STUDENT INFORMATION SYSTEMS (SIS) OPERATIONAL PRINCIPLES TO SERVE LEARNERS AND INSTITUTIONS IN THE 21ST CENTURY

AACRAO TECHNICAL ADVISORY COUNCIL

Overview

Student Information Systems (SISs) are foundational to the effective functioning of educational institutions. Historically focused on compliance and transactional processes, these systems must now evolve to reflect a broader vision—one that centers the learner experience, embraces interoperability, and supports institutional innovation. As institutions increasingly seek to bridge academic and workforce pathways, the SIS must serve as a strategic enabler, supporting learners across credit, non-credit, professional, and experiential domains.

Operational Principles

The following principles are intended to guide the development, evaluation, and implementation of SISs that meet the complex and evolving needs of 21st-century learners and institutions.

1. **Designed for All Users:** An SIS should enable the representation of all learners within the system of record and enable their achievements to asserted both within and outside of the curricular context. School administrators should be able to represent and track all learners at their institution seamlessly and record and assert their learning without workarounds or local development from curricular and other business domains. User interfaces should be designed for multiple devices and designed to integrate to render information from other platforms or systems. Features should include the ability of learners to manage their aspects (as appropriate) of their educational experience.

2. **System/Platform Interoperability/Integration:** Use interoperable open data standards so that all users can use tools and platforms seamlessly to operate their institutions in the best interests of their faculty and learners. This includes, but not limited to, CRMs, LMSs, DMS's, scheduling systems, room management systems, credentialing systems, digital wallets and portals, degree audit systems, course catalog management systems, transfer/course articulation systems, professional and continuing education systems and others. - SIS should be able to express and consume data in multiple formats (e.g., JSON, XML, TXT, other) standards. - Consumption of standard data for further institutional processing is a priority consideration and would alleviate institutional operational issues.

3. **Credential/Student Information Interoperability:** SISs should adopt open standards for digital credentials of all types (e.g., transcripts, CLRs, digital badges, microcredentials, etc.) which will foster interoperability and translation mapping of the contents. Institutions should be able issue and ascertain the verifiability of credentials.

4. **Learning Outcomes/Skills Centered:** Provide an infrastructure for institutional credential issuers to include evidence of the knowledge and skills a learner has demonstrated. The inclusion of evidence within the metadata can enhance trust in the micro-credential and also equip learners with added context that may be valuable to digital badge consumers (i.e., employers). Features should include the ability to issue and ingest credentials, and their meta-data, across multiple platforms and systems.

5. Privacy Protected and Maximally Secure: SISs should protect the privacy and security of individuals' data by adhering to principles such as data minimization, purpose limitation, transparency, user consent, and compliance with privacy and security.

6. Identity, Authentication and Authorization: SISs should adopt best practices that promote confidence that the learner is who they say they are, their credential was issued to and is now held by the person they claim to be, and the credential metadata contains the evidence of the claimed assertions.

7. Enable Standard and Flexible Academic Calendars: SISs should enable institutions to define academic calendars in a manner that corresponds to their pedagogy. It is recognized that some calendars need to comply with federal Title IV funding requirements, there are often other pedagogical approaches the institution needs to support.

8. Integrate Professional, Non-Credit and Curricular Learning: It is essential to capture all forms of learning seamlessly. SIS systems should ensure that both credit and non-credit learning can be recorded and expressed without requiring workarounds or complex integrations.

9. Process Automation: Institutions need to be able to automate routine and repetitive tasks without the assistance of IT experts.

The Student Information System was never just a transactional database—but now, more than ever, it needs to be a strategic foundation for learner-centered, interoperable, and future-ready education. Institutions, vendors, and policymakers must coalesce around shared principles that ensure SISs are designed not just to record the past but support the future of all learning.

By embracing these principles, we can ensure that SISs meet the evolving needs of today's learners and institutions, enabling greater equity, transparency, and innovation in higher education and workforce pathways.

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AACRAO TECHNICAL ADVISORY GROUP

The AACRAO Technical Advisory Council (ATAC) provides expert, forward-looking guidance on digital learner records and related technologies in higher education.

Comprised of volunteer leaders in student records, educational technology, and data management, the Council helps AACRAO anticipate trends, promote data standards, and advance secure, equitable, and interoperable systems. Members—drawn from AACRAO's voting membership and the broader credentialing ecosystem—are appointed by and serve at the discretion of the AACRAO Executive Director.