him to see not only the technical skills of candidates but also their durable skills, such as teamwork and problem-solving, verified through various projects and internships. This comprehensive view helps him make more informed skills-based hiring decisions, reducing the risk and cost of recruitment and talent development.

Adult Upskilling Perspective

Maria, a 35-year-old marketing professional, decides to upskill in data analytics to stay competitive in her field. She enrolls in an online credentialing program that fits her busy schedule. Throughout the course, Maria completes hands-on projects and earns credentials for each skill mastered. Maria accesses her digital wallet, which houses her LER, and adds these skill validations. When applying for a new job, she prompts the technology platform to produce a resume that showcases her verified skills and experiences connected to the position requirements, providing her with a competitive edge in the job market.

In order to create an LER Ecosystem that serves all learners, a comprehensive learner-centered credentialing ecosystem must be designed, developed and implemented. This paper describes the current and emerging conditions of the credentialing landscape, offers a proposal for a new model that honors all learning experiences, and makes recommendations to accelerate the progression to a full skills-based LER Ecosystem (Stage 4 from above).

Understanding the Current State of Credentials

The credentialing landscape is massive and complex. As of 2024, employees and learners can earn [nearly a million viable credentials](#) to demonstrate competency. In fact, one of the leading credential providers, Credly, [has awarded over 81 million credentials](#) to date. The number of awarded credentials is rapidly growing. [A Lumina sponsored report](#) found that 28 states have invested at least \$3.8 billion in short-term credential pathways. Although credentialing is a widespread form of capability communication (in support of employment, enrollment, enlistment), it has had limited benefit to those who earn most credentials. To reach its full potential in positively impacting learning, exploring and hiring/matching, credentialing requires a more transparent and efficient marketplace.

One driving force in the shift to credentialing is the rise in competency-based education (CBE), an initiative to communicate demonstrated mastery of academics, skills and aptitudes. Competency-based assessment systems are vehicles through which secondary and higher education systems can transition from a Carnegie Unit approach (course/letter grade/credit) to a mastery approach (skill/competency/credit). Fundamentally, this is a restructuring and realignment of new and expanded learning goals. As of 2024, 17 states have adopted a state-wide Portrait of a Graduate, capturing broader goals and shifting toward a more competency-forward signaling system.

In addition to competencies and credentialing, many high school and college students are securing valuable real-world learning experiences, including internships, client projects and entrepreneurial experiences. These experiences develop and demonstrate a wide range of important durable and technical skills in complex career-relevant contexts, but they aren't well represented, if at all, on traditional transcripts. They may appear on a resume but with weak

descriptions and no verification of rigor, learnings, and demonstrated competencies. Integrating CBE, credentials, and real-world learning experiences is a crucial next phase of signaling learning, namely, as Learning and Employment Records (LERs).

Employers also struggle to find and develop talent. [Nearly 60% of human resource and talent development professionals](#) struggle to find candidates with the ideal combination of technical and durable skills that match their organization's requirements. This indicates a significant workforce gap where students feel [underprepared for workforce and college](#), let alone [making decisions about what to do next](#); and the workforce finds [hiring to be expensive](#) and ineffective. The signals themselves (grades, online skill courses, etc.) don't serve as accurate barometers of competency. These related challenges are undergoing separate transformations in K-12/higher education, workforce, and hiring.

In order to support learners in identifying and pursuing meaningful pathways, finding ways to contribute to community, and to support employers in decreasing cost and risk while increasing efficiency and talent, credentialing ecosystems need thoughtful scaling and implementation involving state-level leaders and community-level leaders. These new signaling systems help learners communicate their capabilities and help employers determine capability in context.

CALLOUT BOX: So, what is a credential? [A credential is](#) “an attestation of qualification or competence issued to an individual by a third party) with the relevant authority or expertise to issue such a credential.” These credentials often comprise of more precise granularity signals that may be called micro-credentials. For the purpose of this paper, we will be calling all version credentials.

- **Certificates:** Issued by an industry association, certification body, or professional association. Certifications can expire if not renewed.
- **Diplomas:** Issued by formal education institution, typically high school or higher education.
- **Educational certificates:** Issued by a training provider or educational institution. These certificates typically do not expire.
- **Licenses:** Issued by a government agency, licenses are a legal authority to perform a specific occupation. Licenses can expire if not renewed.
- **Degrees:** These include bachelor's degrees, master's degrees, and certificates. Degree credentials are awarded by highly regulated and accredited institutions.
- **Badges:** A type of non-degree credential.
- **Industry-specific certifications:** A type of non-degree credential.

Employers seek durable/transferable skill validation. Skill assessments will be broadly piloted before skills credentialing becomes prevalent in high schools and postsecondary education. As skill credentialing expands, it will drive LER adoption.

- **A skill without application to a task is not inherently useful:** Verified and stored learning experiences will grow in value as they communicate the application and validation of important demonstrated skills. Additionally, they could gain early adoption in extended transcripts before LERs really take hold. Extended transcripts supplement traditional course-based transcripts with competency/skill proficiency data.
- **AI will support conversion and translation of experience to skill validation:** The data collected about experiences will be more articulate than the credential itself. This will increase the ease of adoption for colleges and employers, making the skills portable between multiple outcome frameworks.

Core Questions

- **Credentialing Learning Experiences.** How could a credentialing system capture valuable experiences to be communicable, portable and discoverable to complement skills credentialing in talent transactions?
- **Value of Credentials.** Are early examples of badging and credentialing proving valuable to the recipient, higher education institutions and employers?
- **Access to Credentials.** Will the value of skill and experience credentials only be fully realized when Learning and Employment Records replace transcripts as primary signaling devices? How might we increase access by creating stronger incentives for valuable work-based learning experiences in high school and college and ensure they complement existing course structures?

Skills Architecture

When describing skills, it's helpful to distinguish between three discrete skills frameworks: core, technical and transferable. A closer look at their similarities and differences reveals why effective communication requires unique inputs and incentives.

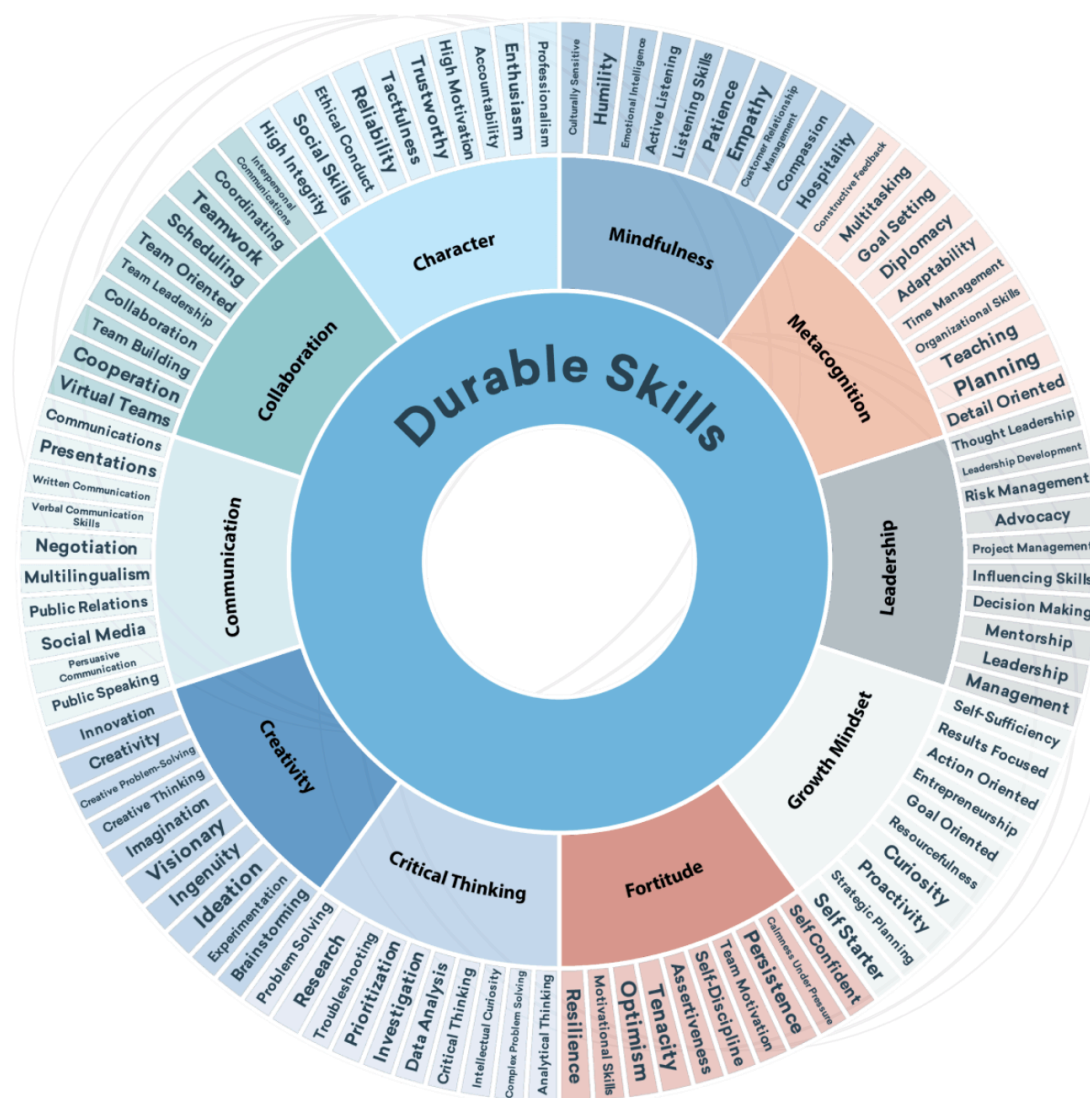
Transferable Skills (Applied or Durable)

Employers frequently report that new employees have a deficit of transferable skills. Some states, districts, and schools have advanced their focus on ensuring that each graduate demonstrates proficiency in these types of skills. We compiled numerous portraits of learners, teachers and leaders and made the case for community-wide portraits in a recent publication called [The Portrait Model](#).

As mentioned earlier, some of these examples exist at the state level: Iowa's [Universal Constructs](#), Utah's [Portrait of a Graduate](#), Nevada's [Portrait of a Learner](#), and South Carolina's [Profile of a Graduate](#) provide solid examples of transferable competencies that should be evaluated both in high school and higher education. Non-governmental organizations have also described sets of

durable skills, such as [XQ Learner Outcomes](#), [America Succeeds Durable Skills](#), and the World Economic Forum's [Top 10 Skills](#).

While states and other organizations play an important role, it is critical to consider community validation in this process, as skills and desires vary from community to community. Kansas City Rising and the DeBruce Foundation compiled a set of regional [Essential Skills](#) based on input from local employers and educators. Indianapolis' Job Ready Indy defined six regionally defined [workplace readiness competencies](#) and an associated curriculum. When students who enroll in this workplace readiness pathway demonstrate proficiency through the curriculum, they receive badges that count toward graduation requirements.



[The Durable Skills Wheel](#)

While transferable competency evaluators are rare, a few efforts are underway, such as the [National Career Readiness Certificate \(ACT\)](#), leading to a certificate, and [CTECS Workplace Readiness Skills](#) assessment, leading to badges. Additionally, CAE administers the [College and Career Readiness Assessment](#) to evaluate critical thinking, problem solving, and communication for middle and high school students.

The [Skills for the Future](#) Initiative, a joint project of Carnegie Foundation and ETS, includes [Mastery Transcript Consortium](#) and is developing new assessments and learner records that demonstrate mastery of both durable and core skills for employers and colleges. State partners include Indiana, Nevada, North Carolina, Rhode Island and Wisconsin.

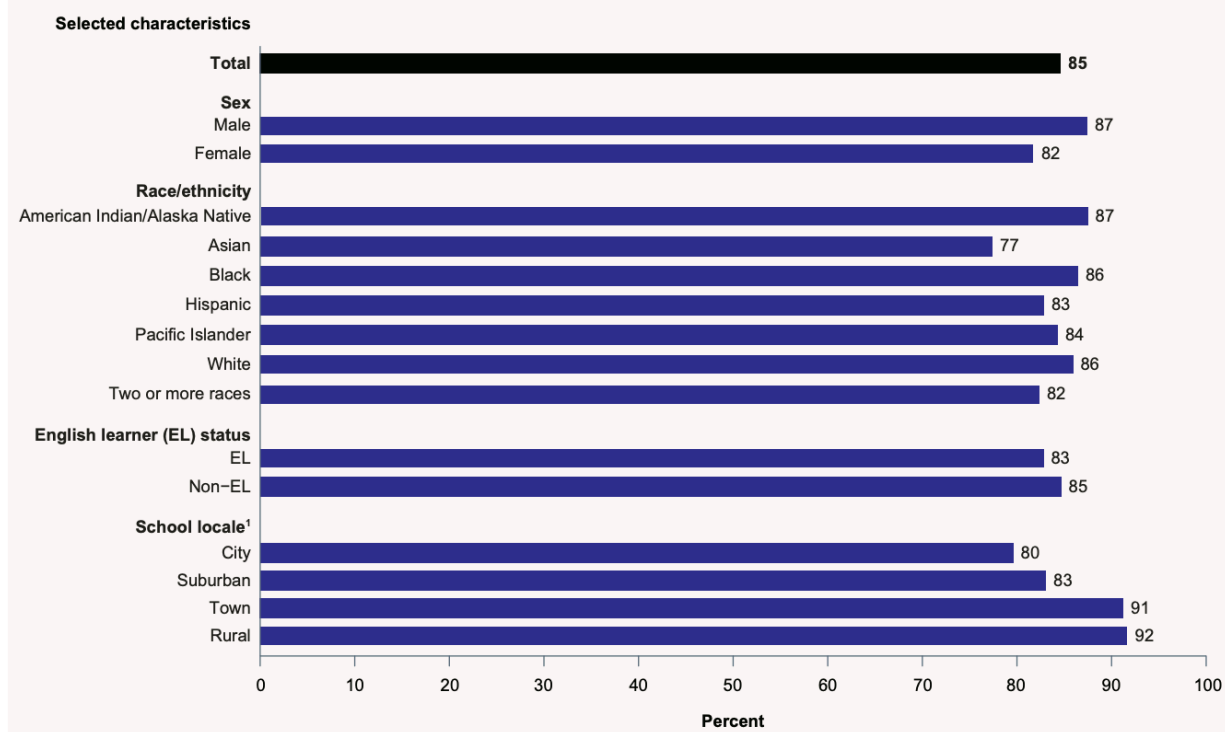
These skills can also be taught through mindsets and dispositions embedded in all workforce sectors, like entrepreneurship. The [Entrepreneurship and Small Business](#) credential from [NFTE](#) (and verified by Certiport) is an effective way to teach these skills alongside more technical skills like design thinking, finance and marketing. The certificate can then be submitted for college credit via ACE.

Technical Skills (Industry-Recognized)

Technical skills are well-described in the [CTE Career Clusters](#) and implemented in most U.S. high schools. Leading to [Industry-Recognized Credentials \(IRCs\)](#), proficiency in these competencies may not lead to a higher education degree but does provide specific skill validation for career pathways, improving hiring rates. Unfortunately, [many students take disconnected single CTE courses](#) rather than becoming a “completer” of three courses in a sequence, therefore not reaching mastery, not earning the IRC and not progressing along a pathway.

FIGURE 3.

Percentage of public and private high school graduates who earned at least one Carnegie credit in career and technical education (CTE) courses in high school, by selected characteristics: 2019



[Data from NCES.gov](https://nces.gov)

The introduction of shorter-duration, high-relevance IRCs may help increase IRC completion. Additionally, ensuring that a broad spectrum of CTE programs is available—especially in computer science and other STEM disciplines—provides equitable access to lucrative careers in the future. Appropriate staffing, reputation, access and replication pose [challenges](#) to this long-standing and well-funded credentialing program within the United States that focuses on technical skills.

In addition to CTE, [work-based learning \(WBL\)](#) is on the rise. WBL is defined as: “sustained interactions with industry or community professionals in real workplace settings, to the extent practicable, or simulated environments at an educational institution that fosters in-depth, firsthand engagement with the tasks required in a given career field, that are aligned to curriculum and instruction.” within the Perkins V federal legislation. There is a high level of interest in this type of community and industry-connected learning and Indiana, Ohio, Kansas City and other states and regions have begun incorporating this kind of learning into their graduation requirements, despite the difficulty of capturing proficiency along traditional forms of measurement. Participation in work-based learning programs remains low due to the complexity of implementation and scale, but intermediaries like [GPS Education Partners](#) are helping to make these connections easier and long-lasting.

Core Skills

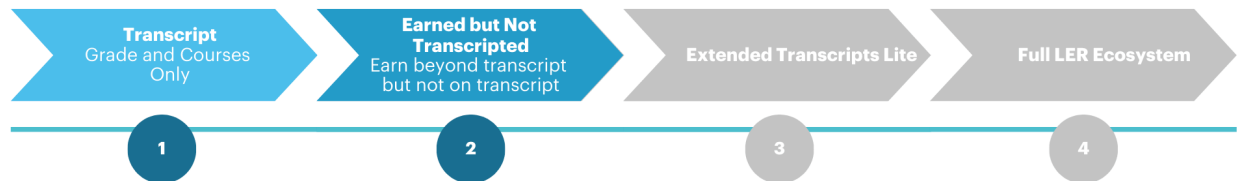
In the public sector, educators link course content to specific standards, and many districts track how well students meet these standards, particularly in elementary school. Ideally, completing a course should demonstrate a student's proficiency in these areas. However, in practice, especially in higher grades, assessments often rely on traditional quizzes, tests, and essays. These contribute to an overall course grade but fail to clearly show how they relate to the standards.

Just like the [career clusters](#) in the technical CTE areas, core skills should focus on English language arts, mathematics (including data science, finance, and statistics), social studies (e.g., National Council for the Social Studies [civics competencies](#)), science ([NGSS](#) already has a set of disciplinary core ideas, practices, and cross-cutting concepts wrapped up into a single standard set—which could become a competency), arts, second language, etc. [XQ Competencies](#) integrate some elements found in standards with transferable competencies in an effort to expand transferable competencies into domain areas.

ACT composite scores from 2023 (English, math, science, reading) reached a [32-year low](#) in college readiness. Given these reported gaps around core skills in graduates, it makes sense to expand credentials to include these skills in addition to technical skills found in CTE programs and the durable skills discussed above.

Existing Trends in Credentialing: Stages 1 and 2

The current credentialing ecosystem primarily consists of Stage 1 signals, the transcript consisting only of grades and courses, and Stage 2 signals, the opportunity to earn beyond transcript but not on transcript (CNA, CTE certs).

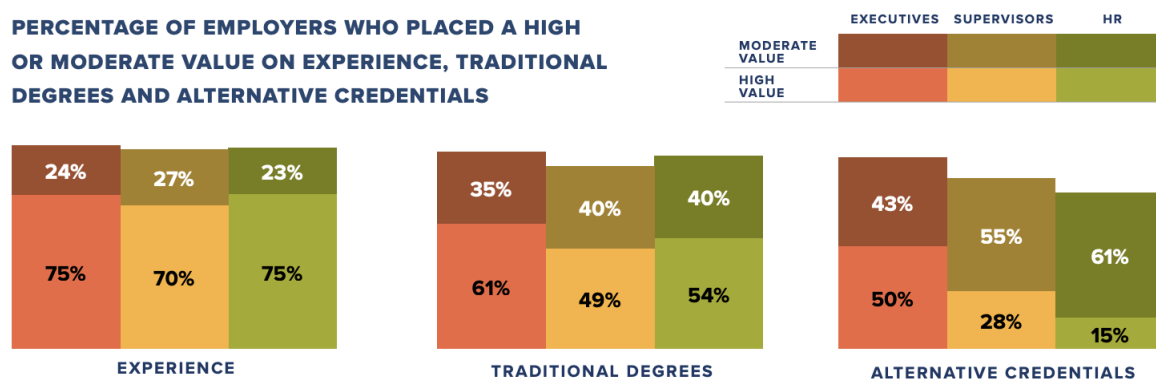


This publication focuses primarily on the adoption of credentials by education institutions. That being said, because this is a diverse market, human resources and employer learning and development are identified throughout as inextricable pieces of the broader challenge with varying acceptance and readiness.

Credentialing Trends in Workforce and Human Resources

Many emerging competency and skills-based solutions for students are separate from the solutions in education or hiring. While a common standard for learner records is a useful representation of skills, full implementation at the K-12 level falls short of its promised impact if HR professionals don't use these LERs and if the LER isn't easily updated with ongoing upskilling and reskilling. That being said, credentials are more readily accepted by employers than education institutions, and both HR teams and leadership value well-documented experiences (internships, apprenticeships, etc.) more than alternative credentials. A [SHRM study](#) of 5,000 professionals found that executives are more than three times more willing than HR professionals to value an alternative credential.

PERCENTAGE OF EMPLOYERS WHO PLACED A HIGH OR MODERATE VALUE ON EXPERIENCE, TRADITIONAL DEGREES AND ALTERNATIVE CREDENTIALS



There is progress, however. At the federal and state levels, shifts to remove degree requirements have sparked a shift to skills-based hiring in [numerous states](#) and sectors across the country. This method of hiring is viewed as a more viable and efficient alternative to relying heavily on degrees as a skill proxy. That being said, Josh Bersin, a leading voice in HR, [shared in a podcast](#) that “the simplistic idea that we’re going to build a skills model and do this just based on skills is ridiculous.” He continued, “I remember when I talked to Ashutosh at [Eightfold](#) about this many years ago, and he made comments to me like ‘We know what you’re good at because of who you worked with, where you worked and when you worked in a particular job or company because we know what tools, technologies, problems, solutions and other people were there at that time.’”

Similarly, this skills-based transition has not yet instilled confidence in employees that they would be able to make internal moves rather than seek new jobs.

[Recent studies from LinkedIn Learning](#) have shown that 90% of organizations are concerned about employee retention and have found that workplaces that commit to providing learning opportunities have an outsized impact on retention as well as internal mobility, promotion from within and other desirable indicators of employee satisfaction and engagement. By increasing the visibility into how skills stack into roles and how skills are demonstrated, employees will have clearer pathways to reskill, upskill and move within the company.

While slow to scale, companies with a history of internal upskilling and talent development are perhaps the furthest ahead in adopting new technologies to fuel this transition to skills and skills recognition. Although effective at communicating skills and badging infrastructure, many of these solutions are unique to the specific company (i.e., branded competencies) and are not largely accessible or transferable.

Programs like [IBM SkillsBuild](#), [Grow with Google](#), [Salesforce Trailhead](#) and others open the doors for current employees and outside professionals to explore the many possibilities of technical skills.

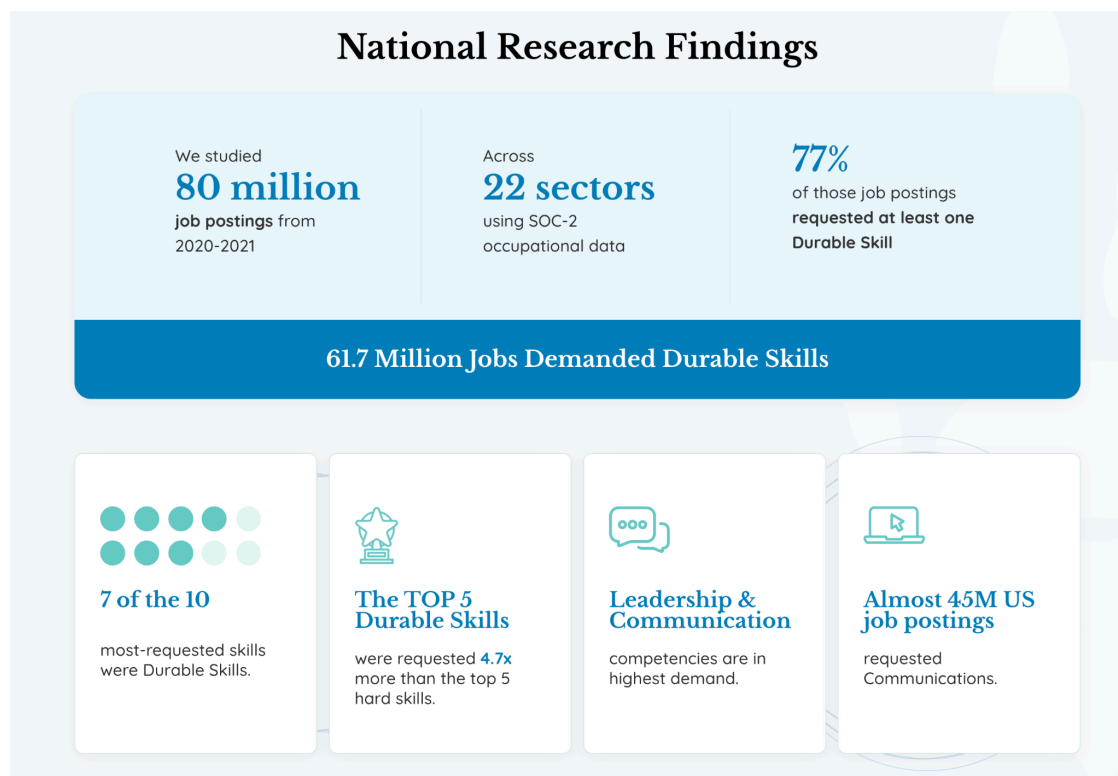
Additionally, the Multi-State Collaborative on Military Credit and [MIL-CRED](#) (Military Credentials), the [U.S. Army](#) leads the way in the shift to competencies and LERs in the U.S. They began prototyping this credentialing ecosystem in 2017, and it meaningfully captures soldiers’ learning outcomes for Army leaders, talent managers and soldiers themselves. The credentials are portable both in and out of the Army.

How might all workers have the opportunity to gain meaningful experience on the job to further increase their opportunity for growing wages, leadership and technical skill in broadly communicable ways?

Secondary Education and Higher Education

Every learner that completes a program of study receives a credential, (although they are not always referenced as such). A high school diploma is an example of a credential with low fidelity for employers. While it validates that the learner has completed a set of courses that presumably cover standards and skills, it is, at best, a proxy indicator of learner proficiency, capability or even experience.

The current assessments of core skills tend to be weak signals for long-term success, while durable skills (such as communication, collaboration, leadership, and project management) are recognized as increasingly important for the workplace and rarely get evaluated. While over a million different [credentials](#) are available for learners from high school through employment (often focused on technical skills), many are weak proxies for skills not widely valued.



[Data from America Succeeds](#)

To create a more robust and articulate credentialing system, we can learn from the existing effective pathways, such as Certified Nursing Assistant (CNA) Licensing. While the [CNA requirements vary state by state](#), to get a license in Alabama requires the following:

- Complete a state-approved CNA training program
- Pass a competency evaluation program
- Minimum 75 hours of training with at least:
 - 16 hours of clinical work

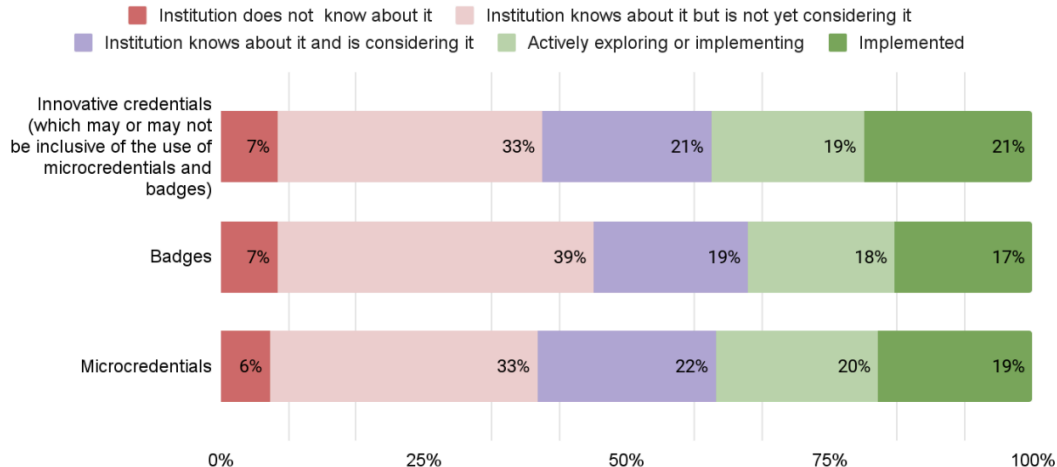
- 16 hours of laboratory experience
- Pass the nurse aide competency exam
- Work at least 18 hours every 24 months to maintain certification

This process effectively assesses for both competency and experience, ensuring numerous durable, core and technical skills gained along the way.

At the college level, a recently formed [coalition of a dozen higher education associations](#) believes that digital credentials and LERs could even help change the narrative around higher education. Additionally, the [American Association of Collegiate Registrars and Admissions Officers \(AACRAO\)](#) is committed to transitioning pre-existing education credentials into open data standards to both help store credentials and support admissions processes.

Based on survey responses and supporting data from focus group sessions held at the AACRAO Leadership meeting in June 2023: While there is a technical distinction among all the survey terms, “badges,” “microcredentials” and “alternative credentials” are used most frequently. As such, responses reveal over 60% of respondents’ institutions are considering, exploring, or implementing some form of innovative credential. [Learn More](#)

Figure 2: Description of the current state of innovative credentials

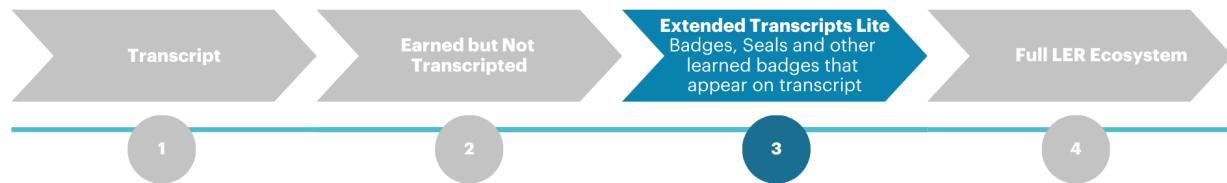


Additionally, K-12 teacher development is increasingly promoted through micro-credentials like those hosted by [Digital Promise](#). Teachers select, develop and demonstrate priority skills. A micro-credential is issued to verify skill demonstration. This allows school systems to verify teacher skills, regardless of where and how they learned them. Transferability is improving, particularly across [The Micro-Credentials Partnership of States](#) with consistent standards of quality. Teacher micro-credentialing represents the slow organic development of a skills credentialing ecosystem with signals valued by learners, employers and issuers.

How might all learners have access to powerful real-world learning experiences that are valued by employers and higher education?

Extending the Transcript: Stage 3

Shifting from Stage 1 and Stage 2 to Stage 3 requires a commitment to access and high-quality learning experiences. Stage 3 is described as extended transcript lite (e.g., endorsements, awards, credentials, experiences mentioned on the second page of a transcript).



To transition to the later stages in the Credentialing Continuum, we must **expand access** for all learners, particularly those on the margins; **expand value** to both the learner and the workforce and **expand experiences** as a core component of both verifying skills and encouraging community connection.

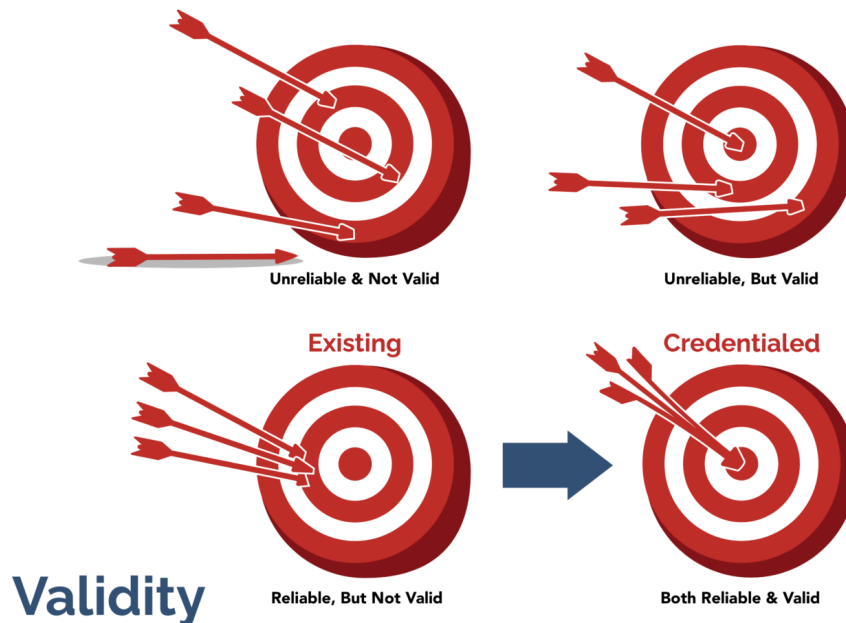
Expanding Access

A credentialing and LER ecosystem has the potential to be an economic mobility engine. To make this a reality, it is critical to reduce friction in systems that have not worked for marginalized learners rather than starting with existing systems. This increased access is possible through formal durable skills requirements, documentation and validation platforms, and policy. A Credentialing Ecosystem promotes and increases access to real-world learning experiences for every student (either at school, region or state level) and maintains a high-quality level of these experiences. Portraits of Graduates exemplify how an organization can increase the focus on durable skills.

Validating Credentials

To ensure validity and reliability within proficiency determination on transferable competencies, a network of trust must exist within the system. Three levels of evaluation should be considered: Educator, Calibration, and External.

[For more on validating credentials.](#)



While it may seem like a significant jump to get to a full LER ecosystem, as of 2024, roughly 20% of states (e.g., [Indiana](#), [New York](#), [Ohio](#), Texas, Alabama and North Dakota)) have committed to adding new graduation requirements that include some combination of experiences or credentials that supplement a traditional high school transcript. Additionally, a handful of states, such as [Alabama](#), [North Dakota](#) and [Wyoming](#) are piloting state-wide credential wallets to connect K-12, higher education and the workplace through a skills-based system.

While [82% of recently surveyed higher education institutions](#) offer some Credit for Prior Learning programs, CPL is far less common (outside of normal transfer credit) in the secondary space. Additionally, CPL is most often applied for either previous course completion at other institutions or proxy assessments (such as IB, AP, CLEP, etc.). Recently, [Western Governors University acquired Craft](#), a provider of apprenticeship and on-the-job training, which expands an already leading suite of CPL and job-embedded learning offerings.

Formal Durable Skills Requirements

[Indiana Graduates Prepared to Succeed \(GPS\)](#) is an innovative statewide initiative to set students up for success. This resource provides a rich dashboard and map of implementation throughout the entire K-12 experience. For example, in high school, Indiana GPS is committed to “expanding access to intentional college credit opportunities that allow students to earn transferable, stackable credentials before graduation, as well as high-quality work-based learning experiences.”

These credentials and experiences are in service of five key characteristics that “indicate a student’s preparation for success after high school.”

- Academic mastery

- Career and postsecondary readiness (credentials and experiences)
- Communication and collaboration
- Work ethic
- Civic, financial and digital literacy

[Ohio's Graduation Seals](#) are 12 diploma seals to help students demonstrate their academic, technical, and professional readiness for careers, college, the military, or self-sustaining professions. Each seal represents essential knowledge and skills for post-high school success, and students must earn at least two seals, including one state-defined seal, to show their readiness. These seals promote the development of critical skills valuable for students as they transition beyond high school.

Examples of Documentation and Validation Platforms

Adopting platforms that support the full shift to a credentialing and LER ecosystem is the second element to increase access. In an LER ecosystem, every learner will own and have access to their LERs, stored in a digital wallet, as a record of all cataloged learning experiences and skills credentials. This will allow them to grant permission to tailor their LER in support of talent transactions (i.e., enroll, enlist, employ) without requesting transcripts from registrars from each institution attended.

This work is already underway, as represented by a handful of states that have already launched LER projects. The [C-Lab](#) is a Colorado-based lab that aims to “incubate and launch a statewide Colorado Learning Ledger and Skills Graph then publish a report for other states to implement similar 21st-century education and workplace infrastructures.” Alabama’s [Talent Triad](#) program and [North Dakota's digital wallet](#) are other state pilot programs.

Below are a few examples of LER technology solutions.

- [SOLO](#): The SOLO platform is designed to “create a positive impact by transforming how skills and credentials are recognized, validated, and utilized across industries.”
- [LearnCard](#) by [Learning Economy](#) can issue, earn, store and share credentials, including IDs, Social Badges, Skills, Achievements, Work and Learning History. Through integration with more than [250 data streams and services](#), this tool is a comprehensive Learning & Employment Record (LER) ecosystem that provides effortless deployment of LERs, digital wallets, data clouds, analytics dashboards, and data integrations, bolstered by robust customization and support options. It is fully learner and employee-centered.
- [Territorium's](#) LifeJourney is an “AI-powered, interoperable toolkit that enables students to take control of their digital credentials through personalized learning, assessments, and career opportunities with a data-rich, skills-based comprehensive learner record (CLR) with built-in badging capability.” Grand Valley State University (GVSU) uses Territorium to badge classes.
- [Greenlight Credentials](#) GreenLight is an “advanced technology platform that simplifies records management and helps students and educational institutions navigate a student's

career-connected pathway by fostering meaningful connections through collaboration with schools, foundations, and communities.”

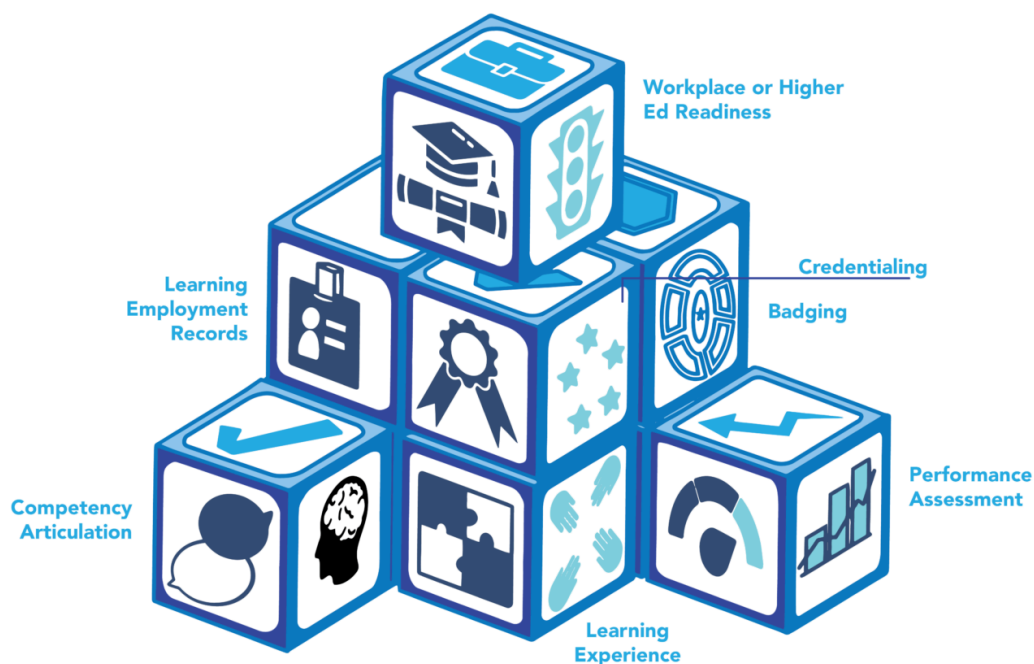
Expanding Experiences

How do we know when a learner has had a valuable learning experience? Capturing context data about the sector, skills (core, technical, durable), duration and other connections of the experience and mapping it to skills developed/demonstrated that lead to credentials of completion is one way. Allowing experiences to serve as valuable, verifiable, and recorded evidence of skills and competencies acts as prerequisites for earning skills credentials, serving as proof of the proficiency demonstrated around durable/transferable, core or technical skills.

How to Credential

To build capacity for an ecosystem-wide credentialing system, building blocks need to be in place—including articulating, designing, validating, badging and credentialing, documenting, and matching/aligning. Even with these elements established, a valid marketplace must exist for the earned credentials to best serve the individual learner.

For more on [how to credential](#).



Building Blocks

Historically, assessment has been biased, subjective and distorted into single-letter grades. With a rich credentialing ecosystem, removing some of this bias and subjectivity and increasing fidelity to evaluate actual learner skills is possible. Doing this well would require enormous data mobility and more transparency with personal data, but ultimately, it would serve the learner. In this process, it is critical to measure both the skills gained and the skills applied (experience) to ensure fidelity of the competency. These might be described as the following models: a “Skills Disconnect Model,” where skills are acquired void of context or direct application, an “Experiential Model,” where the model is rich with experiences but no connection to or measurement of skills, and a “Proficiency Model,” which excels in both experience and skills categories, making the skills transferable and the experiences specific and contextual.

Model	Skills	Experience	Outcomes
Skills Disconnect Model	Yes	No	Skill acquisition with no application
Experiential Model	No	Yes	Experience rich with no connection to skills
Proficiency Model	Yes	Yes	Experience rich with application over multiple contexts

Assessing Skills Within Experiences

These skills within these experiences can be assessed in various ways (Direct Assessment, Performance Assessment or Skill Extraction). A combination of these three approaches will surface in the emerging assessment landscape.

Direct Assessment

Employers seek candidates who not only possess technical skills but also exhibit transferable skills critical to job performance. However, they often lack the time to thoroughly evaluate these skills, underscoring the need for straightforward and reliable assessment systems. While many agree on these skills, the language and explanations must remain accessible. [SHRM's toolkit](#) offers insights into a skills-first approach to hiring.

- [Mursion](#): Uses immersive training simulations with human-powered avatars, allowing learners to practice difficult conversations and build impactful skills safely.

- [BodySwaps](#): Offers an immersive training platform that focuses on durable skills development and is accessible via VR, PC, and mobile devices.
- [AstrumU](#): Uses AI and machine learning to create validated skills profiles by compiling data from a learner's education, credentials, and employment history. This skills extraction concept provides an alternative to directly assessing durable skills (or technical and core skills).

In the education sector, [Education Design Lab](#) uses the predetermined algorithms in a virtual reality online learning platform ([VSBL](#)) to assess a set of [durable skills](#), including critical thinking, collaboration and creative problem-solving. It involves co-designing and validating micro-credentials with input from institutions and employers.

Performance Assessment

In 2022, Data Quality Campaign reported that nearly a dozen states had begun transitioning to "[through-year assessments](#)." Through-year assessments, or progress monitoring systems, combine ongoing interim and traditional summative assessments into a unified structure. Interim assessments provide timely, actionable feedback to teachers and families, enabling them to support students' learning in real time. At the end of the year, students receive a final summative score that informs students and satisfies accountability requirements. Key advantages include faster results, more valuable data for adjusting instruction and a focus on growth. States, including Alaska, Georgia and North Carolina, have leveraged federal money to establish these systems and others, including Texas and Virginia, have established these systems through legislation.

Efforts in evaluating skills include public initiatives that pioneered this shift towards performance assessments (critical structures to evaluating durable skills). While these efforts primarily addressed standards, they emphasized the need for more authentic assessment.

- [New York Performance Standards Consortium \(NYPAC\)](#) is a comprehensive and long-standing Performance Assessment Consortium. Teacher and learner-directed learning experiences, professional development, performance assessment tasks, and external/internal validation via [rubrics](#) across all discipline areas.
- [California Performance Assessment Collaborative \(CPAC\)](#) is a California initiative convenes educators, policymakers, and researchers to develop authentic assessments that support student learning. CPAC uses performance assessments, such as projects and portfolios, to measure applied knowledge and [21st-century skills](#).
- [Performance Assessment of Competency-based Education \(PACE\)](#) focuses on deeper learning through a competency-based approach in New Hampshire. It blends local, common and state-level assessments to promote critical knowledge and skills.
- [Performance Assessment Resource Bank](#) is hosted by Envision Learning Partners and is a database of performance assessment examples built through a collaboration of the Educational Policy Improvement Center (EPIC), the Center for Collaborative Education

(CCE), the Literacy Design Collaborative (LDC), Envision Schools, Summit Public Schools and others.

Skill Extraction

According to Peter Janzow of Credly, “Tasks are increasingly the language of work—how people define work and jobs and roles, the relationship with tasks and skills, proficiency levels of skill related to particular jobs and job roles at particular levels.” He went on to share that this level of tasks is also where we see humans being replaced and augmented by machines. A clear articulation of skills helps select the right person and machine for the task.

Platforms like [LivedX](#) and [CompetencyGenie](#) are creating products that allow students to submit learning experiences and have an AI tool extract the number of valuable skills, reducing the administrative burden of these tasks. When coupled with verification, this AI-enabled extraction and identification of skills becomes a valuable tool for matching candidates and communicating proficiencies. “Skills can be described in meta-data using AI and triangulation with a variety of experiences to confirm/verify that you have a particular proficiency in a particular skill,” said Meena Naik of Jobs for the Future (JFF).

[Solid Project](#) enables the credentialing of military experiences by converting them into badges. These badges, which represent skills learned, are stored in a digital wallet. The credential provider, who offers these experience-based badges, verifies the individual based on their Joint Services Transcript (JST) which documents their military training. They also ensure that the metadata attached to each badge aligns with civilian manufacturing standards.

A more accurate learner proficiency profile emerges through a combination of direct skills assessment, embedded performance assessments and skills extraction.

Signaling Valuable Experiences

In addition to skills assessment, increasing the signals of valuable experiences also leads to expanded opportunities.

[The Real World Learning](#) (RWL) initiative in Kansas City consists of a regional set of agreements called “[Market Value Assets](#).” Participating districts aim to graduate all students with at least one of these assets. These assets are entrepreneurial experiences, client-connected projects, internships, college credit and industry-recognized credentials. This regional understanding increases employer readiness and student access and creates a flurry of regional activity. The shared definitions empower learners to document and capture their ability to apply skills in context.

[New York City Seal of Civic Readiness](#) is an official acknowledgment that a student has achieved a high level of proficiency in civic knowledge, skills, mindset, and experiences. This distinction on a high school transcript and diploma indicates the student's understanding and commitment to

participatory government, civic responsibility, and civic values. It also demonstrates to universities, colleges, and future employers that the student has completed a civics or social justice action project, highlighting the importance of civic engagement and scholarship.

[The Kentucky Civil Seal](#) can be earned at all grade levels when a student “exhibit[s] their understanding, application, and reflection upon local, state, and national governance; commitment to democratic principles and promoting the common good; informed participation in civic spaces and reflection upon their role in modern civic life.”

[Colorado Seal of Climate Literacy](#) requires meeting minimum high school graduation requirements, taking two environment-related courses and completing a self-directed experiential project that emphasizes real-world skills development.

[Cities of Learning](#) Digital Open Badges are micro-credentials that recognize all forms of learning wherever it happens. These badges are provided by OpenLearn, Open University’s free badging platform, and as of 2023, they have awarded over 250,000 badges to students. This initiative helps learners in the UK area communicate what they’ve learned to others, while also enabling cities and places to connect and amplify their learning offer.

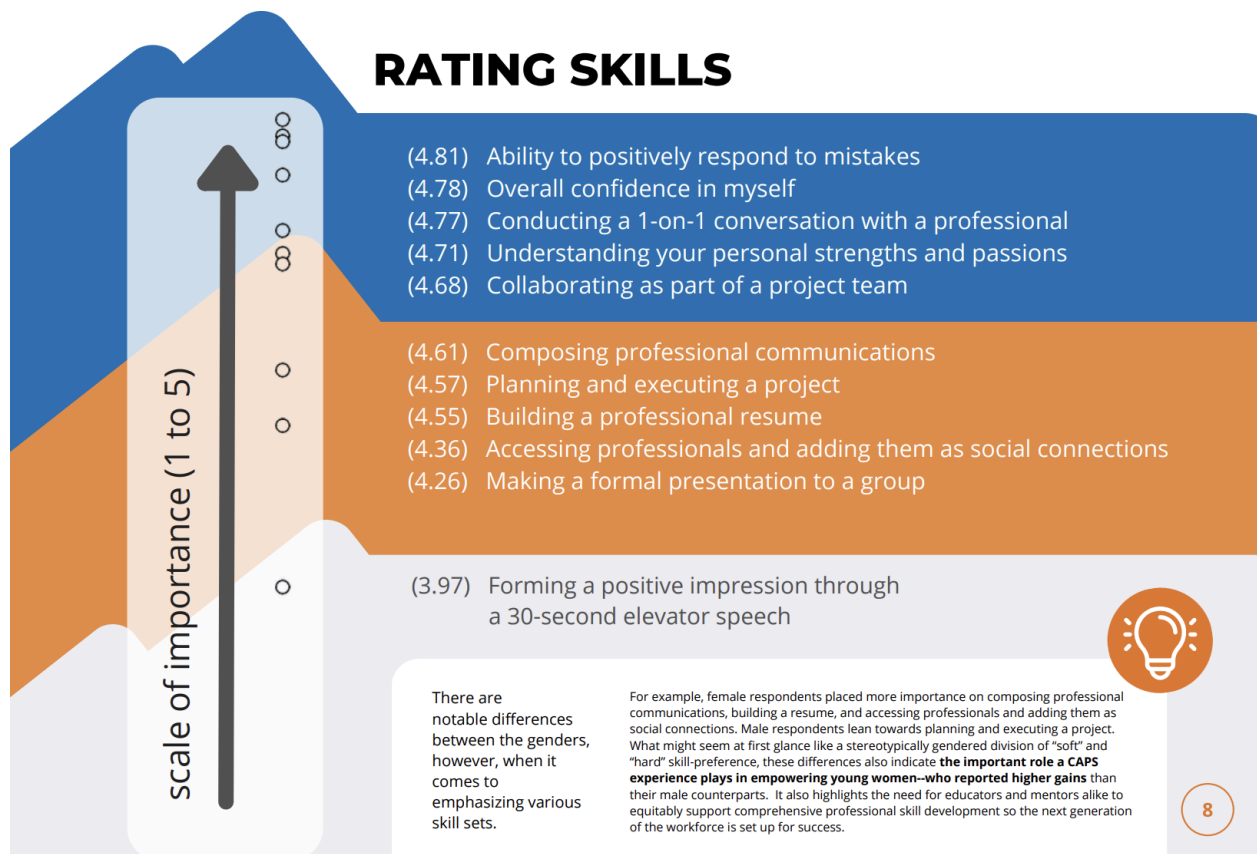
Expanding Value

For incentives to receive and award credentials, first they must be valued by employers, higher education and the recipients themselves (i.e. a student showcasing a skill credential with a record of experiences to increase the probability of higher education admission/success or hiring). This more accurate skills-based assessment of talent benefits employers through quicker hiring, keeping new employees out of work for shorter periods of time, and reducing retraining costs. In 2020, [Laffer Associates' research](#) estimated that a shift to verified and validated LERs would provide aggregate gains to the U.S. economy of more than \$400 billion.

According to Meena Naik, JFF and formerly of the University of North Texas, value is increased when we apply skills to tasks, meaning a skill in isolation signifies less than when connected to an experience. Take communication, for example... “what does communication look like for a business organization versus a finance organization? There's a lack of that context and that data. That's the data that can live in these credentials.”

Another benefit of credentialing is that students with valuable real-world and work-based learning experiences have increased confidence and often increased success in finding opportunities after (and before) graduation. Naik continues, “We're hedging our bets on the person receiving the credential, finding value in it. And it increases their self-efficacy. It increases their resilience. And we saw this. We saw it in GPA increases. We saw it in persistence. We saw a stronger likelihood of people returning to their degrees because they were getting these things and starting to see the real-life applicability and all of the things they're actually learning.” [This research](#) (and [here](#)) was conducted at the University of North Texas.

In addition to credentials boosting confidence and self-efficacy, the experiences offer a similar boost. The [Center for Advanced Professional Studies \(CAPS\) Network](#) is a national network of programming that immerses high school and higher education students in a “professional culture, solving real-world problems, using industry-standard tools and are mentored by actual employers, all while receiving high school and college credit.” [In a recent report on alumni satisfaction](#), learners expressed high increases in overall confidence, resilience, self-knowledge and collaboration through the professional experiences they participated in. (See below).



Credentialing the skills gained in these valuable learning experiences and capturing these experiences so that they can be easily recorded, verified and communicated will increase value for all learners.

Examples of Education Systems Communicating Experiences

[Riipen](#) is a higher education work-based learning platform that hosts client projects for universities. Students conduct projects framed by business partners and receive detailed feedback from employers and educators, which include skill verification and [Achievements](#) awarded to students based on project category, industry, action, frequency, and other factors. [Riipen learners report](#) enhanced confidence and skill application, critical thinking and growth of a professional network. Employers cited a 78% growth in business efficiency and innovation and a 66% improvement in their talent development pipeline. Perhaps most importantly, each additional learning experience through the Level UP program increased the likelihood of receiving an employment offer by 19%, validating the idea that more experiences equals more value to employers.

[The NAFTrack Diploma](#) is an employability credential that signals to employers that a learner has demonstrated job readiness. Learners in the 620 NAF career academies earn the diploma by

completing the pathway curriculum and conducting a 120-hour internship with skills verification by a workplace supervisor. According to their website, “78% of NAF students that participated in a work-based learning experience indicated it helped them build career skills.”

[LivedX](#) is a platform that allows learner experiences (client projects, classes, etc.) to stack into a certificate in aggregate. Once the certificate is gained, it can be exchanged for college credit, resulting in real value for the learner. This college credit is currently provided by the University of Colorado Denver. This credit also helps expand enrollment pathways for universities as many look at dropping enrollment demand in the upcoming school years.

Business Provider Examples

IBM has been focused on the development and credentialing of new technology skills for over a decade - including the launch and development of the P-TECH model. [Lydia Logan](#), Vice President, Global Education and Workforce Development, Corporate Social Responsibility, notes the IBM contributions to the [Skills Build](#) platform including commitments to training millions of people in AI, green skills and other areas by 2030, emphasizing the importance of credentials for workforce development. This platform increases the chances that employees will upskill and stay competitive in the rapidly changing job market. By eliminating the four-year degree hiring requirement at IBM, diversity increased in their applicant pool.

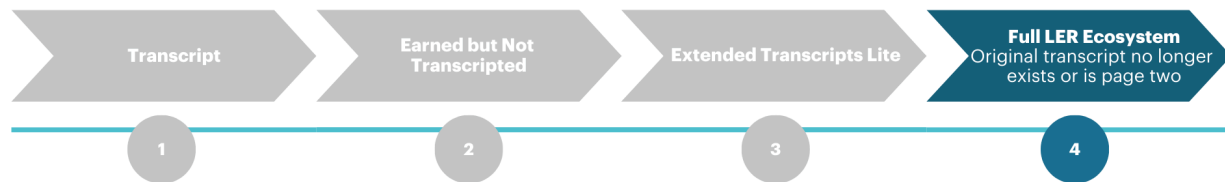
AT&T employees completed more than 2.6 million online upskilling courses since a [2018 retraining](#) initiative started, earning more than 174,000 certifications. Additionally, employees are increasingly “able to immediately apply their new skills to existing positions or transition into a new role,” according to the company, which says 40 percent of the 40,000 jobs filled at the company in 2016 were filled with candidates found internally. ATT recently introduced nanodegrees in Data Science and Analytics, Machine Learning and Artificial Intelligence, Programming and Development, Android Developer and iOS Development.

Velocity Network connects more than 80 human resources and education companies looking to pioneer an open credential skills-based market, facilitating a variety of improvements that make the navigation of the career landscape easier for individuals. [The network believes that](#) “this data will be stored in individual career wallets, essentially digital CVs controlled directly by employees and students themselves, with data stored on their own devices or by their trusted wallet provider.” This data can then be shared by the owner with prospective employers and/or educational institutions.

Google: Among many upskilling offerings within Google’s suite of resources, Grow with Google boasts great results both within Google’s own hiring and external organizations. [A recent survey shows](#) that 75% of program graduates report a positive career outcome (e.g. a new job, promotion, or raise) within six months of completion. The Google Career Certificate Program offers online, on-demand training in fields like data analytics, project management, IT support, UX design, digital marketing, and cybersecurity. These certificates are used in colleges, universities, and high schools

and are recognized by many employers as valuable credentials. The American Council on Education (ACE) recommends these certificates for college credit, allowing high school students to earn college credits. Google's employer consortium posts jobs directly to Grow with Google job boards, making it easier for certificate holders to find relevant job opportunities. Google also integrates AI essentials training with career certificates to keep learners updated with the latest technological advancements. [Learn More](#)

A Full LER Ecosystem: Stage 4



Learning and Employment Records (LERs) will become the primary means for documenting and signaling capabilities, particularly for talent transactions (i.e., enrolling, enlisting, employing). LERs will emerge in ecosystems where learners, credentialing institutions, and LER recipients all find value in the security, portability, and reliability of the information exchanged.

The landscape analysis of emerging LER ecosystems yields four observations:

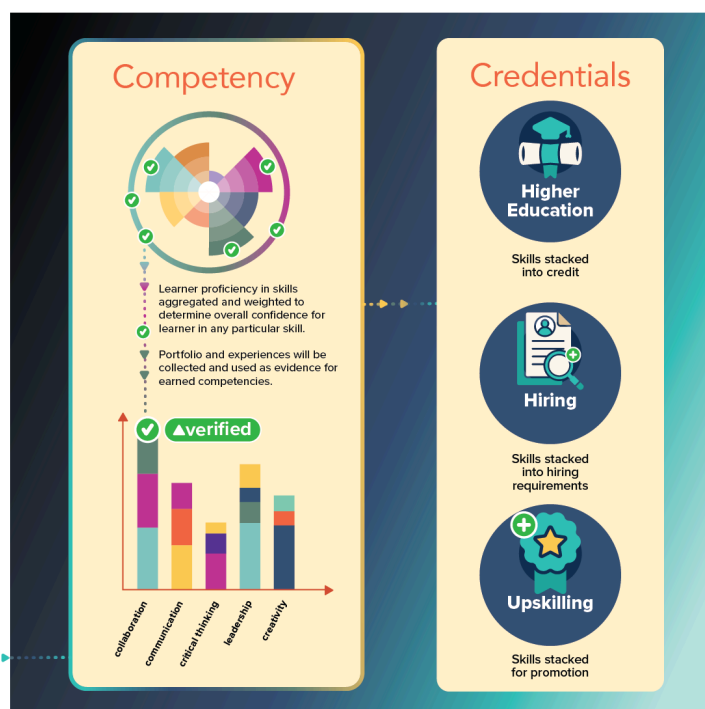
- **Validating Diverse Learning Experiences:** An effective credentialing and LER ecosystem acknowledges that learning happens in various settings beyond traditional classrooms. A wide variety of learning experiences are valuable and should be a part of an LER.
- **AI-Powered Skill Identification and Competency Mapping:** AI will play a crucial role in analyzing learning experiences and associated evidence. The AI tools will be uniquely capable at extracting, organizing and then storing skills developed and demonstrated within each experience.
- **Moving from Skills to Credentials:** Credentialed skills will be the core currency of employment and admissions, while verified experiences will be the building blocks and leading evidence of context and skills applied.
- **Building a Competency Profile:** For skills credentials to be valuable, a learner's competency profile needs evidence of the applied skills (experiences) and should have a variable rating system to account for the provided evidence and accommodate a range of experiences.

A Taxonomy for Experience Credentialing

An effective credentialing and LER ecosystem acknowledges that learning happens in various settings in and beyond traditional classrooms. A variety of quality learning experiences are valuable, not well represented by skill credentials, not verifiable in a resume and, as a result, should be a part of an LER.

These valuable learning experience categories include:

- **Employment:** Work experience where the learner is paid.
- **Work-Based Experiences:** Apprenticeships, internships, client-connected projects.
- **Entrepreneurial Experiences:** Learner-identified opportunity designing solutions and delivering value to a community, such as starting a business to social impact projects.
- **Civic Engagement:** Participation in civic/community organizations and political activities.
- **Service:** Participation in addressing a community need (typically identified by someone else).
- **Independent:** Independent learning experience consists of inquiry (science fair), adventure (travel) and expression (art, music, language). These are typically self-directed experiences.
- **Course or Class:** (high school or college credit or certificate): Completing courses will continue to be a valuable way to develop skills and competencies.
- **Extra-curricular:** These experiences include participation and awards in sports, speech and debate, clubs, drama, etc.



A learner's life experiences would be submitted and then stored in their LER. In each instance, the submitted experience and corresponding evidence (portfolios, multimedia artifacts, reflective dialogue (e.g., [SchoolJoy](#)) and qualitative/quantitative entry) would be weighed on a **low to high confidence scale**. For example, a learner who submits an experience (and evidence) of starting a non-profit in high school to provide blankets to housing insecure community members will have a higher confidence rating in certain durable skills than someone who submits a similar experience with fewer pieces of evidence or a smaller scope of project (e.g., participating in a one-hour service

learning experience serving food to housing insecure community members). These experiences would be verified using endorsements from supervisors, portfolios, qualitative entries, etc. using Experience Quality Indicators (EQIs).

- **Responsibility:** What was your role in the experience? How available were resources, mentorship and collaboration?
- **Complexity:** How difficult and intricate was the experience? How long was the experience?
- **Novelty:** Who created the experience? Whose idea was it?

Additionally, these experiences would supply metadata such as sector, skills (core, technical, durable), duration, org type, geo, etc., to support the verification process and communication with Higher Ed and employers.

Experience Quality Indicators

Category	Level 1 (Low)	Level 2	Level 3	Level 4 (High)
Responsibility	Minimal involvement; completed tasks as directed by others. No need for resource management or collaboration.	Some responsibility; contributed to tasks but relied on guidance from others. Limited use of resources and occasional collaboration.	Significant responsibility; took initiative in some areas, actively sought resources and engaged in collaborative efforts.	Full responsibility; led the experience, actively managed resources, sought mentorship, and facilitated extensive collaboration.
Complexity	Simple tasks; required little skill and were completed in a short time frame.	Moderately challenging; involved a few complex elements but manageable with some effort over a moderate time period.	Complex; involved multiple challenging elements requiring problem-solving and sustained effort over an extended period.	Highly complex; involved intricate, multi-layered challenges, required advanced skills, and extended over a significant duration.
Novelty	Followed an existing framework or idea created by others. No original input.	Adapted an existing idea with minor modifications; some elements were personalized but largely followed established practices.	Created a new approach or significantly modified an existing concept; demonstrated creativity in its execution.	Fully self-initiated; originated and designed an entirely new experience from scratch, showcasing high innovation.

Learners could have varying levels of depth and verification in each experience, but students would be encouraged to **participate in a certain number of diverse experiences within each category**. These diverse learning experiences merge multiple skills, drive learning in the real world and challenge students while building critical assets like social capital and networks, knowledge of

possible career pathways and more. These experiences also could serve as multipliers for achieving competency more rapidly.

The submitted information would then be **interpreted and translated by artificial intelligence (AI) tools** into a discrete set of high-value skills as indicated by employers, higher education and K-12. Over time, these cumulative **skills demonstrations would stack into competencies at varying rates** (depending on quality indicators and validation) that have value for higher education admission, employment or upskilling/promotion with current employers. A learner may have achieved competency in Creativity, but based on the evidence, the algorithm may indicate low confidence in the ability to perform the competency across multiple contexts. This vetting of confidence would help both **employers/recruiters and higher education institutions derive a sliding scale of value from the competency**. These competencies, backed by evidence (experiences) and a confidence rating (verifiability), would then become the building blocks for earning credentials in the high-value skills. In the end, both competencies and experiences have value in higher education, employability and promotion and thus are credentials.

As this method is geared to capture all experiences, it will require interoperability with a wide variety of experience types and also assessment types (mentioned earlier).

Examples

Scenario: Entrepreneurial Experience - Starting a Nonprofit

Experience Description: A student named Maria is participating in [ProX](#), a platform used by Real World Learning participating districts. She is paired with an entrepreneurial mentor and decides to start a nonprofit organization that provides free coding lessons to underserved youth in their community. Maria organizes a team, secures funding through grants, and collaborates with local schools to host the sessions.

Experience Quality Indicators Evaluation:

- **Responsibility:** Maria shows **full responsibility**. They initiated the project, led the team, managed resources, and engaged with community leaders and schools to make the project a reality. Alex also ensured continuous improvement of the program based on feedback.
- **Complexity:** The project is **highly complex** as it involved setting up a structured program, securing funding, managing a team, and sustaining the initiative over two school years.
- **Novelty:** Maria's project demonstrates **fully self-initiated** novelty. The idea was original, and Maria designed the entire process from concept to execution, filling a specific community need not previously addressed.

Verification Evidence:

- Grant approval letters.
- Testimonials from school administrators.
- Photos and videos from coding sessions.
- Reflective essays written by Alex discussing challenges and successes.

AI Analysis and Credentialing:

The AI tools analyze the submitted evidence and provide a **high confidence** rating in competencies such as leadership, problem-solving, and community engagement based on the depth and quality of the evidence.

Next Steps:

1. **Higher Education Admissions:** Based on the confidence rating and the competencies demonstrated, universities interested in students with proven leadership and community service skills highly regard Alex's application. Alex could receive offers from programs that emphasize social entrepreneurship or community development.
2. **Employment:** Companies looking for young leaders with experience in managing projects and teams might reach out to Alex for intern roles, especially in corporate social responsibility (CSR) sectors.
3. **Upskilling/Promotion:** As Alex continues to develop the non-profit, they might participate in additional training and certification in non-profit management and fund development, further enhancing their credentials and readiness for larger roles.
4. **Continuous Feedback and Improvement:** The credentialing system could suggest areas for further development, such as enhancing financial management skills or expanding the non-profit's reach, providing a personalized learning and growth roadmap based on the AI's analysis of skills gaps.

Recommendations

Real value for learners and employers requires secondary, postsecondary and workforce development institutions to adopt aligned frameworks, standards and tools. Below we provide recommendations for each of these stakeholder groups with examples of progress.

K-12

Recommendations	Examples
Build a learner profile with a portrait of a graduate. This portrait with associated competencies and proficiency criteria provides direction for credentialing. Build statewide coalitions to assess priority durable skills consistently.	Portrait model Skills for the Future Iowa's Universal Constructs Utah's Portrait of a Graduate Portrait of a Nevada Learner Profile of a South Carolina Graduate
Implement a competency-based approach. Augment or replace courses as graduation requirement with mastery credits, skill and experience credentials.	Indiana Diploma values credentials Real World Learning in Kansas City values Market Value Assets Kansas requires 2 postsecondary assets
Create an experience ecosystem. Embed experiences into graduation requirements and link competencies into experiences. Build a robust experience validation system. Create systems to assess experiences based on submitted evidence and other means of verification.	LivedX Ohio Seals Colorado Education Work Lab (C-Lab) New York Seal of Civic Readiness CompetencyGenie
Adopt an experience validation system. Build/adopt an experience validation system that credentials learning in and out of school. Build industry and higher education partnerships that validate and value credentials.	Colorado Succeeds Learn Everywhere New Hampshire
Create/adopt a competency transcript. Develop a transcript describes acquired knowledge, experience, and skills (core, technical, durable).	Mastery Transcript Consortium One Stone Growth Transcript
For more...	For K-12 schools, Digital Promise published a useful report on credentials and LERs that further explores many of the themes shared in this publication.

Higher Education

Unpack courses into outcomes. Building outcomes associated with portable data standards increases connections between k-12, higher ed and the workplace.	Southern Oregon University Foundation, Exploration, Integration Skills
Expand credit for prior learning. Use military experience, on the job learning and credentials to expand credit for prior learning.	ACE Military Guide Western Governors University
Value competency-based system for admissions and transfer. Collaborate with NCAA and Federal Government Pell Grant departments to accommodate and value competency-based systems that award credentials.	National Skills Coalition Performance Assessment in College Admission
Create an experience ecosystem. Incorporate work-based learning in every pathway.	Elon Experiences Transcript Northeastern Co-op & AI for Impact Co-op Paul Quinn College 640 colleges host client projects on Riipen
Award stackable credentials. Award credentials for sets of competencies earned through several units/courses to recognize value particularly for those who do not complete a degree.	Credential As You Go
Fund LER technology. Provide digital wallets to hold lifetime Learning and Employment Records for students.	LearnCard Territorium
Look to online examples. Global online schools are leading the way in recognition of credentials and transferable credits.	University of Massachusetts Online Purdue Global University of Maryland Global Campus ASU , WGU , SNHU

States

Recommendations	Examples
Value competency-based systems. Collaborate with NCAA and Federal Government Pell Grant departments to accommodate and value competency-based systems that award credentials.	Aurora Institute National Skills Coalition Performance Assessment in Admissions
Implement Learning and Employment Records. Invest in state- sponsored initiatives to create	North Dakota Credential Wallet Alabama Talent Triad

verified digital credential solutions for K-12 education.	
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Employers

Identify common skills language. Build agreements on common transferable competencies and skills credentials shared by higher ed and employers.	Lightcast America Succeeds Durable Skills
Use validated experience and competency credentials in hiring. Implement skills-based hiring in Learning and Employment Record ecosystems.	SkillsFWD T3 Innovation Networks
Make experience validation and skills credentialing lightweight and portable. Support technology platforms that allow employers to easily validate experiences and credential and recognize competencies earned by employees during work experience. Make these credentials portable.	Velocity Network Foundation
Create work-based college credit experiences. Expand work-based partnerships with higher education and K-12 to provide multiple opportunities for real-world experience, dual-enrollment and credentialing while enrolled in school	Upskill Together US Chamber EPIC

Resources and Acknowledgements

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