



AI and Education Data

Unlocking Insights with
Interoperability



Presenters



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Session Description

This forward-looking session examines the intersection of AI/ML and data interoperability in education. Now that schools and states are unifying their data through standards like Unity, they can begin to harness modern analytics and AI tools to drive insights – but only if the data is well-organized and accessible.

A panel of experts (AI solution providers, a district data officer, and a privacy advocate) will discuss how a unified data strategy enables real-time and predictive analytics in K-12 . They will share examples of using integrated data for early-warning systems, personalized learning recommendations, and operational efficiencies, all powered by machine learning on top of interoperable data streams.

Just as importantly, the session will address safeguards: how to maintain student privacy and equity when applying AI. Panelists will explore what policies or technical measures need to be in place so that leveraging AI does not compromise data privacy or magnify biases – aligning with the “Privacy, People & the Power of Unity” theme.

Session Content

Key Topics:

- **Data Readiness for AI:** Why interoperability is a prerequisite for effective AI – cleaning and unifying data from silos is estimated to consume far more effort than the AI modeling itself. Strategies to use standards to ensure your data is “AI-ready” (consistent formats, definitions, timely availability).
- **Use Cases Enabled by Unity:** Examples where having unified data unlocked AI applications: e.g. a state combining attendance, assessment, and course data to predict graduation risk; a district feeding integrated data to an AI tutor or recommendation engine. These illustrate the **transformative insights** possible when data flows freely between systems.
- **AI with Privacy in Mind:** How to implement AI solutions in compliance with student data privacy laws and ethical guidelines. Discussion of techniques like data anonymization, federated learning (keeping data in-house), and thorough vetting of third-party AI vendors. (The role of Unity/SDPC standards in encoding privacy obligations for AI vendors might be mentioned, tying back to the Unity **POD** concept.)
- **Future Trends – Interoperability Meets AI:** A look at what’s next, such as standardizing metadata for AI models or outcomes within data standards, or using AI itself to streamline interoperability (for example, AI tools that can automatically map one data standard to another). Attendees will be encouraged to consider how adopting interoperability standards today sets them up to take advantage of AI innovations tomorrow, in a **responsible and controlled** manner.

Leading Questions

Outcome Framing (Aziz)

By the end of this session, we want a shortlist of AI capabilities K-12 should seriously consider—so we can evaluate them next hour with our privacy colleagues.

What are the top 2–3 AI capabilities you believe are most valuable and realistic in the next 12–24 months?

A Unified Future (Joerg)

What AI becomes feasible—or materially better—once data is unified through standards (vs. today's siloed environment)?

Learning Acceleration (TQ White II)

Where does AI move the needle most *for students*: high-dosage tutoring, writing feedback, math coaching, language learning, study planning—what should be on the list, and why?

Gap Analysis (Jack)

What AI approaches help identify learning gaps early (skill mastery, prerequisite mapping, formative assessment insights)? What signals are needed, and what outputs are actually actionable for educators?

Early Warning

What predictive or 'early warning' use cases are worth pursuing (attendance risk, course failure, graduation risk, chronic absenteeism)?

Final Prioritization

If we can only advance 5 AI capabilities for near-term consideration, what are they?