STANDARDIZED COMPONENTS FOR A COMPETENCY-BASED EDUCATIONAL RECORD

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EXPERIENCE   **COMPETENCE**   **TRAINING**   **LEARNING**

COMPREHENSIVE LEARNER RECORD

ABILITY   **ADVANCED TRAINING**   **KNOWLEDGE**   **GROWTH**

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.

CONTACT US

1108 16th Street NW Ste 400
Washington, DC 20036

[P] 202. 293.9161
[F] 202.872.8857

www.aacrao.org
communications@aacrao.org

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Executive Summary

Why is a CLR Data Standard Required?

Since 2015, new forms of student records, Comprehensive Learner Records (CLRs), as they have come to be known, have been developed and implemented by a growing number of colleges and universities. To date, these have been developed largely as models or as institutional innovations that are unique to each creator. While CLRs offer a very different view of what is learned in higher education, these innovative records may not be useful to students who seek to transmit their contents to employers, other higher education institutions, licensing agencies, etc.

The digital consumption of CLRs will be an important element of their success over time, as they carry much more information that traditional student records. When received and processed by any institution, their transfer to student information systems, human resources systems or other databases, means they would also require much greater levels of data entry if they are not available in standardized digital formats. Although transcripts can be sent and consumed in digital file formats, we still see the majority of institutions consuming only visual renderings of them in PDF. The core information is too often manually entered into the institution's SIS and this is often a combination of technical challenges and the fact that only a handful of facts are entered into the SIS from the document. Because CLRs can carry a great deal more information than a traditional transcript, they could require a great deal more manual data entry if limited to only visual renderings of them in PDF. It is imperative that colleges and universities follow a single data standard when creating comprehensive learner records (CLRs), so that they may be useful to our learners, as well as to any institution, agency, company or service that may need to receive and consume them in digital file formats.

Review Conclusion and Recommendations

Per our review, the CLR Standard from IMS Global is the only comprehensive data standard in place today that meets the objectives of an official institutional learning-focused and comprehensive learner record. Postsecondary institutions of all types and at all levels that are currently using any form of micro-credentials, digital diplomas and certificates, or digital student records or other types should work to migrate that information into the IMS Global CLR Standard. New records that are being developed should be written to this standard. Care should be given to the ability of this standard to carry important competency descriptions in Credential Transparency Description Language (CTDL) that are interoperable with other networks, such as Credential Engine. The IMS standard supports this capability.

Further guidance should be developed to serve as an implementation guide that bridges the technical elements of the standard with the terms and conventions of those issuing, interpreting and rendering the learner records.

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Introduction and Background

New forms of student records are emerging that do not replace traditional academic transcripts but are focused on and capture information that demonstrates evidence of learning while pursuing a college education that cannot be represented by the information on courses, credits and grades carried on these traditional transcripts. CLRs represent a much wider picture of student learning and recognize that learning occurs in a variety of settings. Such learning may come from academic courses , competency-based instruction, or from co-curricular or experiential learning that is supervised by the college or university (examples include research projects, internships, global education, leadership in clubs or organizations, service learning, etc.). These have been known as extended transcripts (an early label that was somewhat quickly abandoned to avoid confusion with traditional academic transcripts), comprehensive student records and, most recently, comprehensive learner records (CLR). Examples of these records can be found on the AACRAO website.

The first work on CLRs demonstrated the potential for the display of learning-focused records in digital formats. These visualizations offered new and innovative ways of representing information, taking advantage of visualization technologies and new ways of thinking about the ways in which we can summarize large amounts of information to highlight those areas of greatest importance to the viewer. As the work progressed, it became clear that the focus of these records must be on learning outcomes (when referring to collegiate environments) or competencies (when referring to technical/vocational training or competency-based courses and programs). CLRs must be formed in layers, where a credential (degree, certificate, skill stamp, badge, etc.) is supported by a learning framework and this, in turn, is supported by evidence that comes from learning activities, artifacts, rubrics, etc. Early adopters of the CLR demonstrated creative ways in which these layers can be constructed and visualized to provide the learner and the recipient well-organized summary of information that can be examined at a cursory level or drilled into at deeper levels to discover details that support the summary.

As the concepts that underpin a CLR began to solidify, the use of these records was also spreading rapidly. This created the right conditions to formulate data standards to govern the CLR around a common data structure. In the absence of standards, institutions would likely implement a CLR as they see fit which would limit usage and interoperability. Data standards would also allow developers of student information systems and credential services to have a stable environment to innovate technologies that have a better hope of long-lasting use and return on investment. Further, they provide an environment where these data can be mined (with appropriate security for learner privacy) by receiving admissions offices, employers, agencies, etc., to determine how learners may meet degree entry, scholarship, job or other requirements.

The CLR Standard from IMS Global

In September 2019, IMS Global, a nonprofit agency focused on data standards, released the first and only data standard for a CLR. The development was completed through work with colleges and universities in the Competency-Based Education Network (C-BEN) and by following the development of the CLR that was taking place in Phases I and II of the AACRAO-NASPA-NILOA partnership, supported by funding from Lumina Foundation.

The standard also incorporated support for the Competency Transparency Data Language (CTDL), an important schema for describing credential information for machine-readable applications. This allows for the descriptions of competencies (which may include learning outcomes) to come from different sources and yet be commonly understood.

The Review

During the development of the standard and before its release, information about it was reviewed by individuals with close working knowledge of CLRs. These individuals were engaged in development of CLRs at their institutions or were part of the AACRAO-NASPA-NILOA partnership, or both. Early reviews were favorable and indicated that IMS Global was on the right track in developing a data standard that had the breadth to capture learning where and when it occurred. However, a broader and more structured review of the standard by various institutions, especially those that had co-curricular learning, was believed to be beneficial. Through this review, it could be determined if the standard might be used successfully, regardless of the learning modality, institutional size, type or student level.

AACRAO solicited participation from registrars across a wide variety of institutional types. Three representatives from NASPA: Association of Student Affairs Professionals participated and they, in turn, nominated a sitting student affairs professional to serve on the review group. IMS Global Vice President for Product Management Mark Lueba worked with the group to present and describe the standard, and to make available any and all documentation that supported it. A complete roster of review team members can be found in Appendix A.

Following a webinar with the review team where Mr. Leuba presented the standard and its supporting materials on October 31, 2019, the review team was asked to read the materials and complete a brief questionnaire. While open comments on any aspect of the standard were invited, it asked team members to ascertain whether, given what they had read, seen and heard, if the CLR Standard was capable of:

- Capturing the essential learning information derived from a course (in-person or online), a competency, and/or a co-curricular or experiential setting.
- Further, it asked whether the standard aligned with guidance provided by AACRAO for the content of a competency-based record (September 2019).
- Representing the status of an individual learning activity/achievement/credential (validated, revoked, etc.).
- Accurately stating the authority under which the achievement was claimed (i.e., the authority under which a degree was awarded).
- Use by any institutional type (technical, vocational, two-year, four-year, graduate, professional, public, private, for-profit).
- Representing the learning achieved by any post-secondary learner (dual enrollment, direct from secondary, transfers, working and returning adults, etc., at all post-secondary levels).
- Carrying and making manifest the digital protection properties (e.g., validity, immutability, etc.) necessary institutional attestation and recipient trust.

There was overall consensus that the standard was capable of capturing the essential learning information for any courses or competency-based learning where the outcome was graded or evaluated in some way. It was slightly less clear how the standard would work for learning outcomes and competencies evidence in co-curricular or experiential learning, specifically because these experiences

may not carry any grades or other performance indicators, thus indicating that further guidance is needed in this area.

The issue of authority was another area where clarification in an implementation guide will be critical to ensuring the standard will work well. For example, the authority under which an institution offers a degree can be interpreted and accurately represented in more than one way. It could speak to the accreditor that stands behind all degrees at the institution, the state that licenses the higher education institution to operate, the professional accreditor that stands behind the specific discipline in which this degree was offered, etc.

Following this initial round of review and comments, the review was opened up to technical experts for their feedback. The Digital Credentials Board of IMS Global served as the focal point for the review and was expanded to include other technical experts. This group included representatives from companies who have CLRs in production or are working to do so. The review group from the first round was also invited to review the standard from a technical perspective.

A video conference call was held with this expanded review group during the Digital Credentials Board meeting on November 15, 2019. During the video conference call, the results of the first-round review were presented and a discussion of the standard ensued with the group. Following the video conference, a survey was distributed to the group to solicit their feedback by mid-December 2019.

These questions were directed toward those companies and system developers that might use the CLR Standard to modify existing systems or products or to develop new ones. Topics included:

• Does the CLR Standard appear to contain the information you would need to create a CLR?
• Does it allow for "discoverable" layers of information to be rendered?
• Is the data structure flexible enough to accommodate course-based, competency and co-curricular/experiential learning experiences?
• Would the standard allow for the appropriate granularity, where the creation of micro-credentials would be possible, as well as aggregation of learning experiences, including any micro-credentials, up to a complete degree/credential record?

Of the eight responses from technical experts, the majority of responses (5) were positive that the standard would accommodate these system and product needs, there were a few responses that were not. However, these responses pointed to two needs:
1. More time to read the documentation and understand whether or not it would work; and,
2. Use cases before such a determination could be made.

All respondents felt that the standard would allow for discoverable layers of data in a record. Some respondents made assumptions about what a CLR would be or could do, such as one noting that the standard didn't appear to allow an end user to change or add to the record, which was seen as a negative. As an official student record that is verifiable by the issuing institution, records should not be edited by an end user. This negates the trust that the record is a reflection of learning that has been vetted by the entity issuing it.

There were also comments from a few technical experts that questioned whether or not higher education would adopt such records. These appear to be from companies that are not currently engaged in the development of CLRs or systems that support them. It signals the need for greater education and communication about what CLRs are and what they can do for students and institutions.

Next Steps

The IMS Global CLR Standard will evolve as practices and technologies change, over time. Its immediate need is to apply the standard in several use cases considering various learner and institution types. Next, performing a gap analysis of the use cases will identify areas that may need further review. The insights gained from the use cases and the gap analysis will inform the foundations of the implementation guide. From this any unseen gaps can be addressed, and the foundation of an implementation guide can be established.

Recommended Next Steps:
1. AACRAO should quickly direct work to develop use cases and an implementation guide that bridges the technical elements of the standard with the terms and conventions used to describe academic records and experiential records. Common definitions and uses for terms and structures like achievement, association and authority will be needed for the standard to be consistently applied across all postsecondary learner and institutional types.

2. AACRAO should itself and through its network of other higher education associations that may work with student records and learning, promote awareness of the IMS Global CLR Standard and point their members and corporate partners to the documentation. This can be done through association websites, communication media (i.e., AACRAO Connect), conference sessions and announcements.

Appendix A. Review Team Roster

Bhavesh Bambhrolia	University Registrar	Temple University
Insiya Bream	Assistant Vice Provost, Data and Systems	University of Maryland Global Campus
Helen Chen	Research Scientist, Dept of Mechanical Engineering	Stanford University
Lisa Emery	University Registrar	University of Michigan
Tom Green	Associate Executive Director, Consulting and SEM	AACRAO
Reid Kallman	Associate Registrar, Enrollment and Record Services	University of Colorado Boulder
Debbie Kushibab	Retired	NASPA
Mark Leuba	Vice President, Product Management	IMS Global
Cindy Lyons	University Registrar	University of California San Diego
Mark McConahay	Associate Vice Provost and University Registrar	Indiana University Bloomington
Rodney Parks	University Registrar and Director, Summer Session	Elon University
Amelia Parnell	Vice President for Policy and Research	NASPA
Burhan Siddiqui	Registrar	LaGuardia Community College
Dan Suchy	Director of Educational Technology Services	University of California San Diego
Doug Sweet	Director, Student Affairs Assessment and Planning	University at Albany
Laura Wankel	Special Assistant for Strategic Initiatives	Northeastern University
Kristi Wold-McComick	University Registrar	University of Colorado Boulder