

The Anatomy of LevelUp Badges and Rewards

DRAFT 3 Data Requirements

By Lance Christmann

1/17/2012

Table of Contents

The Anatomy of LevelUp Badges and Rewards	1
Table of Contents.....	1
Taxonomy	2
Data Entry	2
The Badge	2
One-Time Setup.....	2
Scoring Guide.....	3
Badge Validation.....	4
Accumulating Badges	4
Progress Reporting.....	4
Progress Approval.....	5
Rewards	5
Awards	5
Learning Goals	6
The Hierarchy of Badges and Rewards	6
Rank.....	6
Progression	6

Taxonomy

Throughout this document, there will be references to the following words:

- **Provider** – This is a person who may be the representative of a group or organization. The provider will be the primary representative of the content and will create badges to attach to that content.
- **Learner** – This is anybody within LevelUp’s system who accumulates badges or participates in rewards.
- **Validator** – This is a person who represents a governing authority. They will validate badges as “officially approved” by the governing authority.

Data Entry

The following data specs will define the badge system within LevelUp. Users will have two formats to enter this data: an online form and an API.

Online Form – There will be a set of easy-to-use online forms that allow providers to manage the setup of their badges. Additionally, those providers will have access to a simple form for the reporting of a badge. Providers will report for a learner who has specifically opted in to the content. Only those learners who have opted in to a provider will be reportable. Additionally, a learner may self-report the success of a particular badge.

API – LevelUp will provide a RESTful web service to allow for the creation and reporting of everything contained within this document. The goal with this API is to allow many 3rd-party management tools and content easy access to the system.

The Badge

One-Time Setup

The badge will be set up in the system once. The content provider will be the one analyzing their content and awarding appropriate badges for various achievements. Unless specified, the provider will be allowed to edit the fields of the badge. If the provider edits a previous version of the badge, LevelUp will automatically create a new version of badge as a separate badge object. The following fields will define a badge:

- **Badge ID** – An auto-generated ID by LevelUp. This is not editable by the provider.
- **Badge Version** – An auto-generated version number by LevelUp. This is not editable by the provider. This is in order to maintain a historical state for learners who previously completed a different version of the badge without changing their history.
- **Badge Version Date** – An auto-generated timestamp of the version by LevelUp. This is not editable by the provider.

- **Badge Rank** – A variation of a badge that would replace an existing badge. Zero is the lowest possible badge rank; 1 will override zero; 2 will override 1 or 0; etc. This is similar to a bronze, silver, gold rank.
- **Badge Name** – The badge name (*probably a 30 character limit*).
- **Badge Artwork** – The badge artwork. LevelUp will probably require 2 sizes: 1 size that can be large (*possibly 256px*) and one size for tiny display (*possibly 32px*).
- **Badge Short Description** – A short text description of the badge. The short description is used for tool-tips or tweets (*probably a 100 character limit*).
- **Badge Full Description** – A longer character text description describing more about the badge or the reason why a learner will have acquired this badge.
- **Location In Content** – A text description of exactly what location within the content that the badge aligns. If the badge applies to the entirety of the content, it will be described as such.
- **Validators [Array]** – The provider may not edit this array. Only validators may add or remove themselves from this array.
- **Standards [Array]** – This is a list of competency standards. There can be any number of standards attached to the badge. Each standard will have it's own set of data.
 - **Standard ID** – An ID referencing a LevelUp key. LevelUp will provide a key for every state standard and common core standard. Providers will be able to add their own standards to the system, thereby creating new keys.
 - **Standard Score Range** – This is the expected range of scores allowed within this badge (low and high score). The learner will have to score within this range in order to achieve this badge. The allowable values will range from 1-4, based on Marzano's taxonomy. The value (-1) is also allowable and indicates that the content doesn't explicitly teach this skill, but rather helps to support this standard. See the following section: **Scoring Guide**.
 - **Standard Rubric** – A text describing where in the content and why the learner will have achieved this score.

Scoring Guide

LevelUp uses Dr. Robert Marzano's scoring taxonomy of 0-4. As a technical detail, we have also introduced the score of (-1), which no user, learner, or mentor will ever see. It is only used as a database value to indicate a supporting measurement that DOESN'T fall on the 0-4 scale. The following list describes each number:

- **-1** – (Supporting) The concept has been introduced in a non-explicit way.
- **0** – Even with help, no understanding or skill demonstrated.
- **1** – With HELP, a partial knowledge of some of the simpler and complex details and processes.
- **2** – No major errors or omissions regarding the SIMPLER details and processes BUT major errors or omissions regarding the more complex ideas and processes.

- **3** – No major errors or omissions regarding any of the information and/or processes (SIMPLE OR COMPLEX) that were explicitly taught.
- **4** – In addition to exhibiting level-3 performance, in-depth inferences and applications that go BEYOND what was taught in class.

Badge Validation

Validation is the notion that a badge (*not* the reporting of a badge) can be given official approval by a governing individual or organization. One example of this might be a teacher giving official approval to a badge after having reviewed it and the content. Another example might be the Girl Scouts of America giving their approval of a badge.

Since, at any point, the provider is able to modify the badge thereby creating a new version, validation will refer to a particular version of a badge. Additionally, multiple validators may approve a single badge. The validation will be inserted into the badge as a new object in the **Validators [Array]**. The provider will not be allowed to edit this array. If the provider makes modifications to the badge, they will remove all validators for the new version. The validators will still exist for previous versions of the badge.

- **Validator ID** – The LevelUp ID of the validator.
- **Validator Date** – A timestamp.
- **Validator Name** – A text string.
- **Validator Description** – This is an optional text string that the validator may use to describe the approval of this badge.

Accumulating Badges

Progress Reporting

As the learner moves through the content, there will be a smaller version of the badge that is reported. Since the badge already exists in the system, a reference and actual score is all that is needed. Through an API call or an online form, the following progress data will be sent:

- **Badge ID** – This must match the established badge.
- **Player ID** – The LevelUp ID of the learner.
- **Badge Issued Timestamp** – The timestamp of when the badge was successfully awarded. This is the time that the learner was issued the badge, not the time when the badge was successfully submitted to LevelUp.
- **Reporting Type** – The format of reporting. This will either be Self Reported by Learner, Manually Entered by Provider, or Automatically Generated by the Content Itself.
- **Standards (Array)** – This will be a list of all the standards captured in the badge. The standards must match up perfectly with the original badge to be counted as a success in the reporting.
 - **Standard ID** – This has to match the badge.

- **Standard Score** – This will need to fall into the range defined in the badge.

Progress Approval

The reporting of progress will mean something to the learner if they are honest about their learning, but if LevelUp badges and progress are to truly be counted as official credit by governing institutions, there must be a process for progress approval. The process is not yet defined, but there will be data that captures the approval. This might be a teacher or a mentor or a parent that approves that the learner actually learned the content rather than simply figuring out how to game the system. LevelUp is building specific tools for teachers, mentors, and parents to give approval to the learning. Some of those tools will be plugins to the existing approval process within Learning Management Systems. One approach is for teachers to score the badges similar to how they might score homework for the student.

Rewards

The accumulation of badges and the sharing of badges can be a reward in itself for many learners. While there is implicit reward within badges, LevelUp allows for explicit rewards to be defined as well. There are two forms: *Awards* and *Goals*.

Awards

Awards are ultimately like badges – in that you will be able to collect them – but are very different when it comes to the underlying technology. Awards have not yet been fully specified within LevelUp, but here are some of their key aspects.

- The primary award criteria will be:
 - Gain a particular badge or a defined collection of badges.
 - Gain a particular score in a standard or a collection of scored standards.
 - Gain a particular award or set of awards.
 - Gain a particular learning goal or set of learning goals.
- Awards can be given to an individual learner or a group of learners. Content badges can only be given to an individual learner.
- Awards might be time-bound (only achieved during a certain date range).
- Awards can give points based on calculations within the criteria.
- Awards can include prizes.
- Awards can be restricted to a set of learners based on eligibility criteria.
- Companies, organizations, groups, mentors or even learners can create awards.
- Awards can have progression.

Awards fall into two types: *Achievement Awards* and *Competitive Awards*.

Achievement Awards are those awards in which the individual learner or group of learners only have themselves to compete with. The award exists for the learner(s) to accomplish whenever they satisfy the criteria, and they are not competing with anyone else for that award.

Competitive Awards are those in which a select few or only one will win. The amount and rank of winners will be defined in the criteria. These types of awards will only be given to those who win, which may result in others who will either lose or will not win the award.

Learning Goals

Learning Goals are very similar to awards but much more simplified. They are meant to serve as a guide for the learner to collect a certain set of badges or standards. Goals may be bound by date or timeframes if desired. They differ in that they are not competitive and won't have prizes. Awards can be attached to Learning Goals, however.

The Hierarchy of Badges and Rewards

The content provider, the creator of the award, or the creator of the learning goal determines hierarchy of badges. There are two distinct approaches to hierarchy: *Rank* and *Progression*.

Rank

Self-contained within each Badge is the notion of *Rank*. This notion is a linear progression from 0 to any number. This allows for the badge to have several versions of itself. Each version is defined wholly and separately from each other. For the learner, each higher number version will replace the previous version. A common example of this is a Bronze, Silver, and Gold that would equate to 0, 1, and 2 within the data spec.

Progression

Separate from rank is the structure of *Progression*. The exact details of progression are yet to be fully specified. Progression is a branching tree structure composed of nodes. The primary element of each node will either be a standard or a badge. Each node will have criteria associated with it as well (such as “*collect 5 badges of this type*” or “*you must win this award before progressing to the next node*”). There can be one or more dependencies for each node in the progression. This would require the learner to accumulate the necessary dependencies before progressing to the next node.