STANDARDIZED COMPONENTS FOR A COMPETENCY-BASED EDUCATIONAL RECORD

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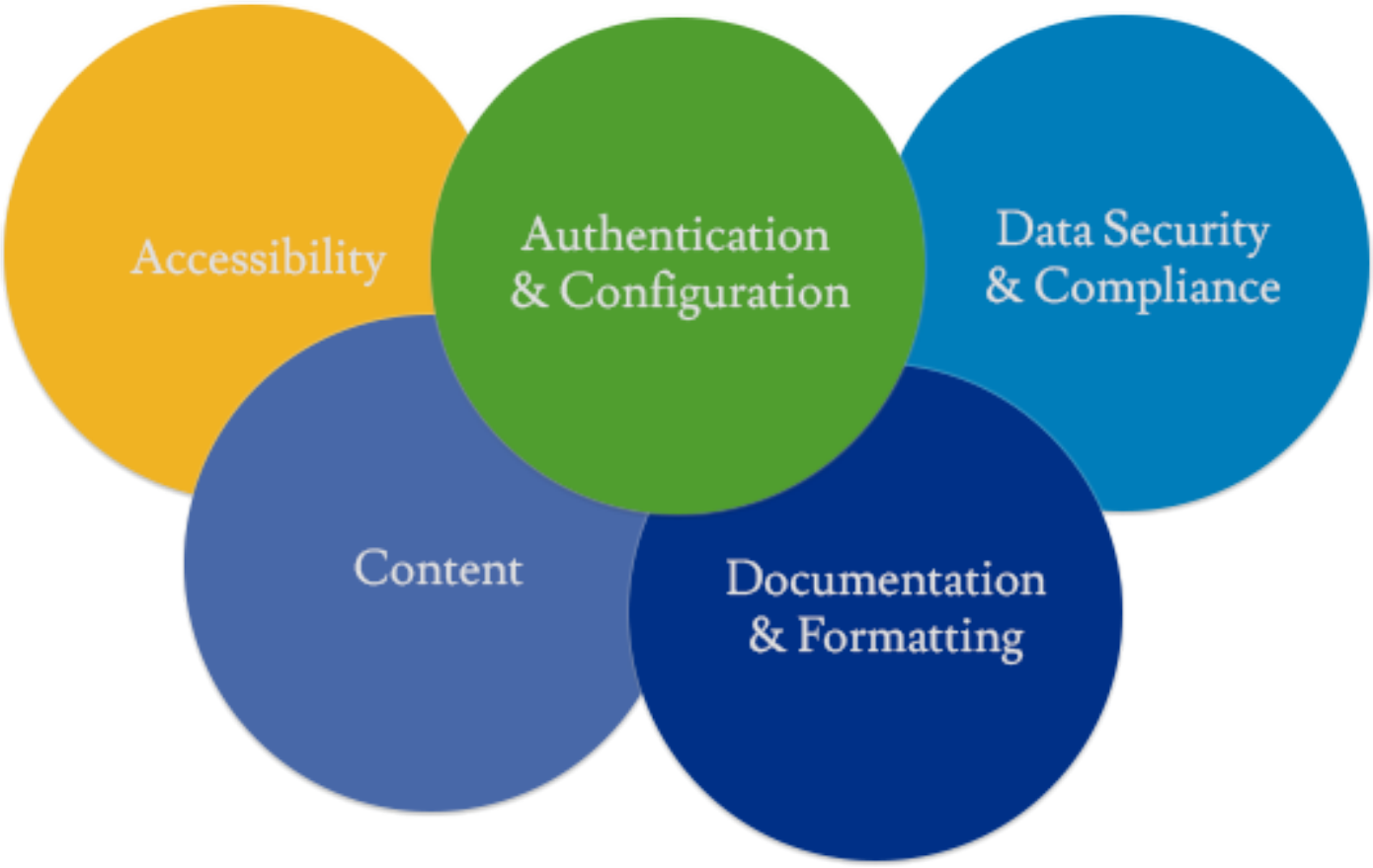

AACRAO

COMPETENCY-BASED EDUCATION NETWORK

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AACRAO is a non-profit, voluntary, professional association of more than 11,000 higher education professionals representing approximately 2,600 institutions in more than 40 countries. Its commitment to the professional development of its members includes best practice guidance on admissions strategies to meet institutional diversity objectives, delivery of academic programs in innovative ways to meet the needs of a changing student body, and exemplary approaches to student retention and completion.

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TABLE OF CONTENTS

Foreword	05
Overview	06
Collaboratory #3 Overview/Identification of Five Standard Categories	07
Collaboratory Goals/Participation Requirements for Collaboratory #3 Members	08
Timeline	08
Requirements and Standards for a Competency-Based Learner Record	09
Accessibility Requirements and Standards	10
Authentication and Configuration Requirements and Standards	11
Content Requirements and Standards	12
Data Security and Compliance Requirements and Standards	14
Documentation and Formatting Requirements and Standards	16
Barriers to Data Integration	18
Steps for a Successful Implementation	18
Appendix A. AACRAO/C-BEN Collaboratory #3 Workgroup Members	20
Appendix B. Examples of CBE CLR Records from Phase 1 of the Grant	21

AACRAO & C-BEN Collaborator #3 Workgroup

Michele Sandllin

Michele Sandlin is an AACRAO Managing Consultant. She previously served as the Director of Admissions and the Campus Visitors Center at Oregon State University for 15 years, during which university enrollment grew by over 67%, while achieving additional goals for diversity and academic preparedness of incoming students. Ms. Sandlin's career has also included successful tenures at Pacific University, Portland State University, the University of Oregon, and Western State College in Colorado.

During her 37 years as a higher education professional, Ms. Sandlin has become well known for her industry-leading expertise in holistic admissions, admissions operations, staff and space management, 2yr/4r campus partnerships, branch campus development, transfer policy and practices, accreditation compliance review, articulation process, policy and agreements, decentralized-centralized structural realignment, and graduate and international admissions. She has served in state, regional and national leadership positions with AACRAO and with the International Baccalaureate Program, having served as the IB Chair for the Americas College and University Recognition Board.

Joellen Shendy

Joellen Shendy has worked in higher education for over 25 years, during which time she has developed unique expertise in the area of credential innovation and competency-based education, as well as services and programs for non-traditional students. As Associate Vice Provost and Registrar at University of Maryland University College, Ms. Shendy piloted a comprehensive learner record for competency-based education, helping students share what they know and can do. Concurrently, she developed a competency-based staff development model, using AACRAO core competencies for the profession, to demonstrate that competency and skills as currency aligns learning and earning. Ms. Shendy was a founding member and past President of Chesapeake and Potomac Association of Registrars and Admission Officers (CAPACRAO) and is currently Vice-Chair of the Competency Based Education Network (CBEN), Co-Chair of the PESC Competencies and Credentials User Group and a member of the Employment and Earnings Data Policy and Practices Task Group at Credential Engine.

Ms. Shendy has written articles and blog posts on the future of education and credential innovations as well as future forward skill/competency-based education, competency-based learning records, and staff development models for AACRAO, IMS Global, Educause, and Parchment among others. She has received awards for credential innovation and Leadership in the field.

In her current role as product strategy director at Workday, she works to envision and build the student system of the future, putting students at the center.

Forward

Higher education today may be under more scrutiny than ever before. As a greater share of the United State and Canadian population attend post-secondary education, holding a credential or having some higher education experience is no longer rare nor necessarily indicative of qualification as it was 50 years ago. Additionally, as costs have outpaced family incomes for decades, leading to over a trillion dollars in student debt, the public, the media, employers, and prospective students are questioning the value of a college education.

Most of the American and Canadian higher education infrastructure is based upon the completion of discrete courses in pursuit of an overall credential (certificate or degree). Curriculum is divided into courses, each carrying specific credits, and courses can be combined into any number of possible credentials. While effective as a construct for measuring faculty workload, student time on task, and associated qualifications for student aid, it is opaque in regard to student learning.

Current mechanisms to record and report student outcomes are confined to these constructs, originally designed to measure internal and faculty-based outcomes. They capture and reflect what students have taken and when, but not what they learned. Students often lack a coherent understanding of the learning gained across courses and institutions (when they transfer); external audiences have even less understanding of what is learned in higher education. New forms of records are emerging, such as the Comprehensive Learner Records developed in Phase I of the Comprehensive Learner Records (CLR) project. These records focus on learning outcomes from courses and experiences both inside and outside a course structure.

Previous alternative educational movements are gaining new traction. Competency-based education (CBE) is one of those movements. It has gained significant traction in higher education as a means to clearly identify the learning that is designed to take place within and around an academic program.

CBE demands new mechanisms to capture, record, and report learning. Because CBE is based on demonstrated mastery of knowledge and skills, it may not be tied to traditional timeframes. Mastery may be evidenced through prior learning, adaptive learning technology, or in laboratory and clinical settings, and, once demonstrated, the time on task is complete. As CBE is evidence-based, it requires a system that can align outcomes with the standards or rubrics for competence and capture that evidence for assessment as well as for the learner's use in demonstrating competence to others (employers, graduate and professional schools, etc.). CBE may not result in grades as we traditionally recognize them, but rather outcomes.

CBE, in its pure form, does not "fit" into a traditional framework of terms, courses, grades and credits. Technologies and records standards do not exist to accommodate this growing educational practice, although emerging technologies are focusing the learning experiences into new record formats. Even when crosswalks to traditional frameworks are created, the rich evidence of learning is lost. For these reasons, new standards must be established for records that reflect competency-based courses and programs.

When designing CBE programs, what information should we be expected to capture, assess, record and report? What should we commonly expect to be contained in such a record when we receive one from another institution or from a student? This report presents a framework for the construction of such records and their standard contents.

Tom Green, Ph.D.
Associate Executive Director, AACRAO

Overview

During the first phase of the Comprehensive Learner Record (CLR) project (2015 – 2017), three institutions developed and implemented a competency-based education program CLR. They were member institutions of the Competency-Based Education Network (C-BEN). Other institutions created records that focused on learning outcomes/competencies derived from term-based coursework and experiential learning outside the course structure. From the successful CBE CLR models developed and implemented in phase one, phase two of the grant expands the number of institutions with CLR, and specifically identifies the inclusion of CBE CLR's. For this second phase of the Lumina grant there were four main goals to be achieved:

1. Facilitate the scaling of CLRs in up to 150 colleges and universities
2. Standardize the components of a CBE transcript/record with the goal of achieving 10 participating institutions in this second phase
    - Draft standards must be universal enough to apply to any CBE program, regardless of technology being used.
    - CBE participating institutions will develop a CBE CLR that aligns with standards.
3. Address the data integration issue:
    - Clearly identify the challenges across institutions at various resource levels.
    - Identify potential solutions appropriate to these levels.
4. Leverage existing degree audit technologies to track progress toward learning outcomes/competencies.

To achieve the goals outlined for the second item above, AACRAO partnered with the expert organization on competency-based education, member institutions of C-BEN. This is a "network of colleges, organizations, and individuals, dedicated to realizing the potential of competency-based education". https://www.cbenetwork.org/. Launched in 2014, C-BEN is a young and progressive organization that is achieving forward movement on many initiatives and challenges within the CBE community. C-BEN's goal is to support this new and growing field of competency-based education. According to C-BEN's website (https://www.cbenetwork.org/about/):

> *"C-BEN recognizes that today, competency-based education is still a nascent field with a small number of people and institutions understanding enough to describe it or implement it. To ensure its impact on the future of learning and student success, C-BEN is committed to spreading its knowledge and expertise through programming and support services that can help others move through the learning curve competently – accelerating development, adoption, and continued innovation. C-BEN's efforts focus on three main priorities: growing demand, building capacity, and removing barriers."*

This fast-growing organization achieves the above goals through active taskforce groups led by CBE institutional members. C-BEN labels these solution-driven taskforce project teams as C-BEN Collaboratory's https://www.cbenetwork.org/collaboratory/.

Or as C-BEN explains it more eloquently:

> *"The CBE Collaboratory will deepen and extend C-BEN's founding commitment to collaborative work, creating time-bound and field-advancing projects aimed at accelerating progress and raising the profile of the network and its members".*

In Winter 2017, Tom Green, Associate Executive Director of AACRAO and the lead administrator of the CLR project with NASPA, NILOA, and Lumina Foundation, contacted Dr. Charla Long, Executive Director of C-BEN, to request that a new Collaboratory be established to address the need for standardized content in CBE records. It was mutually agreed that AACRAO and C-BEN would support a new Collaboratory (known as #3) in 2018 to focus on this need.

The membership of Collaboratory #3 is listed in Appendix A. All members listed were present and worked on the development of the standards proposed in this paper. It is worth noting that all three institutions that were members of phase one -- Brandman University, University of Maryland University College, and University of Wisconsin Extension -- are also members of phase two of the grant as experts and mentors for Collaboratory #3. Two institutions -- Polk State College and Salt Lake Community College -- have since had to leave Collaboratory #3 to focus on other institutional priorities.

Collaboratory #3 Overview/Identification of Five Standard Categories

The first in-person meeting of Collaboratory #3 occurred on Friday, July 13, 2018, at the AACRAO office in Washington, D.C. The agenda for this meeting included an overview of phase one of the CLR project, a detailed demonstration of the three CBE CLR models implemented in phase one (conducted by the institutional team leads), and a review of phase two timelines, goals, and implementation requirements. The group identified issues, barriers, and data concerns, and discussed communication planning and marketing for implementing a CBE CLR. Time was devoted to definitions and identification of elements that must be included in the standards draft.

The standards discussion did have a significant jump start, thanks to early discussions by C-BEN. These early discussions had identified and documented elements that should be included on a CBE record and C-BEN graciously shared these early excel spreadsheets with the Collaboratory #3 team at its first meeting.

During the standards session, the team was able to identify five general categories into which standards and elements fall:

- Accessibility
- Authentication and Configuration
- Content
- Data security and Compliance
- Documentation and Formatting

The Collaboratory #3 members continued to develop the initial requirements and optional elements within each of these five areas after the July meeting by electronic means (email, Dropbox, and Google Docs). The CBE Standards were completed by early September and co-chairs Sandlin and Shendy produced a PowerPoint to present to the C-BEN membership for feedback at the Fall 2018 C-BEN Member-Only convening.

The second in-person meeting occurred on Tuesday, September 25, 2018, at the C-BEN Fall convening, the CBExchange conference, held at Walt Disney World's Yacht & Beach Club Resorts in Orlando, Florida. The Collaboratory #3 co-chairs, Michele Sandlin and Joellen Shendy, along with the Collaboratory #3 members, presented to the C-BEN membership an overview of the phase two project and the draft standards. Time was allowed for the membership to provide feedback and edits. Following this session, the Collaboratory #3 members met to synthesize the feedback and recommended edits. Co-chairs Sandlin and Shendy incorporated the agreed-upon edits into the draft and finalized the CBE Standards presented in this paper.

Collaboratory Goals/Participation Requirements for Collaboratory #3 Members

A set of minimum requirements was established for participation in the Collaboratory #3:

1. Foster the development and implementation of a CLR at the participant's institution in 2018-19:
    - Documenting learning outcomes/competencies.
    - Developed in a digital format as an official document that will be issued by the institution.
2. Work effectively with a diverse campus team.
3. Already have one or more CBE programs that lead to a certificate or degree.
4. Attend two Collaboratory #3 convenings to develop standards.
    - Offsite work will be done electronically between the two convenings.
    - Communicate with Collaboratory partners between meetings to refine and confirm standard element recommendations.
5. Those who have not implemented a CLR before joining Collaboratory #3:

Attend three national CLR phase two workshops on developing and implementing a CLR.
Form a project team to lead work at your college/university.
Integrate learner data across information platforms, as needed.
Implement a secure digital record.

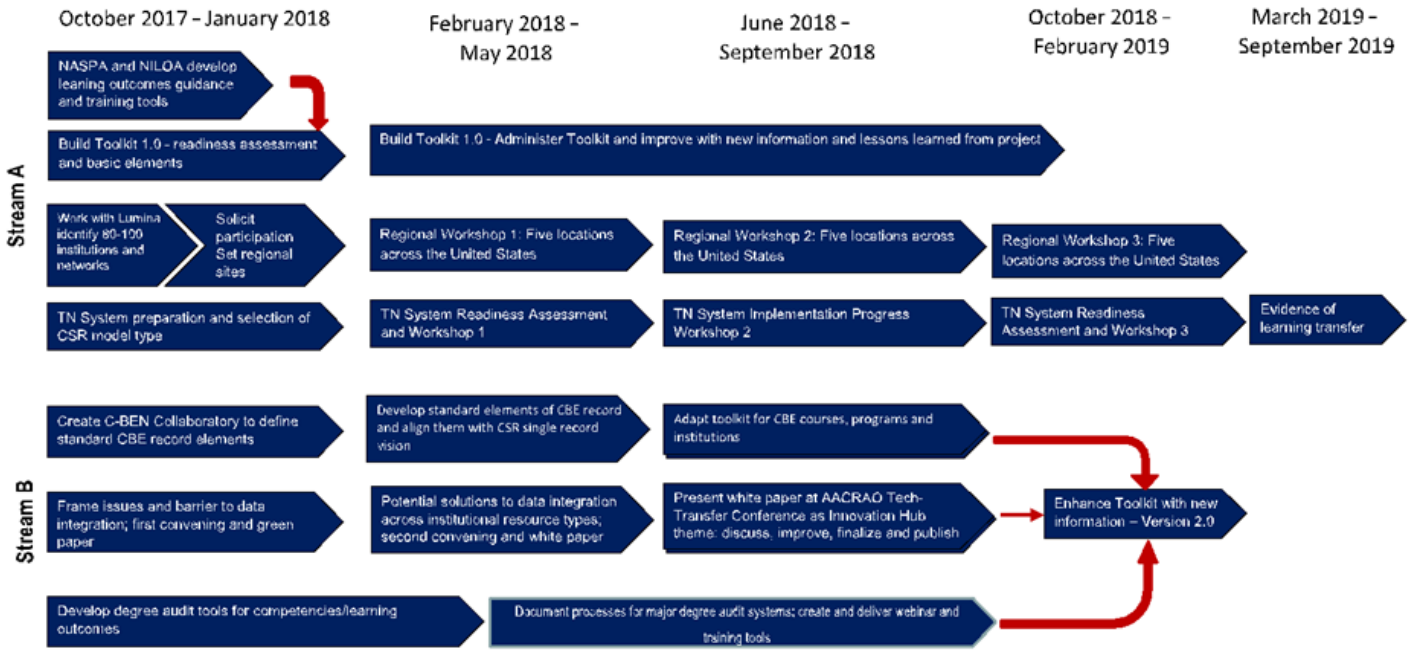
Timeline

Below in Figure 1 is the timeline for phase two of the CLR project. The work of various teams is depicted in two "streams." These two streams consisted of the following:

1. Stream A:
    a. Work with systems, networks, and individual institutions to identify those ready to take on the development and implementation of CLRs
    b. Develop an initial readiness assessment and toolkit of resources, based upon what was learned in Phase I
    c. Provide expert resources in the form of workshops, webinars or other supports tailored to meet the needs of each participating group

2. Stream B:
    a. Develop CBE record content standardization
    b. Address data integration challenges and solutions
    c. Develop CLR integration in degree audit
    d. Update and improve the toolkit 2.0

Figure 1. CLR Phase II Project Timeline (2017).



Stream B outlines the intended timeline for the work of the C-BEN Collaboratory #3 during the drafting of the project charter. Although the specific steps of the work progressed on a different schedule, the end result was achieved within a reasonable and successful timeline. The draft standards have been defined within this paper and Collaboratory #3 has completed its initial work. Institutional participants who did not have a CLR in place have now joined with the full group of institutions in Stream A that are working on the development and implementation of a CBE CLR for their institutions. Collaboratory #3 will continue to work on adapting the toolkit for other CBE institutions and provide insight into troubleshooting and data integration solutions.

Requirements and Standards for a Competency-Based Learner Record

As stated in the introduction, five categories for CBE standards were identified by Collaboratory #3. These five areas were also clearly evident in the earlier draft of record elements created by C-BEN. Collaboratory #3 tested these five areas to ensure that all key elements needed or preferred could be placed within one of the categories. Figure 2 below shows that the five areas were broken up in two sub-groupings: initial requirements to produce a CBE CLR and optional elements. Optional elements became more evident to the three CBE institutions involved in phase one of the CLR project. This was based on broad feedback from key stakeholders and, in particular, students. The students interviewed and surveyed in phase one requested these additional features for a CBE CLR to make it more meaningful and useful.

Figure 2. Initial Requirements and Optional Elements of CBE CLR by Category.

	Accessibility	Authentication & Configuration	Content	Data Security & Compliance	Documentation & Formatting
Initial Requirement	1. Verifiable by authorized entities (employer, institution, other) 2. Verifiable by student	1. Authentication (student) 2. Authentication (receiver) 3. Configurable by school	1. Institution reference for terminology 2. Grade/mark of proficiency or level of performance indication 3. Competency statement 4. Date completed	1. Secure (address fraud issues) 2. FERPA compliant 3. Permission granting for sharing 4. Ability for student to provide additional PII	1. Visually appealing 2. Machine readable 3. Mobile friendly/responsive design 4. Digital document 5. Printable 6. Digital record format 7. Searchable record via electronic means
Optional Elements	1. Ability to push out to a student vs. a student having to "pull" the transcript	1. Configurable by student	1. Additional student content allowable 2. Official and unofficial version 3. Faculty information 4. Evidence of learning 5. Credit equivalent	None	1. Badges and other certifications 2. Assessments, rubrics and faculty feedback

Accessibility Requirements and Standards

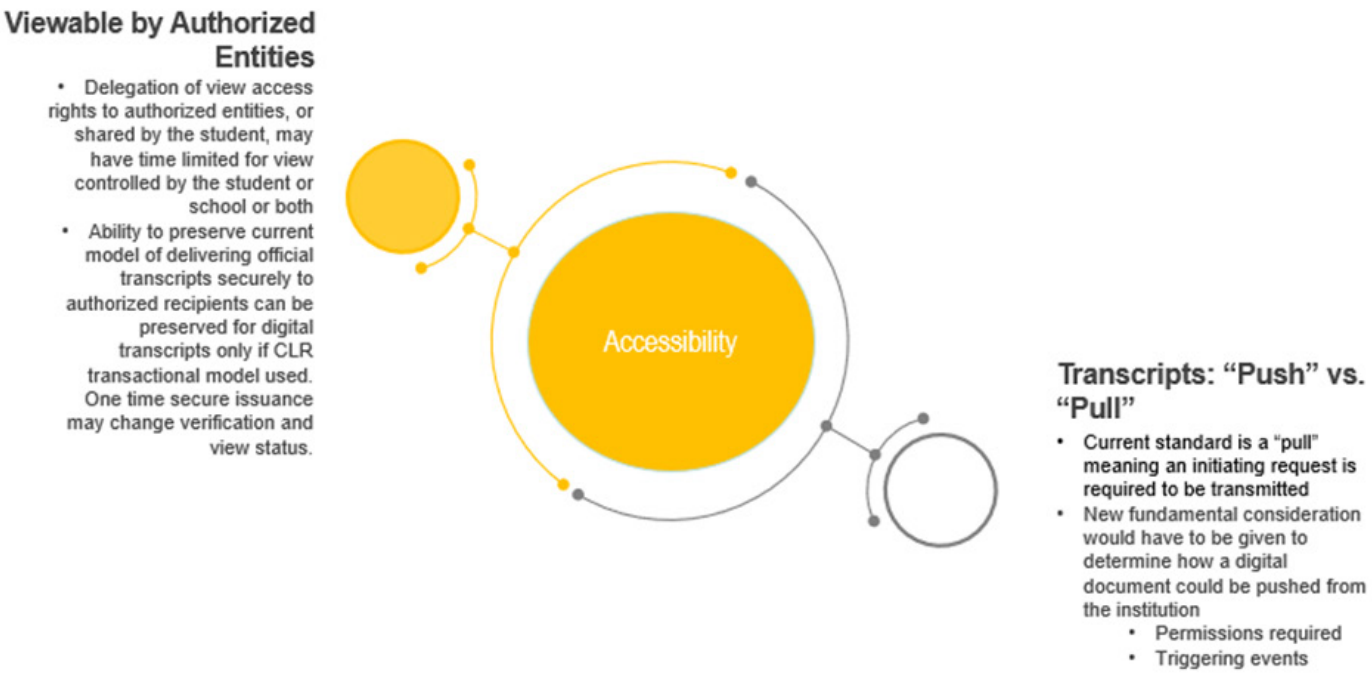
Initial Requirement

1. *Viewable by Authorized Entities (Institution, Employer, Other)*
   The record needs to be able to be viewed by those who are authorized to view it. The institution will need to determine how to share or produce the CLR – and ensure that all those who "view" the document (interact with the data) are authorized to do so by the student or the institution, as appropriate under applicable regulations.
2. *Viewable by Student*
   As with the authorized entities, students must have full access to view the CLR. Note this does not include the ability to edit, place things on the CLR, etc. – those are separate issues.

Optional Elements

1. *Transcripts: "Push" vs. "Pull"*
   As is noted below, the traditional method for a transcript is a pull – meaning in response to a request. In the future, institutions may choose to consider obtaining student permission to do more of a push – possibly as a result of a triggering event internal or external to the institution. The point would be to produce the data in the CLR before the student requests it. Of note: security and permissions require definition here.

Figure 3. Accessibility



Authentication and Configuration Requirements and Standards

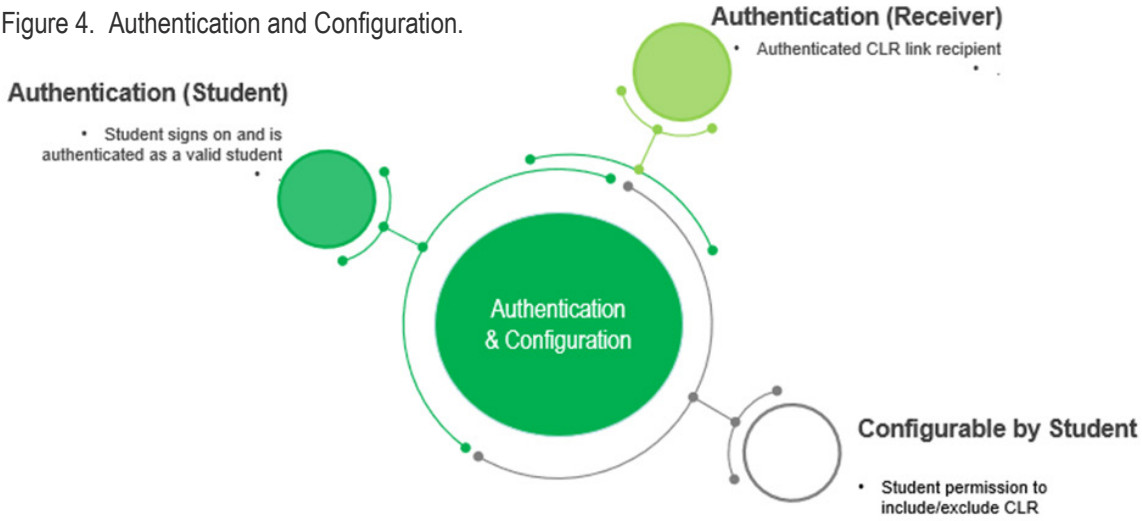
Initial Requirement

1. *Authentication (Student)*
   Institutions must secure student authentication or verification.
2. *Authentication (Receiver)*
   Institutions must ensure that the receiver is authenticated and is the receiver for whom the student indicated permission.
3. *Configurable by Institution*
   The institution should be able to configure the document to meet its own needs, whether that is for a large population of students or a single, unique student. Ultimately, this remains a choice for the institution itself. The institution must be able to express what it wants to have on the record and specify across levels and types of education what is desired or required.

Optional Elements

1. *Configurable by Student*
   The university/college may choose to let a student have the ability to configure the presentation and data on the document to include student objects in the record as well as to limit on what is shown on the record. If the student limits disclosure of a full record to only part of it, a notation should be included on the record, so that the receiver of it is made aware that it is a partial record of the student's learning.

Figure 4. Authentication and Configuration.



Content Requirements and Standards

Initial Requirement

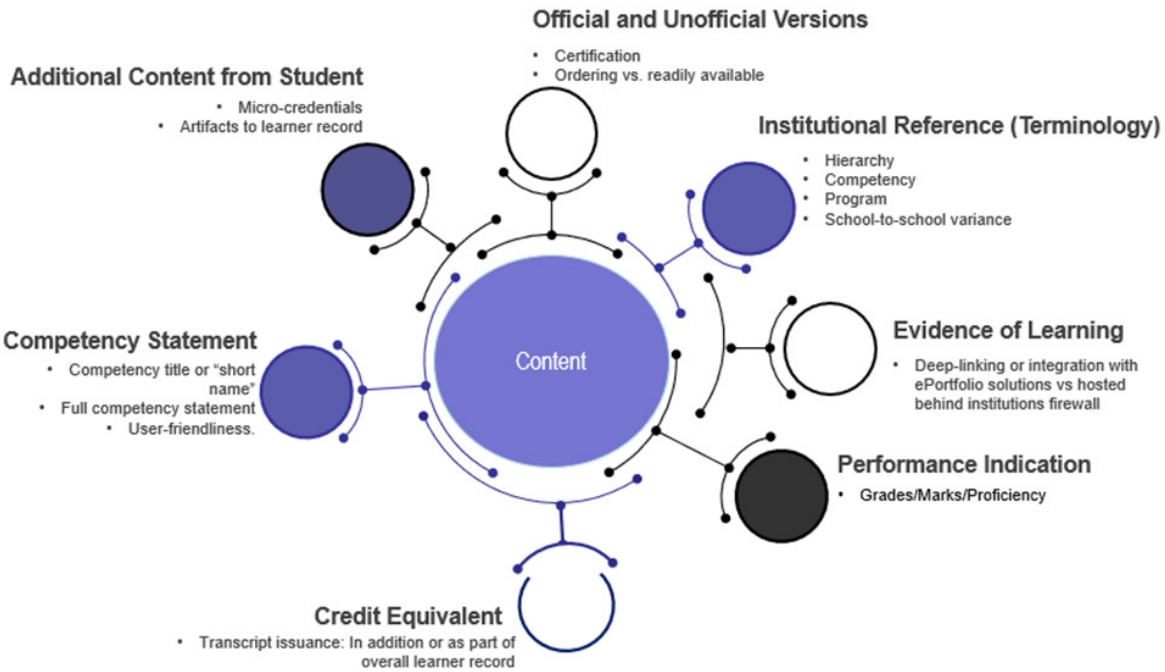
1. *Institutional Reference for Terminology*
   Include a legend (similar to an academic transcript legend) that specifies all terms and meanings.
2. *Grade/Mark of Proficiency or Level of Performance Indication*
   There should be a mark included – at most elementary, a value of pass or no pass. It can then include variations on the level itself such as high pass, exceeds expectations, etc.
3. *Competency Statement*
   This is a key piece and is the basic competency that is being assessed and measured. It is recommended this is conveyed in easy-to-understand language that will have meaning across a variety of stakeholders or consumers of the records.

4. *Date Completed*
   A date of completion is required. Because CBE may be delivered in a non-term structure, the university may include a start date or otherwise mark the beginning of formal study but is not required to do so, but the record should include a date that the meeting/ mastery of the competency was verified or registered.

Optional Elements

1. *Additional Student Content Allowable*
   Allow students to put in their own content that will show as non-verified or that is clearly identified as not university/college verified.
2. *Official and Unofficial Versions*
   Make available both unofficial and official versions – though the university can determine whether either version is printable or not. Unofficial versions should be clearly marked to prevent any misunderstanding and establish trust in official versions.
3. *Faculty Information*
   Information may be included on specific faculty and their qualifications.
4. *Evidence of Learning*
   Potential to link to or include evidence and artifacts of learning through a portfolio or other connected system.
5. *Credit Equivalent*
   To meet various regulatory and practical needs, institutions may want to include a credit unit value and/or display a unit equivalent to a credit hour-based metric.

Figure 5. Content.



Data Security and Compliance Requirements and Standards

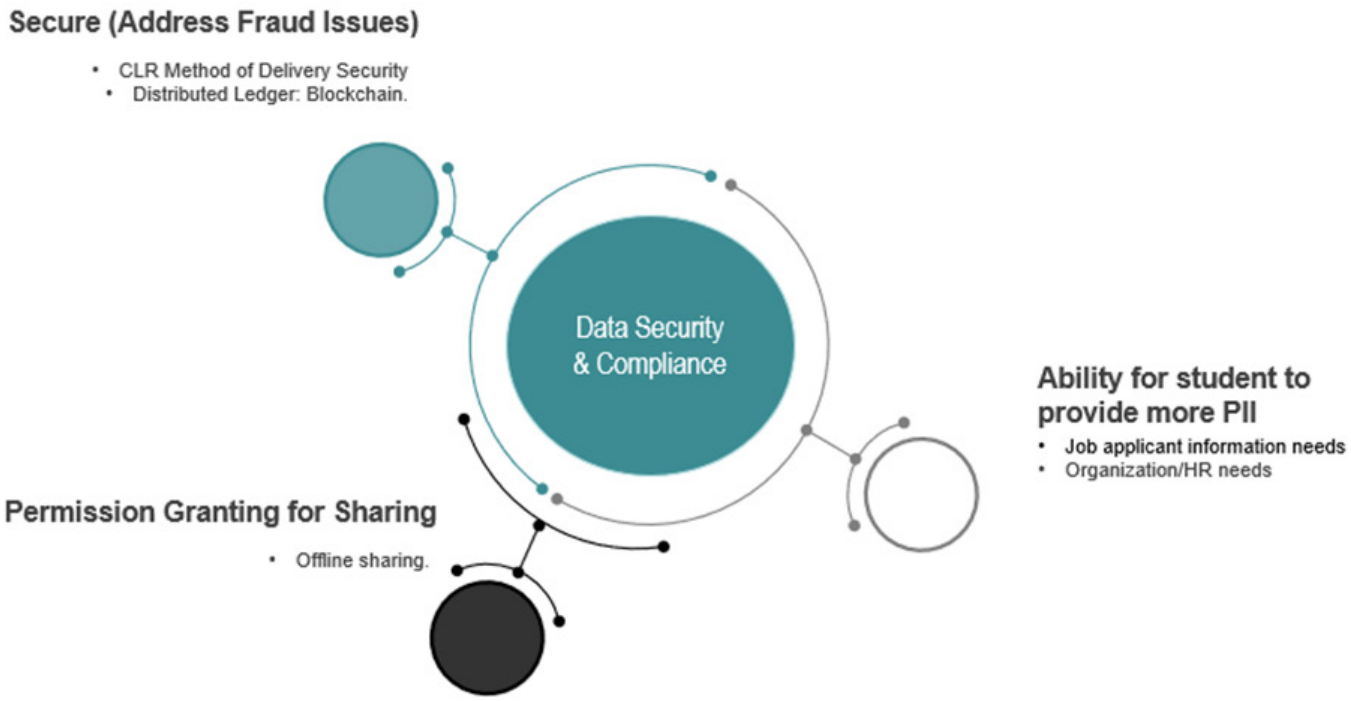
Initial Requirement

1. *Secure (Address Fraud Issues)*
   Must meet the same regulatory and best practice requirements as official transcripts.
2. *FERPA Compliant*
   Any digital record must meet all FERPA requirements.
3. *Permission Granted for Sharing*
   There must be a way to share the document/CLR with a recipient whether that is done by the institution on behalf of the student or by the student directly.
4. *Ability for Student to Provide Additional Personally Identifiable Information (PII)*
   If the student desires to add any additional information (like a unique code or other specific info) there should be an opportunity for him/her to specify this.
5. *Digital Document*
   The CLR is a digital-first document and should not be developed as a "paper" document with a PDF version.
6. *Printable*
   There may be a need to print the record so there should be a viable way to print, whether as a PDF download or a webpage download or similar.
7. *Digital Record Format*
   Please see #5.
8. *Searchable Records via Electronic Means*
   The competency data underlying the record should be discoverable via electronic means. This could allow records to be "mined," creating matches between competencies and courses, job requirements, credentials, etc. A PDF or paper-based document is not easily searched on the web so the language used to create the digital document must facilitate discoverability and ease of use by entities such as search engines and data integration points/systems.

Optional Elements

None

Figure 6. Data Security and Compliance.



Documentation and Formatting Requirements and Standards

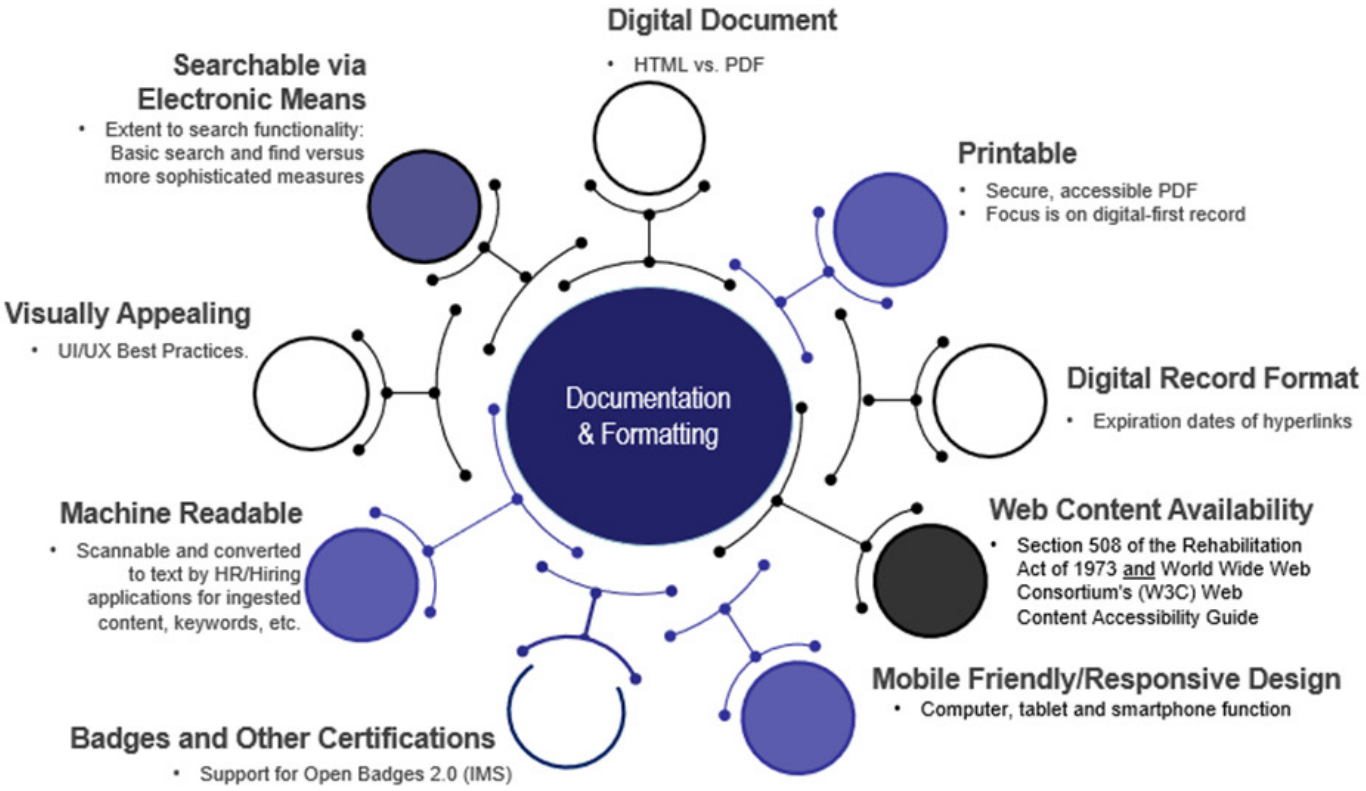
Initial Requirement

1. *Visually Appealing*
   This is a digital-first "document" and should convey information simply and visually. This is not a translation of a large amount of text being conveyed digitally but instead an opportunity to represent the learner's achievements in a visual and appealing way. The institution may configure the record in any manner they choose to be "visually appealing" and should test the appeal with students, faculty, potential employers, etc.
2. *Machine Readable*
   It should be able to be "read" by machines, whether via a technology such as OCR or via digital conveyance, without the need to "translate" to a digital representation.
3. *Web Content Accessibility*
   The CLR must meet any regulatory accessibility needs such as ADA, Section 508.
4. *Mobile Friendly/Responsive Design*
   As a digital-first document, it should be able to be rendered suitably across a wide suite of devices, including mobile.

Optional Elements

1. *Fundamental Learning Unit*
   As data standards emerge for the information to be captured and transmitted for every learning experience/competency, institutions should move toward the use of that standard when capturing, reporting, and creating records.
2. *Badges and Other Certifications*
   Institutions may choose to include other forms of certifications of any sort in the record.
3. *Assessment, Rubrics, Faculty Feedback*
   These optional elements could be included in a form that is either linkable or displayable on the record, adding depth to the student competency achievement.

Figure 7. Documentation and Formatting.



Barriers to Data Integration

Collaboratory #3 has now joined with the full phase two group. As they begin the work of developing their own CLRs, Collaboratory #3 institutions are just beginning to identify barriers to data integration beyond what was identified by the CBE institutions in phase one. As preparation to draft these standards and in consideration of each of their own campus IT issues, the Collaboratory #3 group reviewed the data report produced by the Data Integration Workgroup to produce a CBE CLR. The first two items bulleted below mirror the Data Integration Workgroup's findings, see https://www.aacrao.org/docs/default-source/signature-initiative-docs/clr/data-integration-white-paper-9_2018.pdf. The third item was noted by multiple Collaboratory #3 institutions.

Early data barriers noted by Collaboratory #3 institutions during initial scope planning include:

- Managing competing demands and IT priorities
- Integrating information systems in order to produce a CBE CLR; architecting a CBE CLR environment
- Developing a CBE CLR while converting to a new Student Information System (SIS)
  - Identifying needed data fields
  - Understanding a new data structure and what data the new system can store for a CLR
  - Reporting capabilities

Steps for a Successful Implementation

For any institution that has already been working on converting or developing new programs in a CBE ethos, development and implementation of a record to comprehensively reflect CBE learning is paramount. Steps to consider for a meaningful record development and implementation include:

1. Project Team. Establish a CBE CLR development team consisting of at least the following: a team lead, Registrar, Information Technology lead, and a lead for each academic program area.
2. Timeline. Develop a clear timeline for completion and launch date. (From start to finish the completion timeline for the institutions in this project was one year.)
3. Business Process Review. Complete a business process review in workflow order that will identify barriers and needed areas to fix/improve upon, and build in measures to make these improvements in order to ensure a successful implementation.
4. CBE CLR Standards. During development, it is highly recommended that all initial requirements for each of the five categories outlined in this paper are included. Consideration of optional elements should be based on institutional needs and desires from feedback, particularly students.
5. Data Connectivity/Concerns. Particular attention will be needed regarding the ability of the Learning Management System (LMS) to easily communicate data/information to the student record/student information system (SIS). For the three CBE institutions in

phase one of the CLR project, this was the greatest challenge to complete/implement a CBE CLR record. For assistance and recommendations on data integration issues, see the white paper "The Integration of Data Across Institutional Platforms to Create Comprehensive Learner Records: Challenges and Solutions" on the AACRAO website at: https://www.aacrao.org/signature-initiatives/comprehensive-learner-record

6. Testing of Model. Include focus group testing of current students and administrative offices responsible for CLR production and distribution. This may involve transcript vendors.
7. Communication and Marketing Strategy. Create an internally focused communication and marketing plan for the campus community with a strong focus on current students. Create an externally focused plan for future students and receivers of CBE CLRs.

Appendix A. AACRAO/C-BEN Collaboratory #3 Workgroup Members

Michele Sandlin, AACRAO Consulting, Co-Chair

Joellen Evernham Shendy, Workday, Co-Chair

Yedid Minjares, C-BEN

Laurie Dodge, Brandman University

Dan Kellogg, University of Wisconsin Extension

Steve Phillips, Thomas Edison State University

Nanci Carter, Lipscomb University

Emma Miller, South Texas College

Donna Simon, Northern Arizona University

Christian Devoe, Southern New Hampshire University

Devon Edmond, Walden University

Brooks Doherty, Rasmussen College

Lori Jonason, Rasmussen College

Brent Capriotti, Western Governors University

Darin Hobbs, Western Governors University

Kacey Thorne, Western Governors University

Kathy Bucklew, Polk State College

Naomi Boyer, Polk State College

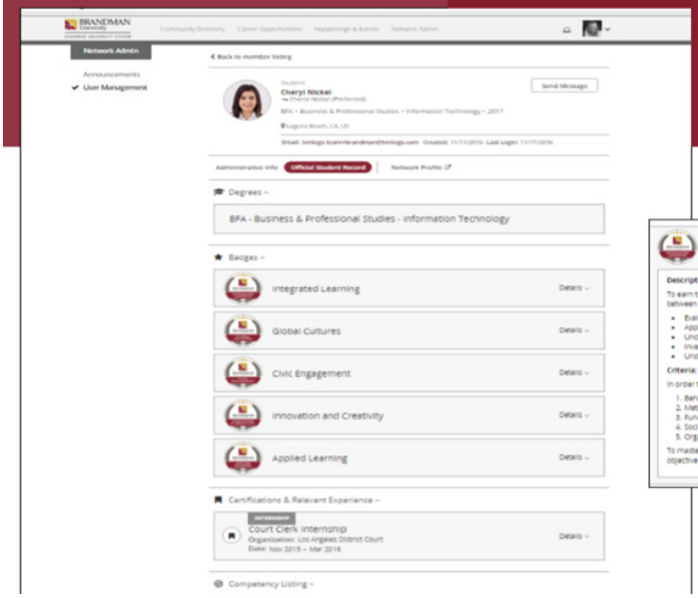
Ologa Iopu, Salt Lake Community College

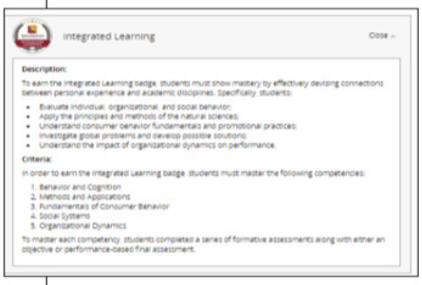
Carrie Riley, Salt Lake Community College

Appendix B. Examples of CBE CLR Records from Phase 1 of the Grant

Brandman University

Official University Record (verified)





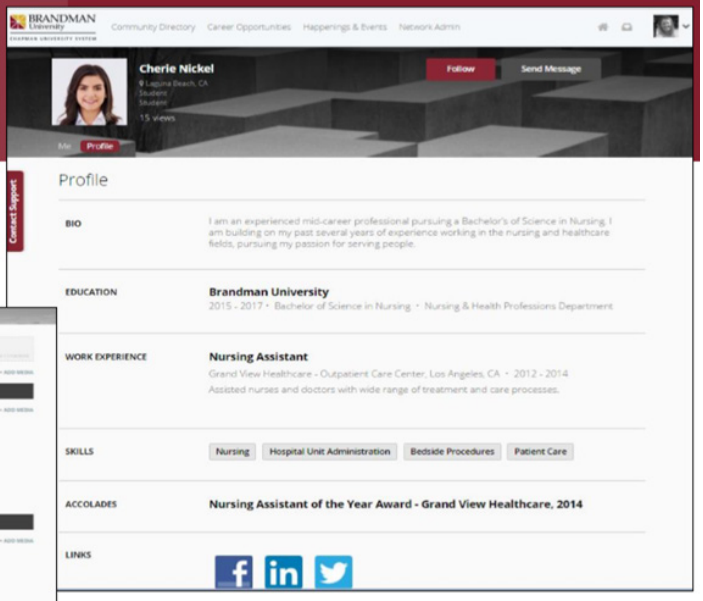
Summary view with click to open metadata:
- -Description
- -Criteria

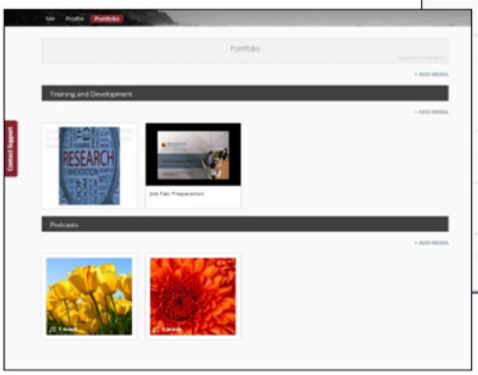
Student Loaded (Unverified)

Professional profile & portfolio

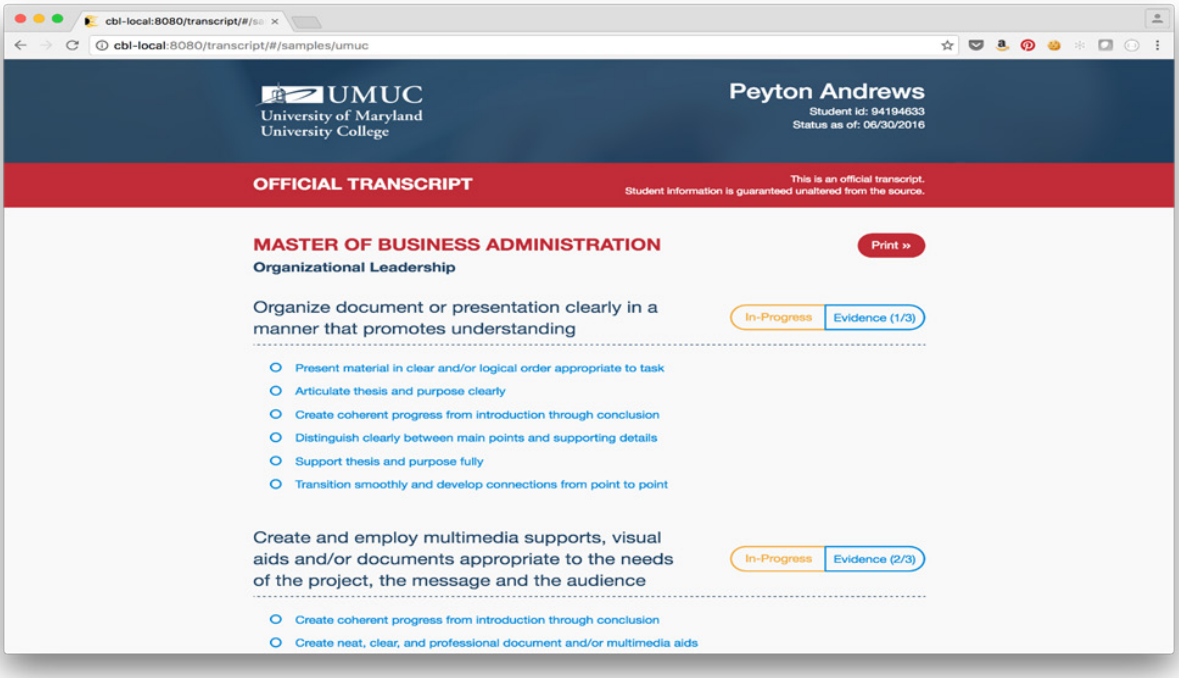
Externally shareable links & printable

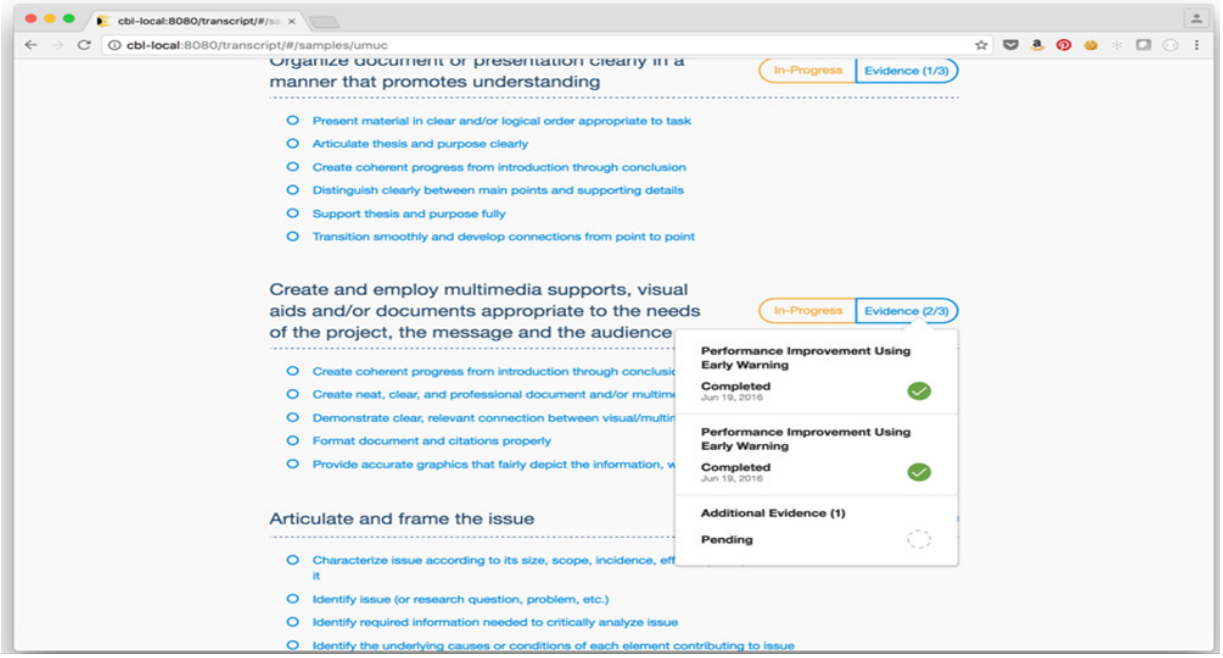
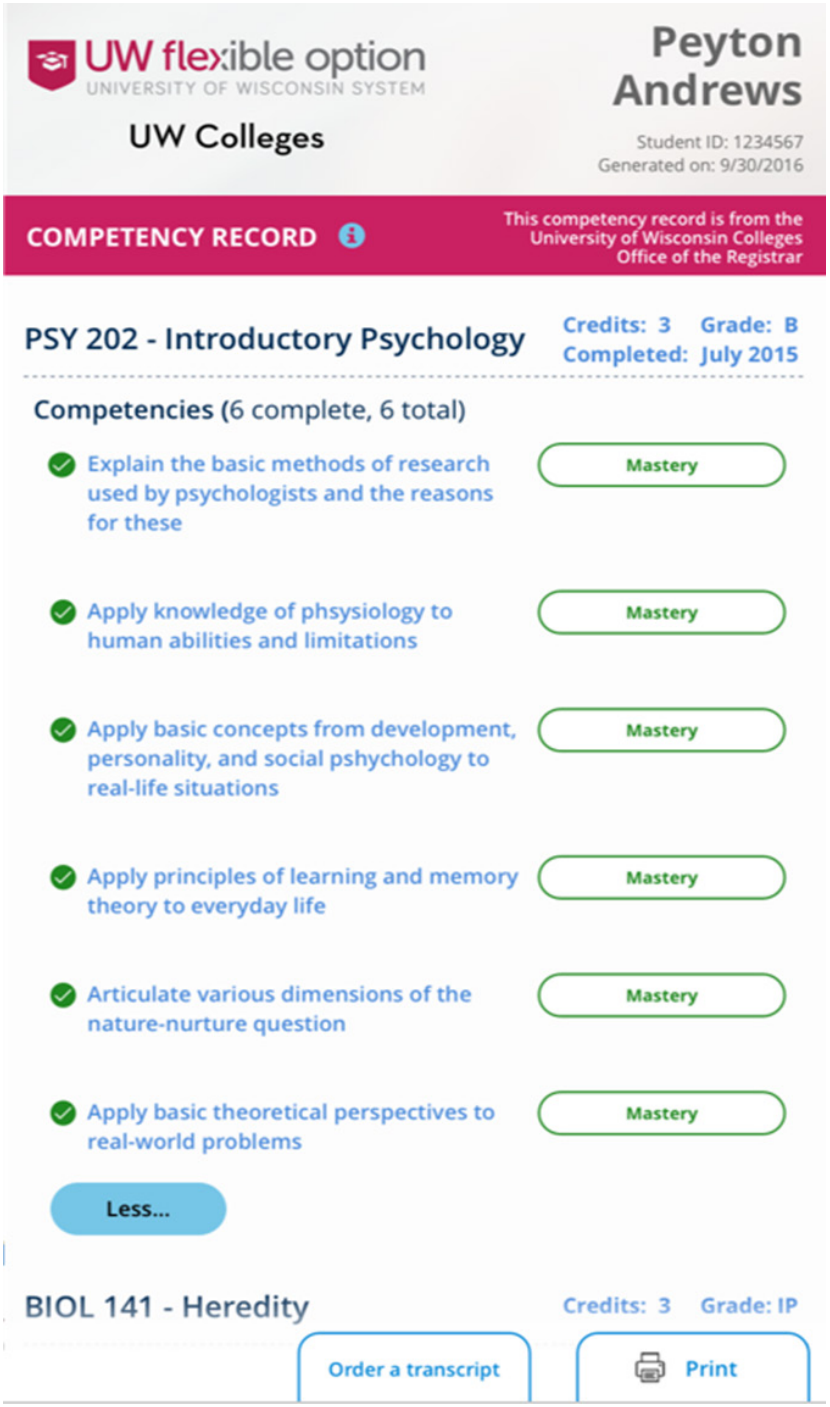
Ability to create multiple versions tailored for unique career fields





University of Maryland University College





University of Wisconsin System