



Ed-Fi Extension and Semantic Analysis: Indiana

Purpose and Brief of the Analysis

The purpose of this report is to work with the Indiana Department of Education (IDOE) as the partner of Ed-Fi Alliance (Ed-Fi) and share Ed-Fi's findings for the assessment of extensions and semantic alignment of the state's usage of data elements in Ed-Fi's core data standard.

Our analysis has concluded that Indiana is completely aligned with Ed-Fi core semantically, which means the data elements used from the Ed-Fi core are always used by the State as intended.

Indiana has used the extension mechanism in Ed-Fi for areas where the core data standard did not meet specific needs of the state in areas that include additional programs for alternative education and curricular material assistance, noncertified and other personnel not categorized as Staff, assessment accommodations on how an assessment is presented or taken, School status as a Choice or Freeway school, staff employment contracts, special education, and discipline.

As found in the section below, the extension analysis looked at areas where there are current options available in the core; where there might be better alternatives for extension; and where extensions should be considered by Ed-Fi for inclusion into the core data model.

Body of the State Analysis

The Ed-Fi Alliance is committed to sustaining the Ed-Fi data standard to support the capture, usage, reporting, and exchange of educational data. As such the Ed-Fi data standard promotes data interoperability in the industry, enables data-driven decision making, and hence contributing to the advancement of educational outcomes.

In a continuing effort to better serve the community of users, this analysis is the first of a periodic evaluation of how the various Ed-Fi states are using and extending the Ed-Fi data model. In particular, the analysis is meant to investigate the following questions:

- Is the State using the core Ed-Fi data model as semantically defined and intended?
- Does the State follow good practices in extending the Ed-Fi data model, adhering to the overall conventions embodied in the data standard?
- Do extensions duplicate what could be reflected in the Ed-Fi core model, or are there subsequent updates to the core that now cover what previously required an extension?
- Are there extensions that point to common needs across states and/or potential model changes that would benefit the community at large?



The analysis findings specific to Indiana are summarized in the following sections: *extension analysis* has a focus on the extensions the state introduced, and the *semantic analysis* evaluates the usage of the core data standard any deviations from the original purpose of the data element. The intent of this analysis is to improve the Ed-Fi data standard and its usage in the community. The analysis should be taken as an *opinion* based upon published materials by Ed-Fi and the states to stimulate further collaboration.

Extension Analysis

The Indiana extensions comprise three new entities, two new associations, and 46 attributes as outlined below.

- New association StudentAlternativeEducationProgramAssociation, a specialization of the GeneralStudentProgramAssociation, for students enrolled in alternative education programs, with new attributes:
 - StudentAlternativeEducationProgramAssociation.AlternativeEducationEligibilityReasonDescriptor
 - Multi-valued common StudentAlternativeEducationProgramAssociation.StudentAlternativeEducationProgramAssociationProgramMeetingTime with attribute StudentAlternativeEducationProgramAssociation.StudentAlternativeEducationProgramAssociationProgramMeetingTimeDescriptor.
- New association StudentCurricularMaterialProgramAssociation, a specialization of the GeneralStudentProgramAssociation, for students enrolled in the Curricular Material Assistance Program, with new attributes:
 - StudentCurricularMaterialProgramAssociation.LivesWithParentUniqueId
 - StudentCurricularMaterialProgramAssociation.StudentDoesNotLiveWithParent.
- New entity EducationOrganizationOtherPersonnel for noncertified and other personnel employed by the School Corporation, with attributes:
 - EducationOrganizationOtherPersonnel.LocalEducationAgencyId
 - EducationOrganizationOtherPersonnel.OtherPersonnelCategoryDescriptor
 - EducationOrganizationOtherPersonnel.OtherPersonnelTitleDescriptor
 - EducationOrganizationOtherPersonnel.OtherPersonnelCount
 - EducationOrganizationOtherPersonnel.FullTimeEquivalency
- New entity AssessmentAccommodation to indicate available accommodations on how an assessment is presented or taken, with attributes:
 - AssessmentAccommodation.AssessmentIdentifier
 - AssessmentAccommodation.Namespace



- AssessmentAccommodation.AcademicSubjectDescriptor
 - AssessmentAccommodation.AccommodationDescriptor
- The related new entity StudentEducationOrganizationAssessmentAccommodation to indicate what accommodations are used by the student in how the assessment was presented or taken, with attributes:
 - StudentEducationOrganizationAssessmentAccommodation.StudentUniqueId
 - StudentEducationOrganizationAssessmentAccommodation.EducationOrganizationId
 - StudentEducationOrganizationAssessmentAccommodation.AssessmentIdentifier
 - StudentEducationOrganizationAssessmentAccommodation.Namespace
 - StudentEducationOrganizationAssessmentAccommodation.AcademicSubjectDescriptorId
 - StudentEducationOrganizationAssessmentAccommodation.AccommodationDescriptorId
- Attribute extensions to School regarding their status as a Choice or Freeway school, as follows:
 - School.ChoiceIndicator
 - School.AccreditationDescriptor
 - School.FreewayBeginDate
 - School.FreewayEndDate
- Attribute extensions for calendar event durations, as follows:
 - Calendar.InstructionalTimeInMinutesIndicator
 - CalendarDate.EventMinutes
 - CalendarDate.EventDuration
- Attribute extension to the StaffEducationOrganizationEmploymentAssociation for StaffEducationOrganizationEmploymentAssociation.YearsOfPriorProfessionalExperience.
- Multi-valued common extension StaffEducationOrganizationEmploymentAssociation.StaffEducationOrganizationEmploymentAssociationContract with attributes:
 - StaffEducationOrganizationEmploymentAssociation.
StaffEducationOrganizationEmploymentAssociationContract.ContractDays
 - StaffEducationOrganizationEmploymentAssociation.
StaffEducationOrganizationEmploymentAssociationContract.ContractSalary
 - StaffEducationOrganizationEmploymentAssociation.
StaffEducationOrganizationEmploymentAssociationContract.SupplementalSalary
 - StaffEducationOrganizationEmploymentAssociation.
StaffEducationOrganizationEmploymentAssociationContract.PercentTitleSalary
- Attribute extensions to the StudentEducationOrganizationAssociation, as follows:
 - StudentEducationOrganizationAssociation.ELLInstrumentUsedDescriptorId
 - StudentEducationOrganizationAssociation.USInitialSchoolEntry
- Attribute extensions to the StudentEducationOrganizationResponsibilityAssociation, as follows:



- StudentEducationOrganizationResponsibilityAssociation.ADMCodeDescriptorId
- StudentEducationOrganizationResponsibilityAssociation.InstructionalDays
- StudentEducationOrganizationResponsibilityAssociation.InstructionalMinutes
- Multi-valued common extension StudentEducationOrganizationResponsibilityAssociation.StudentEducationOrganizationResponsibilityAssociationAdditionalEdOrgResponsibility, with attributes:
 - StudentEducationOrganizationResponsibilityAssociation.StudentEducationOrganizationResponsibilityAssociationAdditionalEdOrgResponsibility.SchoolCorpld
 - StudentEducationOrganizationResponsibilityAssociation.StudentEducationOrganizationResponsibilityAssociationAdditionalEdOrgResponsibility.SchoolCorpResponsibilityDescriptor
- Attribute extensions to the StudentSpecialEducationProgramAssociation are as follows:
 - StudentSpecialEducationProgramAssociation.CircumstancesRelevantToTimelineDescriptor or
 - StudentSpecialEducationProgramAssociation.TimelineComplianceDescriptor
 - StudentSpecialEducationProgramAssociation.ParentalConsentDate
 - StudentSpecialEducationProgramAssociation.FirstStepsTransitionDate
- Attribute extension to the StudentDisciplineIncidentBehaviorAssociation for StudentDisciplineIncidentBehaviorAssociation.CriminalGangRelatedEventDescriptor.
- Attribute extensions to DisciplineAction, as follows:
 - DisciplineAction.InterimAlternativeEducationSetting
 - DisciplineAction.DisciplineActionServiceDescriptor
 - DisciplineAction.StudentArrestDescriptor

DisciplineAction.ArrestReasonDescriptor.

Semantic Analysis

Indiana is completely aligned with the Ed-Fi data standard with all used data elements precisely aligned semantically with the Ed-Fi core.

Summary of Finds and Next Steps

The analysis found that Indiana created a moderate number of extensions to the Ed-Fi core in the areas that include additional programs for alternative education and curricular material assistance, noncertified and other personnel not categorized as Staff, assessment accommodations on how an assessment is



presented or taken, School status as a Choice or Freeway school, staff employment contracts, special education, and discipline.

In terms of the usage of the data elements used from the Ed-Fi core model (aka semantic alignment), Indiana is found to be completely aligned.

This analysis also provided Ed-Fi information on a need for the review of current design of some data elements listed below:

- New extension entities were created for AssessmentAccommodation and StudentEducationOrganizationAssessmentAccommodation indicating that the current Ed-Fi model treatment as a simple Accommodation descriptor on StudentAccommodation is too simplistic and not meeting the needs Indiana, and possibly others.

Based on these findings of the analyses, Ed-Fi would like to work closely with the IDOE as a part of its commitment to sustaining data standards. The following are opportunities for next steps for this collaboration between the State and Ed-Fi.

- An extension multi-valued common was defined for staff employment contracts with StaffEducationOrganizationEmploymentAssociation.
StaffEducationOrganizationEmploymentAssociationContract. This should be researched to see if this is a need across the community.
- Extensions of the StudentSpecialEducationProgramAssociation are typical across the states, as needs change and evolve in this domain. Collaboration across states should be used to keep this domain up to date with community needs.

Analysis across states may identify specific common extension attributes for consideration into core where cross-state collaboration is recommended.