

Digital Credentialing Solutions



POLICY BRIEF
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Vision

MHEC members collaborate to address the region's most pressing challenges in higher education and transform educational opportunities so that people and communities thrive.

Mission

MHEC brings together midwestern states to develop and support best practices, collaborative efforts, and cost-sharing opportunities. Through these efforts it works to ensure strong, equitable postsecondary educational opportunities and outcomes for all.

Who MHEC Serves

MHEC is comprised of member states from the midwestern United States. MHEC works with and for a variety of stakeholders within and across member states, including higher education system leaders, state policymakers, legislators, and institutional leaders, while always maintaining a focus on students and their success.

How MHEC Works

MHEC's strategic approach highlights member states' strong desire for collaboration, effectiveness, and efficiency. MHEC believes that collaborative actions informed by research and best practices are the catalyst for improving quality, accessibility, relevance, and affordability of postsecondary educational opportunities. MHEC does this primarily through the following approaches: convenings, programs, research, and cost-savings contracts. Increasingly, MHEC looks to leverage these approaches in conjunction with each other to serve its strategic priorities.

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OVERVIEW

Transcripts are the traditional record of a student's success in completing coursework and earning a degree at educational institutions. They have long served as "proof" to potential employers and other educational institutions that a student has engaged in certain learning activities and mastered given areas of content. However, the traditional concept of a transcript has become outdated as the needs of individuals and industry have evolved alongside new technologies able to record, validate, and share information about students' educational accomplishments. In the year 2020, the need is for a "learner record" which not only includes the same information as a traditional transcript, but also includes information about non-classroom learning experiences and credentials earned

via industrial trainings, field work, military service, volunteer experiences, and more.¹

The purpose of this paper is to provide a background and starting place for understanding the unfolding shift from traditional transcripts to comprehensive learner records and to explore the work in which MHEC might engage to support this transition. For example, in the short-term, MHEC has an expiring contract for e-transcribing (January 2021) that needs to be refreshed in a way that pays attention to the fast-paced changes in the world of learner records and credentialing. In the longer-term, work is needed to support institutions, systems, and states as they transition from the use of traditional transcripts to a system of comprehensive learner records.

BACKGROUND

Historically, transcripts and the credentials they document have been the tickets that allow individuals access to additional education and certain occupations. Such records exist to convey to educational institutions and employers what an individual has accomplished in a program of study and to verify the possession of certain skills. Because of their value and the access they provide to further education and professions, credentials and transcripts are highly valued but plagued by issues of veracity and translation. To be valuable, such records must be accurate, trustworthy, and verifiable.

The last 20 years has witnessed an increase in the number and diversity of students, educational programs, and types of credentials.² As a consequence, traditional transcripts have not been able to capture and convey the variety and amount of information about students and credentials that is desirable and necessary. Questions like, "How do we know this transcript is legitimate?," "What does this credential say about its holder?," and "What are the skills mastered in order to earn

this credential?" have entered higher education discussions with increasing frequency, and a potential solution has been identified.

Educational institutions have given more recognition to learning that occurs outside the classroom environment. There has also been a parallel movement to recognize diverse "ways of knowing" by awarding academic credit to students for their prior experiences. Consequently, traditional paper transcripts cannot accurately capture the other forms of learning, knowing, and skill acquisition both students and employers wish to document. In sum, "as more learners [and students] seek to understand the value of higher education," institutions need to leverage digital mediums to provide a comprehensive, holistic, and secure record of student learning and skill acquisition.³

Such a digital medium would be a comprehensive learner record (CLR).⁴ CLR's are not intended to replace traditional institutional transcripts. They are meant to be a supplement that consists of an "official, digital record that [contains]

¹ Lumina Foundation (2019). Unlocking the nation's potential: A model to advance quality and equity in education beyond high school. Author. <https://luminafoundation.org/wp-content/uploads/2019/08/unlocking-the-nations-potential.pdf>

² Van Noy, M., McKay, H., & Michael, S. (2019). Non-degree credential quality: A conceptual framework to guide measurement. Rutgers Education and Employment Research Center. <https://smlr.rutgers.edu/NDCQuality>

³ Indiana Comprehensive Learner Record (CLR) Convening, September 16, 2019, Indianapolis, IN, USA.

rich information on learning.”⁵ For example, CLRs would be available to all learners and workers, not just those who attend postsecondary education. The American Workforce Policy Advisory Board held that CLRs “[could] result in a more equitable hiring process as employers can hire based on skills, reducing the impact of implicit biases.”⁶

Besides being available to workers who have not engaged in formal postsecondary education, CLRs also have the advantage of working in an ecosystem of interoperable data. This means the data they contain are readable and interpretable by any other system using the same data system, thereby streamlining transmitting, sharing, verifying, auditing, and otherwise examining the information contained in an individual’s record. For example, high school transcripts transmitted to colleges would be machine readable at the receiving institution, easily imported into the institution’s Student Information System, and available to college staff so they can make more accurate, efficient, and equitable admissions and placement decisions. To facilitate this type of data sharing, providers of electronic and digital credentialing services have proliferated in recent years,⁷ so there are many options from which schools, systems, and states can choose to help create and improve records of workers’ and learners’ accomplishments.

CURRENT STATE OF AFFAIRS

To support institutions and states as they have made such changes, MHEC has held a master contract for electronic transcripts (e-transcripts)/digital transcripts for almost two decades. Working with the provider, Parchment, MHEC has helped make digital transcripting more affordable and

accessible to states and schools across the region. Some MHEC states have embraced the contract and implemented e-transcripts statewide at the secondary level (i.e., Indiana),⁸ while others have developed their own tools and implemented e-transcripts at the public postsecondary level (i.e., Ohio, North Dakota).

A comprehensive study of the types and scope of e-transcripting across the Midwest will be an important step for MHEC to take as it moves forward with competitively soliciting electronic transcripting and digital credentialing solutions. It will also be essential to engage in associated policy work to support states’ transitions from traditional to electronic transcripts and beyond.

Work pertaining to transcripting and digital credentials is a vital initiative in which MHEC can invest its resources. Such work could help states and institutions achieve their goals in the areas of equity, efficiency, completion, transfer, and workforce development.⁹ For example, secondary and postsecondary schools, as well as their students, are at a disadvantage in the higher education marketplace if they lag in their adoption and use of digital transcripting and comprehensive learner records. Such disadvantages include delays in transcript submission, transmission, auditing, awarding of credit, transfer of credit, admissions decisions, and transcript verification. Also, identifying students for reverse transfer programs will be more difficult in states lacking an interoperable digital transcript and credential environment. Further, students with transcripts not compatible with employers’ transcript verification tools will have fewer workforce options.

Moreover, such disadvantages will only increase as digital

⁴ For a more detailed discussion about Comprehensive Learner Records, please see Appendix C.

⁵ Indiana Comprehensive Learner Record (CLR) Convening, September 16, 2019, Indianapolis, IN, USA.

⁶ Indiana Comprehensive Learner Record (CLR) Convening, September 16, 2019, Indianapolis, IN, USA.

⁷ Such providers include but are not limited to Credly, Digitary, GreenLight Credentials, Learning Machine, Parchment, Portfolium, and TrueCred.

⁸ Indiana has also recently initiated work to make e-transcripts mandatory and interoperable across all public postsecondary institutions in the state.

⁹ American Workforce Policy Advisory Board. (2019). White paper on interoperable learning records. American Workforce Policy Advisory Board, Data Transparency Working Group. https://www.imsglobal.org/sites/default/files/articles/ILR_White_Paper_FINAL_EBOOK.pdf

credentialing and transcribing continue to evolve. The role, scope, and technology of recording individuals' learning and educational accomplishments are expanding exponentially. Major changes to transcribing and credentialing are already occurring across the nation, including but not limited to the following:¹⁰

- Transcripts are becoming “learner records.”
- Courses and grades are being supplemented by portfolios, testimonials, badges, microcredentials, and more.¹¹
- Employers are looking for evidence of skills such as leadership, so learner records are beginning to include more elements of experiential learning.¹²
- Post-college professional development is now often tracked via badges from professional organizations, employers, and others and need places they can be recorded.¹³
- Ownership of the transcript or learner record is transferring from institutions to third party services and vendors, and there are convincing arguments to eventually transfer to individual students via new technologies like blockchain.¹⁴
- The verification of credentials is moving away from institutions and registrars to independent clearing houses like Credential Engine.
- Consumers of learner records increasingly include employers and states, as well as educators.¹⁵

As the revolution in learning records unfolds, critical questions and considerations impacting the nation and the MHEC region include:

- How many high schools and postsecondary institutions in the Midwest currently use electronic transcribing in some form?
- What are the formats of those electronic transcripts, and what is the distribution of their use?
- How interoperable are those transcribing formats within states, among states, with third parties, with workforce partners, and other stakeholders?
- What is the level of readiness at high schools and postsecondary institutions in the Midwest to transition from one stage of the transcribing revolution to the next?

¹⁰ For more detailed information about unfolding changes to credentials and associated technologies, please see Appendix B.

¹¹ Williams, C. (2020). High value credentials for New England. NEBHE Policy Brief. https://nebhe.org/wp-content/uploads/2020/01/High-Value-Credentials-Brief_Final_Jan-20.pdf

¹² American Workforce Policy Advisory Board. (2019). White paper on interoperable learning records. American Workforce Policy Advisory Board, Data Transparency Working Group. https://www.imsglobal.org/sites/default/files/articles/ILR_White_Paper_FINAL_EBOOK.pdf

¹³ American Workforce Policy Advisory Board. (2019). <https://www.commerce.gov/americanworker/american-workforce-policy-advisory-board>

¹⁴ Arthur, J. (2019). Why we are using blockchain technology for digital credentialing. *Campus Technology*. <https://campustechnology.com/articles/2019/12/12/why-we-are-using-blockchain-for-digital-credentialing>

¹⁵ Kelly, R. (2020). ACE receives ED funds to explore blockchain's potential. *Campus Technology*. <https://campustechnology.com/articles/2020/02/06/ace-receives-ed-funds-to-explore-blockchains-potential>; American Workforce Policy Advisory Board. (2019).

WHO ARE THE STAKEHOLDERS?

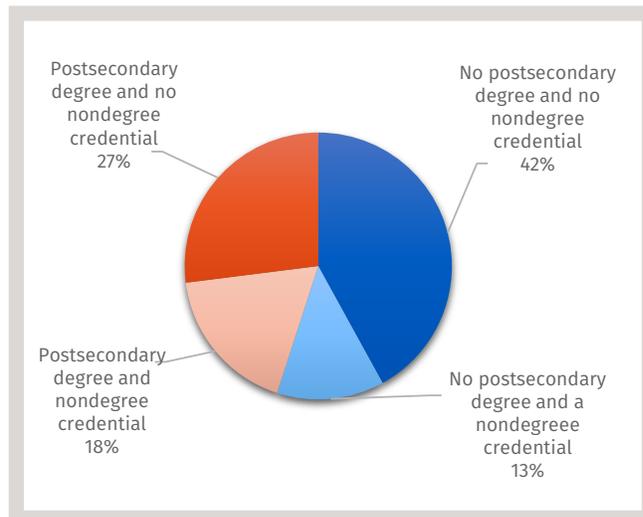
The demand for a new conceptualization of transcripts and credentialing is not driven solely by institutions of higher learning. Students, employers, institutions, and state actors all make use of transcripts, but each uses transcripts and credentials for different purposes and goals. A comprehensive, interoperable digital credentialing ecosystem can provide a uniform platform that simultaneously meets the needs of individual students and those of the broader socio-economic system.

Students

Students are the main group who benefit from digital transcription and credentialing. If a common digital platform is leveraged, students can easily obtain and share a record that contains all the coursework, competencies, and skills they have earned both inside and outside a classroom. The fees and logistical burden of procuring transcripts and sending them to new schools or prospective employers are considerable, and as more students pursue shorter, more diverse pathways to credentials, the complexities of transcript management will only increase. Students need a single dynamic, flexible, validated, and trusted record of their learning and accomplishments which they control, and which follows them throughout their lives.

Often overlooked, also, is the fact that many students fall outside the “degree-seeking” classification for some or all their lives, as Figure 1 indicates. Referred to as “lifelong learners,” such learners might seek new skills via professional development training to advance a career or for personal enrichment. Another often overlooked group is the 13% of American adults with no college degree but who have received some form of postsecondary credential and the 18% of adults who have earned both a postsecondary degree and non-degree credential.¹⁶ The number and types of nondegree credentials will continue to increase, making the credentialing landscape even more confusing for all stakeholders. Much of this confusion can be reduced and the value of nondegree educational experiences conveyed via an individual learner record in which such credentials are meaningfully captured.

FIGURE 1. Number and type of nondegree credentials



It is quite likely that as digital transcribing and credentialing becomes more commonplace, more groups will be affected by this development in a positive way. Digital credentialing could be helpful for military-affiliated families. For those who have served, or are currently serving the country, a digital credentialing environment could explain and contain information about the skills, competencies, and training acquired during their military service. A digitally-based method of transcription and credentialing can also positively impact military spouses. Military spouses in licensed positions and professions, a digital environment that is owned and controlled by the end-user would be helpful if they must move on short notice. Given the often transitory nature of a military family, a digitally-fixed credentialing and transcribing platform would support their educational and professional relocation needs.

Institutions

Digital transcribing and credentialing tools heavily impact both secondary and higher education institutions. By migrating to a digital system, institutions will save staff time and institutional funds that can be applied to other educational priorities. If digital transcribing is adopted by both high schools and postsecondary institutions, a shared

¹⁶ US Department of Education. (2018). Degree and nondegree credentials held by labor force participants. <https://nces.ed.gov/pubs2018/2018057.pdf>

transcripting environment could allow for a more holistic, accurate, and fair admissions process. For example, by having a more complete portrait of a student's coursework, competencies, and skills, admissions professionals would have machine analyzed information regarding a student's ability to succeed at their institutions before they even see students' applications, an important step for institutions seeking to address equity issues in their admissions processes. Such enriched information could also be used by institutions to create diverse student cohorts, analyze student outcomes, change instructional and non-instructional practices, and contribute to increased rates of student retention and success.

Employers

Employers often note that educational institutions do not produce graduates with the skills and abilities needed for success in the workplace. There is a lack of clarity and understanding between the skills employers seek and those schools provide.¹⁷ For example, leadership, working on a team, effective communication, and emotional intelligence are skills in high demand in the workforce. Often referred to as "21st century skills," such accomplishments and traits are not reflected on a traditional transcript. "Enhanced," or "enriched" transcripts provide information about these 21st century skills and can do so in a way that demonstrates to potential employers students' strengths in these areas. The potential alignment of educational outcomes with the needs of industry would benefit students, employers, and institutions, providing a way for students and employers to communicate more effectively with each other about skills possessed and skills desired.

Further, the fastest growing part of the higher education marketplace are non-degree credentials.¹⁸ A 2019 report by Credential Engine stated that "by 2020, 65% of all jobs in the United States will require at least some postsecondary training, but not necessarily a degree."¹⁹ If a traditional transcript cannot showcase or speak to these new professional development opportunities, both students and employers miss out on the promise and benefit offered by the student's education.

Local, State, and Federal Governments

Local, state, and federal governments also stand to benefit from interoperable, comprehensive digital credentialing ecosystems. State governments have increasingly placed pressure on institutions to demonstrate the return on investment (ROI) for different areas of study or for the entire college experience. A digital credentialing infrastructure could help illuminate the skills and competencies developed in an area of study or at an institution. Information of this sort would help underwrite the value of states' investments in all levels of education as well as assist the state in meeting its workforce needs.

Several states have already recognized the value of building a comprehensive ecosystem of learner credentialing. For example, Indiana has developed its e-transcript initiative, which mandates the use of a common e-transcript for all secondary schools in the state (and with public postsecondary institutions joining the Initiative in its second phase).²⁰ Six other states have enacted related initiatives, including several that participate in the New England Board of Higher Education's (NEBHE) initiative known as High Value Credentials for New England (HVCNE).²¹

¹⁷ Fain, P. (2019). Getting clearer signals from employers. *Inside Higher Ed*. <https://www.insidehighered.com/news/2019/02/20/employers-team-higher-education-bring-open-data-and-standardization-hiring>

¹⁸ Fain, P. (2017). New data on nondegree credentials. *Inside Higher Ed*. <https://www.insidehighered.com/news/2017/09/14/feds-release-data-nondegree-credentials-including-certificates-and-licenses>; Duke-Benfield, E., Wilson, B., Kaleba, K., & Leventoff, J. (2019) Expanding opportunities - Defining quality non-degree credentials for states. *National Skills Coalition*. https://www.nationalskillscoalition.org/resources/publications/file/9.18-NSC_QNDC-paper_web.pdf

¹⁹ Credential Engine. (2019). Counting U.S. postsecondary and secondary credentials. Author, p. 6 https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

²⁰ Indiana eTranscript. <https://www.in.gov/che/4626.htm>

²¹ NEBHE. (2019). High value credentials for New England. https://nebhe.org/wp-content/uploads/2019/07/HVCNE-one-pager-FINAL_July2019.pdf

FUTURE DIRECTIONS, IMPLICATIONS, AND CONSIDERATIONS

Digital spaces are everchanging so it is quite likely that as greater degrees of technological innovation occur, a similar response will occur in the credentialing and transcribing arena. While it is difficult to accurately project what these new products might look like, a few are in the emergent stages. For instance, Parchment, Lumina, and the American Association of Collegiate Registrars and Admissions Officers (AACRAO) are working in tandem to develop a tool that will allow new credentials to be created and developed.²² States are also forging new pathways. Michigan is moving toward a digital credentialing hub in which information systems from across the state can become interoperable. The thinking is that users will be able to connect to an endpoint of the hub while also promoting information security.²³

MHEC'S ROLE IN DIGITAL CREDENTIALING

Since 2006, MHEC has had a master contract for electronic transcribing which institutions and states can use to access such services under optimal terms of service.²⁴ The existing contract expires in January 2021. As MHEC builds the desired proposed solutions for the renewal of its e-transcribing contract, it is vital those involved in the process consider a

wide range of factors, including:

- the rapidly changing economic higher education, and credentialing landscape;
- the lightning speed at which technologies evolve;
- the wide range of stakeholders throughout the region;
- the widely varying transcribing practices and policies currently in place;
- the financial and social constraints affecting MHEC's stakeholders and their views of e-transcribing and comprehensive data systems;
- the interoperability of transcribing services across educational sectors, student information systems, employers, third parties, and other stakeholders;
- the readiness of and potential for institutions to expand the content and the format of learner records as the technology to do so comes to market; and
- the strategies by which learner record data can be described via open schema and then be serialized and exchanged.”

MHEC's historic relationship with the incumbent Parchment and the performance of that contract can also inform the e-transcribing advisory group.²⁵

²² Parchment. (2020, February 13). MHEC & Parchment [Presentation]. MHEC Headquarters, Minneapolis, MN, USA.

²³ Parchment. (2020, February 13). MHEC & Parchment [Presentation]. MHEC Headquarters, Minneapolis, MN, USA.

²⁴ MHEC's Student Access Advisory Committee (SAAC) launched the e-Transcript initiative during the summer of 2006 and after an extensive Electronic Transcript Request for Proposal (RFP) solicitation, MHEC awarded a contract in 2007 to Docufide, Inc. with a six-year term. On March 10, 2011, Docufide, Inc. changed its name to Parchment. In early 2010 SAAC recommended that MHEC establish an e-Transcript Initiative Project Advisory Committee to guide the direction of the initiative with the deliverable to prepare and award a competitive solicitation in 2013 for an e-transcript solution. After satisfying all the requirements of the solicitation, MHEC awarded an e-transcribing contract to Parchment in 2014.

²⁵ Important information about Parchment includes the fact that while the company has traditionally served mainly K-12 institutions, it has recently made a successful move into the higher education transcribing space. This successful push into the higher education space was capped off in early 2020 by a merger with Credential Solutions, a previous competitor that historically served mainly higher education institutions. While educational institutions are the principal users of the Parchment platform, other stakeholders have made use of the services the company offers, including:

- 30% of secondary institutions and organizations, such as the Indiana Department of Education, the Los Angeles Unified School District, and the GED.
- 25% of postsecondary institutions, including the University of Michigan, Arizona State University, and the University of Maryland-College Park.
- 300+ Government Agencies, including the Department of Defense, the State Department, and the Department of Homeland Security.
- 900+ Private Employers, including Wells Fargo, Boeing, and Allstate
- 100+ Background and Staffing Agencies, such as HireRight and Intellius.

In summer 2020 MHEC will assemble a digital credentialing advisory group. That group will inform work pertaining to digital transcribing, credentialing, and the development of a comprehensive learner record. Potential areas in which MHEC might become active include policy, resource sharing, and potentially additional contracts for future, yet unidentified, needs. Part of the work to develop recommendations and evaluate proposed solutions will include conversations with stakeholders across the region. Stakeholder needs will be explored, as will barriers to the adoption and expansion of digital transcribing.

NEXT STEPS

Step 1, Summer 2020: Determine the status of digital credentialing knowledge and work in the MHEC states

In June 2020, this brief and its attached resources will be shared with a wide range of stakeholders in the twelve MHEC states. These individuals will be asked to read this brief and respond to a survey in which they will be asked about their connection to credentialing work in their states, their knowledge of the digital credentialing landscape, and their willingness to serve on an associated MHEC advisory group. A subset of this group will also be tapped to serve on the RFP committee for the renewal of the e-transcribing/digital credentialing contract.

Step 2, Summer 2020: Exploring the digital transcribing and comprehensive learner record vendor landscape

In July 2020, the advisory group (including the RFP subgroup) will engage in information sharing (such as webinars, surveys, conference calls, meetings, etc.) in order to learn about the digital transcribing and comprehensive learner record vendor landscape.

In August 2020, the advisory group will advise on the creation and recruitment of state teams²⁶ which will start to meet in Fall 2020 to begin discussions pertaining to the creation and/or continuation of state-level digital credentialing initiatives. During that same month, the RFP subgroup will develop the RFP (including, scope statement, specification, vendor lists, and an evaluation rubric) for MHEC's digital credentialing/comprehensive learner contract. The goal will be to issue the RFP on or around September 1, 2020.

Step 3, Fall 2020: Evaluating responses to RFP, continued work on state digital credentialing teams

In October 2020, the RFP subgroup will consider and evaluate vendors' responses to the RFP. The goal will be for the subgroup to make a recommendation for the contract award(s) by December 1, 2020. During this same period, the state teams will continue to investigate, describe, and categorize the digital credentialing opportunities and challenges in each of their states and begin to set goals to move the state toward an integrated, interoperable credentialing system.

Step 4, Winter 2020: Negotiating and finalizing the contract(s), action items for state teams

In December 2020 and January 2021, the RFP subgroup will engage in negotiating and finalizing the contract(s). The goal will be to have a new contract or contracts available for stakeholders by February 1, 2021. The state action teams will begin implementing actions they have identified as meeting the needs and circumstances of their respective states.

²⁶ These are potentially the same teams MHEC will support via its collaboration with Credential Engine.

APPENDIX A

CURRENT AND FUTURE STATE OF DIGITAL TRANSCRIPT USAGE: EXAMPLES FROM PARCHMENT

By integrating transcripts into a digital medium, they can show more robust metrics and outcomes when compared to a standard paper transcript. As one is no longer constrained by a physical page or document, more expansive information can be included in a digital credentialing service. Several institutions, such as Elon University and Stanford University, respectively, have offered a digitized transcript via Parchment's services.

Digital transcripts can provide a snapshot of one's learning that includes more information and data. Likewise, a digital credential can better lend itself to analytical comparisons, allowing employers and institutions to better assess a candidate's acquired competencies and skills. Rather than receiving detail regarding what courses a candidate took and the grades received, a digitalized transcript can ideally show the core competencies and skills acquired as a result of course participation. This new framework could minimize issues associated with grade inflation, as more emphasis is placed on skills and competencies as opposed to an arbitrary numerical score that varies between individual faculty, departments, and institutions. In sum, digital transcripts can effectively promote the creation of pathways so that institutions can better promote continuity and standardization across "transfer, dual enrollment, and other programs."²⁷

²⁷ Parchment. (2017, September). Parchment: MHEC Meeting. [Presentation, slide 20]. MHEC Headquarters, Minneapolis, MN, USA.

APPENDIX B

THE CURRENT STATE OF CREDENTIALS AND THE TECHNOLOGY THAT SUPPORTS THEM

In order to create and elicit strong proposed solutions from credentialing/transcript providers, it is useful to design the solicitation that allows for an airtight infrastructure but which also allows enough room to anticipate, react, and provide solutions for current, emerging, and future trends in both the digital and higher education space. This section of this brief is intended to provide an environmental scan of the concepts, products, stakeholders, and intentions that currently operate in and around the digital credentialing landscape.

Changes in Credentials

One of the biggest areas of innovation in this space has been the credentials themselves. While the traditional associate, baccalaureate, or graduate degree remains the credential standard bearer, new methods of credentialing are quickly taking hold. These new credentialing forms, such as “licenses, certificates, micro-credentials,” and digital badges, have been met with increasing popularity.²⁸ While there are more credentials available than what is listed in this report, we have selected a variety entrenched and emerging forms of credentialing:

MOOCs: An acronym for massive open online course, MOOCs “offer students electronic platforms for taking courses at a distance.”²⁹ MOOCs can provide both

academic degrees as well as microcredentials. MOOCs are utilized by various educational actors such as institutions (MIT’s OpenCourseWare Program), educational companies (edX, Coursera), and private businesses (Google, Salesforce, Microsoft). Upon completion of the MOOC, participations will often receive a certificate (upon payment of a small fee) indicating completion of the course, which functions as a “credential.” However, this is not a uniform practice across MOOC providers.

Microcredentials: Microcredentials are “an online educational credential that covers more than a single course, but less than a full degree.”³⁰ Different MOOC providers often use their own names for microcredentials, which can make them difficult to discover and standardize. Depending on the platform, microcredentials are referred to with varying titles, such as “specializations, nanodegrees, programs, or professional education.”³¹ While they fundamentally refer to the same base concept, it can be difficult if one is navigating through this market to identify a credential given the wide range of names.

Industry-Recognized Certifications: Industry-Recognized Certifications (ICR) are a “time-limited, renewable credential awarded by an authoritative body.”³² These certifications are a bit more rigorous as individuals must demonstrate “designated knowledge, skills, and abilities in a particular occupation.”³³ Examples of ICRs include the PMP (Project Management Professional), the MCSE (Microsoft Cloud Platform and Infrastructure), and the Salesforce Administrator credential. ICRs are also more likely to lead to an increase in potential earning opportunities.³⁴ An interesting fact about ICRs is that

²⁸ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 4. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

²⁹ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 6. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³⁰ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 16. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³¹ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 16. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³² Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 20. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³³ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 20. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³⁴ ExcelinEd & Burning Glass Technologies. (2019). Credentials matter report 1: A national landscape of high school student credential attainment compared to workforce demand. Author, p. 4. <https://www.excelined.org/credentials-matter/>; Credential Currency: How states can identify and promote credentials of value.

receiving the credential is reliant upon achieving a passing score on an examination. In some instances the organization sponsoring the credential is not the same as the organization who designs the courses, curriculum, and test.³⁵

Digital Badges: The newest entrants into the digital credentialing space, digital badges, or open badges, are defined as “verifiable, portable digital badges with embedded metadata about skills and achievements.”³⁶ The badges themselves contain “information about the badge, its recipient, the issuer, and any supporting evidence” that is associated with it.³⁷ Due to their digital nature, badges can be displayed wherever the user wishes and can be placed on social media sites, an online copy of a CV, or on a LinkedIn profile. Digital badges also offer some level of security to employers as anyone can “verify that a badge is real or inspect the metadata [and] associated evidence.”³⁸ While digital badges are still a relatively new concept in the credentialing space, their inherent interoperability, and security can perhaps provide a template for future credentialing models to follow.

Changes in Technology

The digital credentialing landscape is dependent upon the quality of the technological infrastructure upon which it relies. As the capabilities of technology expand, so too will the possibilities and benefits associated with digital transcripts and credentials, including but not limited to multiple modalities for storing and sharing credentialing information, cost savings, and changes in control and ownership of learners’ records.

Currently, there are several methods of data exchange that are used for digital transcription:

PDF-Portable Document Files, “the most popular form of eTranscript adoption,” consist of various layers such as:³⁹ *An art layer* that can contain institutional signatures, seals, and logos, in order to “brand the document with [an] institution-specific look and feel.”⁴⁰ *A text layer* that is meant to be read by humans. This is simply what one would read if they were to open a digital transcript.⁴¹ *A data layer*, while this layer is ultimately optional, the data layer, written in EDI or XML, translates the information from the text layer into a format that can be read and analyzed by computers.⁴²

³⁵ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 20. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³⁶ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 20. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³⁷ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 26. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³⁸ Credential Engine. (2019). Counting US postsecondary and secondary credentials. Author, p. 26. https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

³⁹ Kilgore, W., Hansen, G., & Hamill, M. (2014). Transcript practices and costs at U.S. institutions. American Association of Collegiate Registrars and Admissions Officers, p. 26. https://www.aacrao.org/docs/default-source/research-docs/aacrao-transcript-practice-and-costs-report-june-2014-final.pdf?Status=Temp&sfvrsn=b0fe4a7a_4

⁴⁰ Kilgore, W., Hansen, G., & Hamill, M. (2014). Transcript practices and costs at U.S. institutions. American Association of Collegiate Registrars and Admissions Officers, p. 26. https://www.aacrao.org/docs/default-source/research-docs/aacrao-transcript-practice-and-costs-report-june-2014-final.pdf?Status=Temp&sfvrsn=b0fe4a7a_4

⁴¹ Kilgore, W., Hansen, G., & Hamill, M. (2014). Transcript practices and costs at U.S. institutions. American Association of Collegiate Registrars and Admissions Officers, p. 26. https://www.aacrao.org/docs/default-source/research-docs/aacrao-transcript-practice-and-costs-report-june-2014-final.pdf?Status=Temp&sfvrsn=b0fe4a7a_4

⁴² Kilgore, W., Hansen, G., & Hamill, M. (2014). Transcript practices and costs at U.S. institutions. American Association of Collegiate Registrars and Admissions Officers, p. 26. https://www.aacrao.org/docs/default-source/research-docs/aacrao-transcript-practice-and-costs-report-june-2014-final.pdf?Status=Temp&sfvrsn=b0fe4a7a_4

Many institutions use EDI and XML data in tandem with PDF files as opposed to sending solely EDI and XML based records.⁴³ EDI and XML is currently “the easiest machine-to-machine method for exchanging student records” and should therefore continue to be explored in light of increasing digitally-oriented workflows.⁴⁴

Sharing information via EDI and XML formats provides benefits to both staff and institutions. The transfer of information between computers would “[allow] for the automation of many manual processes,” which would grant staff more “time and resources for higher-level analysis and goal achievement.”⁴⁵

Changes in digital transcribing technology also offer cost-savings. Figures 2 and 3 on the next page illustrate metrics from a 2014 survey from the AACRAO show that the savings opportunities for institutions that choose to adopt digitally-oriented services are significant.⁴⁶

As transcripts and credentials become more digitized, it is important to give consideration to who will own the digital artifacts moving forward. In most cases ownership of a student’s transcript or credential is held by the institution the student attended. Students must contact

institutions to send transcripts to other schools and employers, sometimes paying to do so. An issue with this ownership model is that a student may have no recourse to send or receive a transcript if the institution attended were to close. Another issue concerns student mobility. As more students transfer across institutions, the need increases for students to be the primary owner of these artifacts, especially if these artifacts are designed to capture lifelong and continuous learning.

⁴³ Kilgore, W., Hansen, G., & Hamill, M. (2014). Transcript practices and costs at U.S. institutions. American Association of Collegiate Registrars and Admissions Officers, p. 26. https://www.aacrao.org/docs/default-source/research-docs/aacrao-transcript-practice-and-costs-report-june-2014-final.pdf?Status=Temp&sfvrsn=b0fe4a7a_4

⁴⁴ Kilgore, W., Hansen, G., & Hamill, M. (2014). Transcript practices and costs at U.S. institutions. American Association of Collegiate Registrars and Admissions Officers, p. 6. https://www.aacrao.org/docs/default-source/research-docs/aacrao-transcript-practice-and-costs-report-june-2014-final.pdf?Status=Temp&sfvrsn=b0fe4a7a_4

⁴⁵ Kilgore, W., Hansen, G., & Hamill, M. (2014). Transcript practices and costs at U.S. institutions. American Association of Collegiate Registrars and Admissions Officers, p. 7. https://www.aacrao.org/docs/default-source/research-docs/aacrao-transcript-practice-and-costs-report-june-2014-final.pdf?Status=Temp&sfvrsn=b0fe4a7a_4

⁴⁶ Kilgore, W., Hansen, G., & Hamill, M. (2014). Transcript practices and costs at U.S. institutions. American Association of Collegiate Registrars and Admissions Officers, p. 22. https://www.aacrao.org/docs/default-source/research-docs/aacrao-transcript-practice-and-costs-report-june-2014-final.pdf?Status=Temp&sfvrsn=b0fe4a7a_4

FIGURE 2. Hours of staff time spent processing transcripts



FIGURE 3. Average annual staff costs to process transcripts



APPENDIX C

COMPREHENSIVE LEARNER RECORD AS THE EVENTUAL GOAL

Once institutions have understood and created the necessary technological infrastructure, the “end goal” is the production and widespread adoption of a Comprehensive Learner Record (CLR). The CLR fills a niche in the market in that it merges technology, which leads to institutional savings, with the detailed, expansive documentation students and employers wish to see pertaining to the college experience.

There are a variety of important stakeholders and champions⁴⁷ who are devoted to the conceptualization and actualization of a CLR. An important leader in this space is Credential Engine. Credential Engine’s main initiative is to “[bring] credential transparency through technology.”⁴⁸ Essentially, Credential Engine functions as a centralized clearinghouse so that all stakeholders can make accurate and timely comparisons of various credential offerings. Moreover, Credential Engine created a Credential Transparency Description Language (CTDL), “which provides [a] common language” so that all stakeholders can clearly understand the value of a particular credential.⁴⁹

The AACRAO and the Postsecondary Electronic Standards Council (PESC) have been working together in the arena of digital credentialing. AACRAO in partnership with IMS Global released in May 2020 guidance on reviewing CLRs which provides standards for data interoperability

for CLRs.⁵⁰ PESC’s model is based on the concept of a voluntary consensus standard, which they defined as “data that can be exchanged, shared, reported, sold and/or licensed between at least two separate and independent parties.”⁵¹ The voluntary consensus model provides value to institutions and other actors as it is “based in costs-savings, return on investment, improved data quality and [general] efficiencies gained in overall data management and service delivery.”⁵²

Though CLRs fill a gap in both the institutional and employer markets, educational institutions should be wary of pushing for their adoption and creation too quickly. The quality, availability, and adoption of CLRs is dependent upon the technology behind it. If an institution pursues the CLR without giving adequate attention to the underlying technological infrastructure, the CLR will not be optimally effective. Successful CLR implementations rely on important conversations within and among organizations. It is essential for varying levels of university personnel to be actively involved in the creation and rollout process as this ensures the CLR will meet the diverse set needs in the institutional community.

Ideally, it is best for institutions, vendors, and other actors to first adopt, master, and normalize digital transcription services. If great thought and care is given early in the process, the CLR could experience a seamless rollout once the demand has fully actualized. While the adoption of a CLR is the “end goal” of digital transcription, it should not be at the forefront of the collective mind.

⁴⁷ *Informing Our Thinking as We Measure the Nation’s Progress* discusses Lumina Foundation’s intent to “create holistic systems that capture useful information about the student journey from high school into the labor market. We also want to build capacity to forecast the needs of national, state, and local economies.” [ACE Receives ED Funds to Explore Blockchain’s Potential](#): A blockchain is a database that is communicated throughout a network of computers. Once a record has been added to the chain it is very complex to alter. To safeguard all the versions of the database are the identical, the network creates continual checks. The American Council on Education is exploring the use of blockchain in education with a new initiative funded by the U.S. Department of Education. Lumina Foundation. *Informing our thinking as we measure the nation’s progress.* <https://luminafoundation.org/aof/strategic-impact/>; Murry, M. (2018). A Reuters visual guide blockchain explained. <http://graphics.reuters.com/TECHNOLOGY-BLOCKCHAIN/010070P11GN/index.html>

⁴⁸ Credential Engine. (n.d). About. <https://credentialengine.org/about/>

⁴⁹ Credential Engine. (n.d). How we address quality. (<https://credentialengine.org/about/#how-we-address-quality>)

⁵⁰ American Association of Collegiate Registrars and Admissions Officers. (2020). Guidance on the Review of the Comprehensive Learner Records (CLR) Standard. <https://www.aacrao.org/signature-initiatives/comprehensive-learner-record>

⁵¹ Postsecondary Electronic Standards Council. (2020). PESC approved standards: Documentation and downloads. <https://www.pesc.org/pesc-approved-standards-1.html>

⁵² Postsecondary Electronic Standards Council. (2020). PESC approved standards: Documentation and downloads. <https://www.pesc.org/pesc-approved-standards-1.html>

For the specifics of this RFP/contract, it is recommended that the group ensure the technological environment of stakeholders is maximized. Yet, that maximization process should be coupled with a long-term vision of working towards a Comprehensive Learner Record or a similar concept. We encourage you to view or frame this upcoming RFP/contract as a vehicle to get to the creation and adoption of a CLR. Focusing on crafting a sound technological base while also having a future-oriented end goal in mind will only serve to enhance the flexibility and coverage that this new RFP/contract can provide.

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