XML schemas function as models for describing the structure of the records being extracted and transmitted through TREx. This includes:

- the sequence in which elements appear;
- the interrelationship between different elements, including parent and child relationships and nesting levels; and
- the types of data that are contained in elements or attributes.

The *TREx Data Standards* manual provides information on the data elements, coded variables, and schema for use by the districts and vendors of local student information systems for the development and maintenance of the extract file process.

> ***Note**: Similar to the TREx Data Standards, the TREx XSD will be updated and republished by TEA annually. Student Information System (SIS) vendors should support updates to the TREx XSD.*

The TREx XML schema ensures that student data files from school districts adhere to a common structure and consist of valid elements and attributes. An XML extract file must be syntactically perfect or it is rendered as unacceptable by an XML parser.

Restrictions control acceptable values for XML data elements. Restrictions on XML elements are called facets. In combination with an element's declared data type, restrictions enable the XSD validation process not only to validate the structure of the XML file but also to validate the data values contained within the file against its XML schema definition.

An example of a restriction to validate data commonly used in TREx is for a range of years. To define a rule for the ACADEMIC-YEAR data element so that the values fall within the range of 1957-2012, the TREx schema declares the restriction as:

```
<xs:element name="SchoolYear">
  <xs:simpleType>
    <xs:restriction base="xs:integer">
        <xs:minInclusive value="1957"/>
        <xs:maxInclusive value="2012"/>
      </xs:restriction:
  </xs:simpleType>
</xs:element>
```

The XML schema also enforces length restrictions for a given element by either an exact length,

Context Edit Overview

TREx uses context edits to verify data elements against the rules set out in the XSD. Each context edit is traced to its associated Edit Number, a description of which follows.

Context Edit Descriptions

Following is a list of TREx Context Edits.

Edit #	Element XML Name	Edit Rule
T001	StudentID	The first character of StudentID must be “S” or “0”-“8”.
T002	StudentID	Each character of StudentID must not be the same number.
T003	StudentID	The first three characters of StudentID must not be “000”.
T004	StudentID	If first character of StudentID is not an “S”, the fourth and fifth characters must not be “00”.
T005	StudentID	If first character of StudentID is not an “S”, the last four characters must not be “0000”.
T006	FirstName, MiddleName, LastName	The FirstName, MiddleName, and/or LastName must only contain the following characters: • a-z or A-Z • 0-9 • Apostrophe • Hyphen • Space character
T007	FirstName, MiddleName, LastName	Name must not contain only apostrophes.
T008	FirstName, MiddleName, LastName	Name must not contain only hyphens.
T009	FirstName, LastName	Name must not contain only spaces.
T010	FirstName, MiddleName, LastName	Data elements cannot be repeated as PersonType (student).
T011	FirstName, MiddleName, LastName	Data elements can be repeated as ParentType (parent) up to 9 times.
T012		

Edit #	Element XML Name	Edit Rule
		including grade 6, Withdraw Reason is not required for students who have withdrawn from school but Withdraw Date is required and entered.

TREx XSD Data Types and Restrictions

Following are the TREx data types and restrictions. Restrictions control acceptable values for XML elements. Restrictions used in the XSD validation process validate both the structure of the XML file and the data values against the XML Schema Definition.

Element Name	XML Name	Data Type	Restriction
TX Student Unique ID	StudentUniqueID	String	• Required if available. • 10 digit numeric value.
Student ID	StudentID	String	• Required element. Public Schools: • The only acceptable value for the first

Element Name	XML Name	Data Type	Restriction
(Student) Middle Name	MiddleName	String	• Optional element. • Limited to a single occurrence. • The minimum length is 1 and the maximum length is 30 characters. • White space is preserved. • The only acceptable value is a sequence of at least 1 to 30 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.
(Student) Last Name	LastName	String	• Required element. • Limited to a single occurrence. • The minimum length is 1 and the maximum length is 40 characters. • White space is preserved. • The only acceptable value is a sequence of at least 1 to 40 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.
(Student) Generation Code	Suffix	String	• Optional element. • Maximum length of a single character. • If provided, the only acceptable value is a single character in a rank from 1-9, A- C.
Date of Birth	BirthDate	Date	• Required element. • Limited to a single occurrence. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2040-01-01.
Gender Code	Gender	String	• Required element. • Limited to a single occurrence. • Maximum length of a single character. • The only acceptable value is one of the following letters: “M” or “F”.
Ethnicity Code	Race	String	• Required for Students prior to 2010-2011 School Year. • Limited to a single occurrence. • Maximum length of a single character. • The only acceptable value is a single character in a range from 1 to 5.

Element Name	XML Name	Data Type	Restriction
(Student) Address	Address	String	• Optional element. • Maximum length of fifty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
(Student) City	City	String	• Optional element. • Maximum length of thirty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
(Student) State	StateProvince	String	• Optional element. • Maximum length of two characters. • The only acceptable values are listed in Code Table TC20.
(Student) Zip	PostalCode	String	• Optional element. • Minimum length of five and a maximum length of ten characters. • If ten characters provided, must include a hyphen in position six.
(Parent) First Name	FirstName	String	• Required element. • The minimum length is 1 and the maximum length is 30 characters. • White space is preserved. • Limited to a nine occurrences. • The only acceptable value is a sequence of at least 1 to 30 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.
(Parent) Middle Name	MiddleName	String	• Optional element. • Maximum length is 30 characters. • White space is preserved. • The only acceptable value is a sequence of at least 0 to 30 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.

Element Name	XML Name	Data Type	Restriction
(Parent) Last Name	LastName		

Element Name	XML Name	Data Type	Restriction
(Campus) Phone	PhoneNumber	String	• Required element. • Maximum length of twenty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: EXText0123456789 # ( ) -
(Campus) Fax	Fax	String	• Optional element. • Maximum length of twenty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: EXText0123456789 # ( ) -
Academic Year	SchoolYear	String	• Required element if student has not graduated. • Maximum length of nine characters. • Punctuation allowed includes dash. • Can be repeated as needed.
Grade Level	GradeLevel	String	• Required element. • Maximum length of two characters. • The only acceptable value are EE, PK, KG, and 01 through 12.
Original Entry Date	EntryDate	Date	• Optional element. • Record must contain only one. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2040-01-01.
Last Date of Attendance	ExitDate	Date	8(ont)-1.1(/LBo279 re -0.004)-12.2(o.2(on)-12.3(l)-e27x8.9(y)16.1(7.1<7074>-1.1<69>3.2<60]TJ ET Q date with a minimum value greater than or equal to 1957-01-01 and les50-8.1( )]TJ 0.010 9 -01.265 -1.157 Td [(t)-1.1(han 204.1(h230)-12.3(1

Element Name	XML Name	Data Type	Restriction
Unschooled Asylee/Refugee Code	AsyleeRefugee	String	•

Element Name	XML Name	Data Type	Restriction
Personal Graduation Plan	PersonalGradPlan •	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.
Assessment Name	TestName	String	

Element Name	XML Name	Data Type	Restriction
Course Name	CourseTitle	String	• Optional element. • May be repeated for each course or academic period. • Maximum length of one hundred characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Course Abbreviation	Abbreviation	String	• Optional element • May be repeated. • Maximum length of one hundred characters. • White space is preserved. • Any of the following characters, including the space character, are valid: • ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Course Number	CourseID	String	• Optional element. • May be repeated for each course or academic period. • Maximum length of eight characters for public schools. Maximum length of 64 characters for private schools. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Course Semester	Semester	String	• Optional element. • May be repeated for each course or academic period. • Maximum length of one digit.

Element Name	XML Name	Data Type	Restriction
Course Teacher	CourseTeacher	String	• Optional element. • May be repeated for each CourseTitle. • Maximum length of forty characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Semester Sequence	SemesterSeq	String	• Optional element. • Maximum length of a single character. • May be repeated for each course or AcademicSessionType. • If present, the only acceptable values are 0 through A.
Special Explanation Code	Explanation	String	•

Element Name	XML Name	Data Type	Restriction
Performance Acknowledgment Bilingualism/ Biliteracy	BilingBilitType		

Element Name	XML Name	Data Type	Restriction
Hispanic - Latino	HispanicLatinoCode	String	• The only acceptable values are listed in Code Table TC16 (0/1) • Maximum length of one character. • Optional element.

```
< Migrant > 0</ Migrant >
< FosterCare > 0</ FosterCare >
< MilitaryConnected > 3 </ MilitaryConnected >
< Dyslexia > 0</ Dyslexia >
< Homeless > 1</ Homeless >
< AsyleeRefugeeCode > 2</ AsyleeRefugeeCode >
</ StudentDemographic >
< School >
< SchoolID > 005555555</ SchoolID >
< SchoolName > Bar School </ SchoolName >
< DistrictID > 005555 </ DistrictID >
< DistrictName > Bar Partner </ DistrictName >
< Address >
< Address > 4103 Slaughter Lane </ Address >
< City > Austin </ City >
< Country > US </ Country >
< PostalCode > 78749 </ PostalCode >
</ Address >
< PhoneNumber > 5124145247</ PhoneNumber>
< Fax> 5122920527 </ Fax>
</ School >
< Enrollment >
< GradeLevel > 09</ GradeLevel >
< EntryDate > 2002- 8- 30</ EntryDate >
< ExitDate > 2007- 1- 3 </ ExitDate >
< WithdrawDate > 2007 -3- 1</ WithdrawDate >
< WithdrawReason > 01 </ WithdrawReason >
< GradePromoted > 11 </ GradePromoted >
</ Enrollment >
< SpecialPrograms >
< LEP> 0 </ LEP>
< EconomicDisadvantaged > 00</ EconomicDisadvantaged >
< AtRisk > 0</ AtRisk >
< TitleI > 0</ TitleI >
< SpecialEd > 0</ SpecialEd >
< IEP> 0</ IEP>
< Bilingual> 0</ Bilingual >
< ESL> 0</ ESL>
< GiftedTalented > 2</ GiftedTalented >
< CTE> 0</ CTE>
< PersonalGradPlan > 0</ PersonalGradPlan >
</ SpecialPrograms >
< Assessment >
< TestName > 01 </ TestName >
< TestLevel > 10</ TestLevel >
< TestDate > 2006- 3</ TestDate >
< TestScore > 100</ TestScore >
</ Assessment >
< Assessment >
< TestName > 05 </ TestName >
```

```
< TestLevel > 11</  TestLevel >
< TestDate > 2007-  3</  TestDate >
< TestScore > 100</  TestScore >
  </ Assessment >
< Assessment >
< TestName > 06 </ TestName >
< TestLevel > 11</  TestLevel >
< TestDate > 2007-  3</  TestDate >
< TestScore > 100</  TestScore >
  </ Assessment >
< Assessment >
< TestName > 11 </ TestName >
< TestLevel > 10</  TestLevel >
< TestDate > 2007-  04 </ TestDate >
< ExitRequirementMetDate    > 2007-  05 </ ExitRequirementMetDate    >
< TestScore > Exempt  </ TestScore >
< TestCode > D </ TestCode >
  </ Assessment >
< Assessment >
< TestName > 12 </ TestName >
< TestLevel > 10</  TestLevel >
< TestDate > 2007-  02 </ TestDate >
< ExitRequirementMetDate    > 2007-  05 </ ExitRequirementMetDate    >
< TestScore > 2100</  TestScore >
  </ Assessment >
< Assessment >
< TestName > 14 </ TestName >
< TestLevel > 10</  TestLevel >
< TestDate > 2007-  02 </ TestDate >
< ExitRequirementMetDate    > 2007-  03 </ ExitRequirementMetDate    >
< TestScore > 2100</  TestScore >
< AssessmentSubTest
```

< ImmunizationDate > 2002- 4 </ ImmunizationDate >
< ImmunizationDose > 2 ImmunizationDose>
</ Immunization
< DisciplineActio
< DisciplineActionDate > 20 0- 2 - 21</ DisciplineAction ate >
Disciplin sc

```
< CurrentCoursework    >
< Course >
< CourseTitle  > Algebra I 2092</        CourseTitle  >
< CourseID  > 03100500</      CourseID  >
< Semester  > 1</  Semester  >
< ClassPeriod > 6</  ClassPeriod >
< SubjectArea   > MA </ SubjectArea   >
< CourseGrade  > 95</   CourseGrade  >
< Explanation   > A </ Explanation   >
< CourseTeacher>   Smith   </ CourseTeacher>
    </ Course >  <
```

TREx Complex Types

Following is a list of the complex types and groups included in the TREx XML schema. Please refer to Appendix B for a full copy of the TREx XML Schema.

Complex Type Name	Sequence
AcademicSessionType	SchoolYear GradeLevel SessionType CourseType AcademicSummaryType
AcademicStatusType	GraduationDate SpeechMetDate GraduationDiplomaType CertificateDate TexasGrant DistinguishedAchievements

Complex Type Name	Sequence
	TestCode
	PerformanceLevel
	AssessmentSubTest

TREx Enumerated Values

Following is a list of the data elements with enumerated values. These are described further in Sections 2 and 3 of this manual, as well as included in the schema in Appendix B.

Code Table Common Name	Element XML Short Name	Location
Advanced Measure	AdvancedMeasure	Student Record; Transcript
Assessment Name	TestName	Student Record; Transcript
Assessment Score Code	TestCode	Student Record
Bilingual Program Type Code	Bilingual	Student Record
Career Tech Ed Indicator	CTE	Student Record
Course Category	SubjectArea	Transcript
Country	Country	Transcript
Discipline Action Code	DisciplineActionCode	Student Record
Discipline Action Reason	DisciplineActionReason	Student Record

Performance Acknowledgment Dual Credit	PerfAckDualCreditCode	Student Record; Transcript
Race/Ethnicity (USDE 1997 definitions)	Ethnicity	Student Record, Transcript
Semester Sequence Code	SemesterSeq	Student Record, Transcript
Special Explanation Code	Explanation	Transcript
STAAR Performance Level	PerformanceLevel	Student Record, Transcript
State	StateProvince	Student Record, Transcript
Texas Grant Indicator Code	TexasGrant	Transcript
Title I Part A Indicator	TitleI	Student Record
Unschooled Asylee/Refugee Code	AsyleeRefugee	Student Record
Withdrawal Reason Code	WithdrawReason	Student Record

DualCreditType (0… n)
BilingBilitType (0… n)
CollegeAssesType (0… n)
ApIbType (0… n)
CertLicType (0… n)
IGCGradReview (0 or 1)
FHSPCollegeCareerInstructionIndicator (0 or 1)
AssociateDegree (0 or 1)
OnRamps (0 or 1)

CurrentCoursework (0 or 1)
Course (1 … n)
CourseTitle (0 or 1)
CourseID (0 or 1)
Abbreviation (0 or 1)
Semest.434 0 Td (6)5.8(8P512(62.4(or)1.7(1J 0 14 0 Td23166 0 Td (T1 8EMC /P <</MCII