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- ## High-level ER diagram



Object	Definition	Example
Academic Calendar	An institution typically runs its business according to multiple cycles: registration cycles, fiscal year-ends, payrolls, admissions cycles. The academic calendars typically define the cycles associated with enrollment and teaching	Academic year, term, semester
ACADEMIC RULE	A rule that constrains enrollment	Pre-requisite rule, admission rule, degree audit rule
CALENDAR	The archetype for the academic calendar	Fiscal calendar, academic calendar
Group	A collection of persons or groups (used in access management)	
LEARNING OBJECT	An object of pedagogical value that is created and curated by the institution. May be re-used. Access (read,write, modify) may be controlled by permissions assigned to roles just like any other object in the learning ecosystem. Metadata, tags and usage data are associated with all Learning Objects.	Video, game, simulation, static content (PDF, HTML), quiz
LEARNING OBJECTIVE	Cognitive, psychomotor or affective objectives	
Learning Plan	Learners' intended course of study	
LEARNING RESULT	Result assigned to a learner upon completion of a Learning Unit	Grade, standing, degree
LEARNING UNIT	Any definition of a learning activity. The abstraction used to isolate core attributes and relationships: learning objectives, organizational relationships, rules. Learning Objects, by contrast, are the actual objects of pedagogical value that are used to accomplish the Learning Objectives of the Learning Unit.	Degree, course, major, lecture
LEARNING UNIT INSTANCE	Any scheduled offering of a Learning Unit	Course offering, scheduled lecture

Organization	A group with some formal TOR within an institution	University, college, high-school, department, faculty
Permission	A permission defines access to a resource	Access to lab equipment, access to library resources
PERSON	Person lies at the heart of the Learning Ecosystem. A person may have multiple concurrent roles.	
Resource	Any resource used in the learning process	Room, server, projector, file, books, articles, videos
Role	A role can be attached to a person or group	

Detailed definitions

Academic Calendar

The actual names that are given to cycles vary from institution to institution: academic, year, term, semester, Lent term and Michaelmas term (Cambridge University). Increasingly, we find multiple concurrent cycles: graduate, undergraduate and continuing education may all run on different cycles. In many cases, the concept of a cycle itself may be inadequate. For example: we need something to run between 9:00 am November 11 and 3:00 pm November 14. The calendar object needs to handle all these cases.

Academic Rule

An academic rule is a rule that either:

1. Constrains enrollment in a Learning Unit.
2. Defines the conditions for the completion of a Learning Unit

They can be very simple as in: "In order to register in MATH200 you need to have completed MATH100". Or, that can be quite complex as in Degree Requirements.

A Learning Object:

1. Has pedagogical value for the consumer
2. Is re-usable
3. Is searchable (across the Web)

Examples of Learning Objects include:

1. Videos. A learning tool video platform allows parts to videos to be tagged, supports viewer analytics, supports access controls
2. Static content: PDF, html, wikis
3. Games
4. Simulations
5. Quizzes

Usage statistics (analytics) help inform the design of subsequent iterations of Learning Objects. For example, if a video platform (eg Kaltura) records which parts of a video are most watched, this information can be used in the design of the next version of the video.

Learning Objective

Learning Objectives can be attached to any learning unit.

1. A course can meet certain learning objectives.
2. Learning objectives can be specified for an individual lecture
3. An entire degree program may have to meet certain learning objectives. This is especially important in the context of the certification of professional programs

Learning objectives are typically divided into:

1. Cognitive
2. Psychomotor
3. Affective

Learning Plan

The Learning Plan can be short-term as in a timetable for the following term's courses. It can be long term as in the case of someone who wants to become a medical doctor: stretching from Biology prerequisites all the way to residency requirements.

Learning Result

The term Learning Result covers 3 different concepts:

1. A measure of success in meeting the learning objectives of the learning unit. This can be a grade (78%, 3.5, A+) or a standing (PASS, FAIL)
 2. A unit measure of the "amount learned" - "3 credits", "2 units"
 3. Recognition on a transcript of completion of a learning unit: BA major in History, CHEM 123
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Learning Unit

The concept of a "Learning Unit" comes from Kuali Student. Canonical Learning Units are prescriptive in nature: MATH100 consists of differential calculus. HIST200 covers the ante-bellum South. Learning Units can be courses, programs, majors....indeed, anything to which the word "learning" can be applied. A Learning Unit ID is like a SKU. This allows for the creation of an inventory of Learning Units (a curriculum) without having to worry about the exact nature of the items.

Learning Unit Instance

This is the actual offering of a Learning Unit. It could be a Section, an Internship or a specific version of a program (offered between certain dates). Learning Objects (the actual things with pedagogical value: lectures, lecture notes, videos, quizzes) are made available for a given Learning Unit Instance. The learning Unit Instance is what the Learner enrolls in.

Person

Person lies at the center of the Learning Ecosystem data model. Often there are two possible relationships between a person and any other object in the model:

1. Learner - Instructor
2. "Advisee" - adviser
3. Instructional designer - instructional consumer (learner)