

## [PRESS START]

# **Gamification**

A recipe for success in 5 easy stages

With millennials rapidly taking over the work force and newer generations of tech-natives growing up in a world full of video games, augmented realities, and social media, your learners are hungry for gamification in their learning. You are no doubt already familiar with what gamification is and how it can increase motivation in your learners, but how to cook up some effective gamification in your course is something that eludes a lot of educators. Well, strap on your apron and sharpen up those knives because you are about to learn the base recipe for gamified success!

Before you continue reading, it should be clear that the following recipe is a general one and it will be up to you to make it your own. This is the roux to your gamification sauce – the pasta dough for your fettuccini carbonara. Although these 5 steps are necessary for successful gamification effects, it is how you flavour it that will make it a gourmet signature dish.



## **Knowing Your Diners**

Chef Desiree T. Lern is preparing a gourmet steak frites for her guests. She has the most tender cuts of beef she could find and her fries are seasoned to perfection. At 6:00, her guests arrive and she quickly learns that they are all vegetarians. How do you expect her Yelp reviews to turn out?



You can gamify your course from top to bottom, but if the game mechanics are not audience-appropriate they will fall short of meeting your learners needs. So how can you make sure you are designing gamification that appeals to your learners?

The answer is to conduct an analysis of your learners' **player types**. According to Richard Bartle<sup>1</sup>, there are 4 categories of gamers:



**Socializers** – These players are interested in interacting with other players and find value in these interactions. They like to show off their achievements and value teamwork when it comes to conquering challenges. These are the ones who come to the table looking for good conversation and shared experiences.



**Explorers** – These players are interested in finding all of the hidden treasures and seeing everything there is to see. They enjoy following clues to solving puzzles and will inspect every inch of new environments so as not to miss a trick. These are ones who come to the table looking to try something new.



Achievers – These players are interested in overcoming challenges and being masters of skills. They are often intrinsically motivated in the sense of accomplishment they gain by completing a task to a high standard. These are the ones who come to the table and will try to eat the 40 oz steak to get the t-shirt.



**Killers** – These players are interested in being the best even it means cutting others down along the way. They want to be on top of the leaderboard and be the last player standing in elimination tournaments. These are the ones who come to the table looking for a meal that is better than the one you are eating.



No one is just a socializer or just an explorer – everyone has a little bit of all 4 of these gamer types in them but most have one that is more prominent than the others. Identifying a learner's **player profile** involves identifying which gamer types exist in a learner in which proportions. To determine the player profiles of your learners, there are a number of online resources that can tell you what kind of gamer you are through a series of 'would you rather...' style questions.

Here are a few of them:

http://4you2learn.com/bartle/

 $\underline{\text{https://www.helloquizzy.com/tests/the-four-player-types-test}}$ 

If this type of direct analysis is not feasible, it is useful to know that in the general population, approximately 80% of players are predominately Socializers, 10% are explorers, another 10% are achievers, and less than 1% are predominately killers.<sup>2</sup> You can also make educated guesses at your learners' player profiles through other known characteristics. For example, students learning to become lawyers are likely achievers and killers. Students learning about literature and creative writing may be predominately explorers and socializers.



## **Setting your menu**

Chef Desiree T. Lern has learned from the steak frites fiasco the importance of understanding her audience. She has several guests coming tonight that require gluten free dishes and others who are lactose intolerant. How will this affect her menu and the ingredients she has to pick up?

Determining you learners' player profiles is a useless activity if you do not select your game mechanics to suit their tastes. There are certain mechanics that align better with certain player types. Here are a few commonly used mechanics and the player types they appeal to:

You may notice that there are several mechanics that appeal to more than one gamer type.

#### **Socializers**



- Discussions
- Group challenges
- Co operative competitions
- Badges
- Avatars
- Anything that affords the opportunity to interact with others

#### **Explorers**



- Badges
- Narratives
- Levels and/or divergent paths
- Open ended activities
- Avatars
- Anything that they can seek out and discover



#### Achievers

- Badges
- Points
- Levels
- Anything that helps them achieve their goal



#### **Killers**

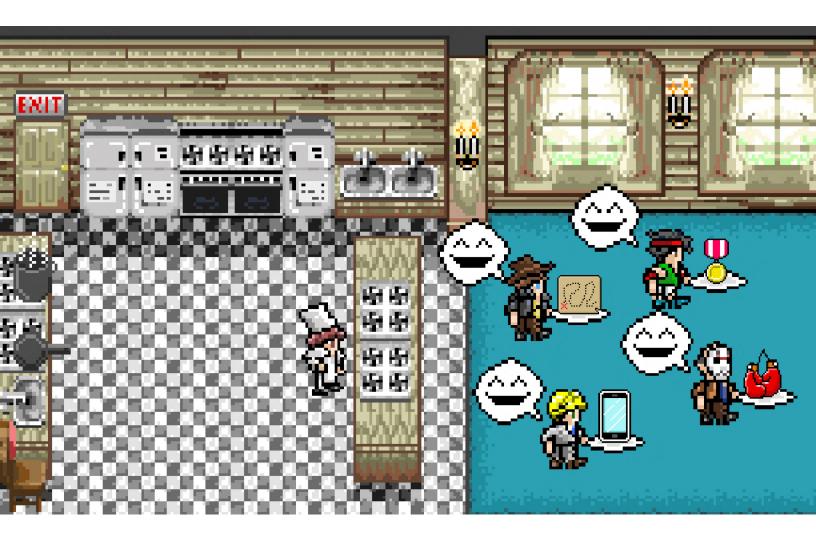
- Leaderboards
- Interpersonal competitions
- Anything that allows them to impart their will on others



## Mise-en-Place

This is Chef Desiree T. Lern's first time cooking her mother's "famous fajitas" recipe. Following the recipe step by step she has the chicken in the pan and is ready to add the peppers but must first take the time to chop them.

As she chops, the chicken is becoming overcooked and dry. How might Chef Lern have better planned her cooking?



Once you have your game mechanics selected, it is time to make your gamification plans. You must consider how these mechanics will work and how often your learners will encounter them. Let's take a look at a few popular mechanics and some of their design considerations.



## **Badges**

Badges are great! More badges are always better, right? Wrong!

Badges are indeed great, but can actually negatively impact engagement for those learners that are intrinsically motivated. These learners are already interested in the content and often see these micro-rewards as annoying or even condescending. It can also go the other way where the badges are so effective that motivation shifts to extrinsic where the learning becomes secondary to earning badges.

Badges are best used to engage learners who are extrinsically motivated and provide an extrinsic motivation for those that are not motivated at all.<sup>3</sup> However, even for these learners, bigger is not necessarily better.

Do NOT create badges for just anything and everything!



Your badges should include some that are predictable and some that are unpredictable. For example, earning a badge for completing the first 5 modules and again for the next 5 and so on can be a great motivator for learners to engage with all of the content. Knowing that another badge is waiting for them at the end of the next 5 modules is a badge schedule that is appealing to Achievers. Having one at the end of each of the 20 modules, however, may be overkill. An example of an unpredictable badge would be earning a badge for participating in a particularly important discussion or submitting to 3 selected Dropboxes. This type of badge schedule appeals to Explorers.

Finally, you must answer the question "Why should the learner care about this badge?"

#### Possible answers include:

- It will provide feedback on a learner's progress and/ or personal motivation to continue.
- It will have social value amongst the learner's peers and colleagues-they can show it off like a battle scar or medal of honour.
- It will recognize achievements otherwise overlooked by traditional assessment.
- It carries a nominal value such as bonus marks on an upcoming assessment.
- Notice how many of these can also be considered valuable to the instructor as well.

#### **Questions for creating badges:**

- What will the learners earn badges for?
   Which are predictable, which are not?
- How often will they earn badges?
   How much is too much?
- · Why should the learner care about the badges?

Notice how many of these can also be considered valuable to the instructor as well.



#### **Narrative**

Narratives can range in scope from a basic framing device for modules to short interactive case studies to full-fledged story-based learning. Considering how many complex ideas we learned from stories as kids, it's easy to see how our brains might be hard-wired to be so vulnerable to the awesome power of narratives.

You don't need to be the next J.K. Rowling or George R.R. Martin to create an engaging narrative. What you do need is a plan. You must consider what story you want to tell and how often you want learners to encounter it.

Here are a few examples of how you can plan for narratives:

- Introduce each module with a short anecdote or chapter of the story.
- Use isolated case studies to demonstrate and/or assess important points.
- Use stories as a major content delivery mechanism—the moral/theme becomes the content.
- Use a set of thematically-tied characters in examples and scenarios.
- Create branching within any of these using strategic release conditions.

#### **Questions for creating narratives:**

- What objectives are to be covered through narrative?
- How pervasive will the narrative(s) be?
- Will it be one continuous story, a series of interrelated stories, or a series of unrelated stories?
- Will they be used for assessment, content delivery, or both?
- Where in the course will the stories be housed?
- What are the settings, characters, conflicts, resolutions, etc.?



#### **Avatars**

Avatars can be used in many different ways but can be simplified to two main categories: player avatars and non-player characters (NPCs). A player avatar is a representation of the learner that provides them a third-person perspective of themselves. Different player types will find different value in them, but studies have shown that watching their avatar in a given situation from a third-person perspective is more likely to affect behavioral change in learners than traditional instruction.<sup>4</sup> D2L's Game-Based Learning Platform offers learners the opportunity to design their own avatar and use it to progress through game-based challenges.

Studies have shown that learners learn just as well from an on screen avatar or NPC as from a real live instructor. This means that if you can rustle up a few images of characters, you can pepper your course with supportive NPCs.<sup>5</sup>

#### **Questions for creating avatars:**

- Do you have the capability to allow learners to create their own avatars?
- What are the functions of the NPCs?
- Who are the avatars and how are they distinct from one another?



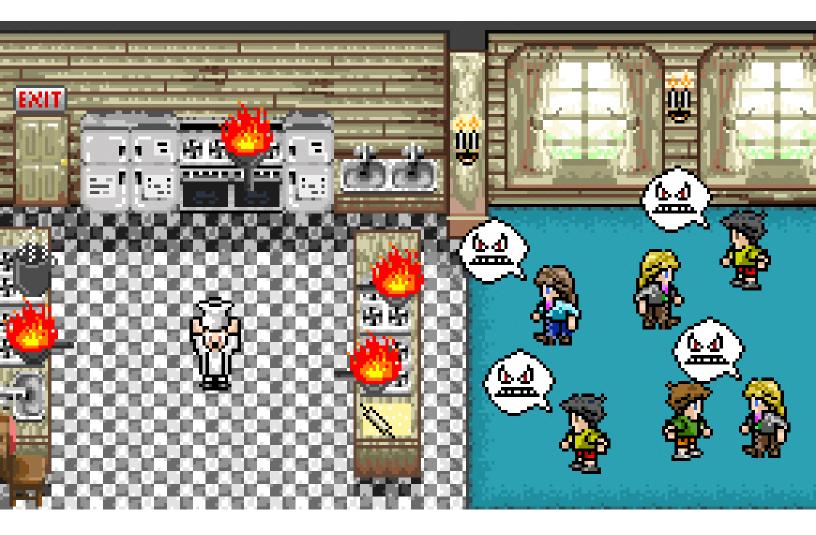
<sup>&</sup>lt;sup>4</sup>Libby, L.K., Shaeffer, E.M., Eibach, R.P., & Slemmer, J.A. (2007). Picture yourself at the polls: Visual perspective in mental imagery affects self-perception and behavior. Psychological Science, 18, 199-203.

<sup>5&</sup>quot;The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education", Karl M. Kapp (2012)



## **Cooking Up Engagement**

Chef Desiree T. Lern is making pasta for 100 people in a kitchen that is fully stocked with every piece of equipment anyone could ever need. She usually rolls the pasta by hand but that has only been for less than 10 people. Thinking that learning to use the pasta roller would take too long, she spends hours rolling and cutting pasta for increasingly impatient diners. Did Chef Lern invest her time well? How might she have been better prepared?



Now that all of your ingredients are properly prepared, it's time to heat up some pans and start cooking up some gamified content. Just as you would not put eggs in a deep fryer or bacon in a pot of boiling water, there are certain tools that are better suited to certain mechanics. Let's take another look at those three mechanics.



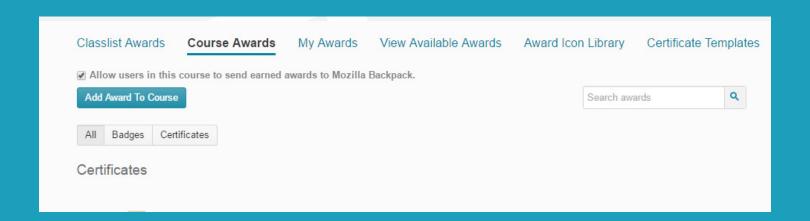
## **Badges**

The Awards Tool in the Brightspace Learning
Environment is the best tool for this job. With this,
badges can be awarded using the full list of release
conditions and/or can be awarded manually. You can use
badge icons from the built-in icon library, you can upload
your own images, or you can use the badge editor from
Mozilla® to create robust icons to order. You can also
create Adobe® PDF certificates for more formal awards.

You can use Replace Strings in your certificates to personalize them. Add form fields to your PDF and call them "{FirstName}", "{LastName}", or anything else you wish to use from the Replace Sting list in the Awards Tool Documentation.

Finally, with the right configuration variables enabled, learners can even share their badges and certificates to their Mozilla Backpack which in turn can be added to their LinkedIn™ profile. This can make the badges meaningful outside of the course which many learners will value.





However, if you plan to have your badges exist as more than a short piece of text and a pretty icon, the News Tool can be used to emulate badging. Since News Items are created using the HTML Editor, you can flavor your badges any way you wish and serve them up through any available release condition. Simply ensure your course homepage features the News Widget and your learners

will be greeted by their latest media-based badges every time they log into the course. There are, however, some technical limitations to this method regarding sharing badges, and a little more knowledge of reward structure design is needed, but is useful if you need something custom.

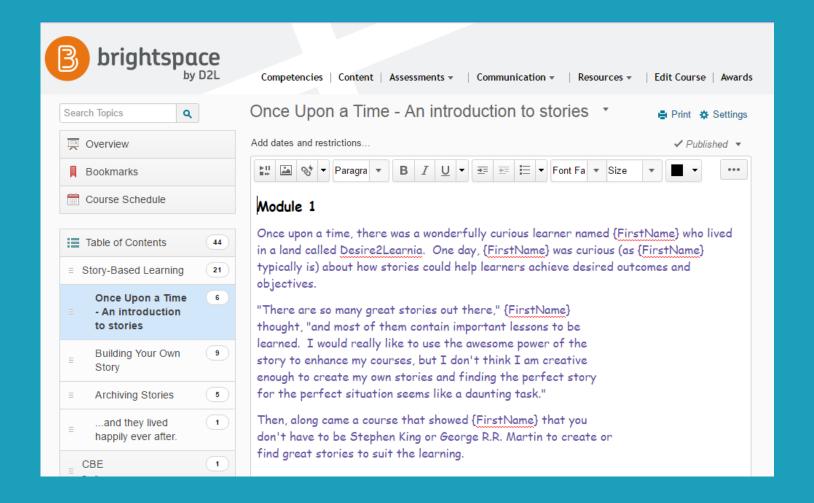


#### **Narrative**

#### Framing Device = Module Description Fields

This one often requires the least amount of effort when gamifying an existing course. Analyze the content and learning objectives within each module and tell a short story, real or fictitious, in which the character faces a problem that the content addresses. On the module's conclusion or summary page, resolve the story's conflict and/or allude to the next chapter in the story.

It makes little difference whether each module involves a different story or is a chapter in a longer continuous saga, as long as it is consistent. You may have 2 or 3 different stories that alternate or represent different units of study, but their relationship to each other (or lack thereof) should be evident, and their occurrences reasonably predictable. This is true for all narrative applications.



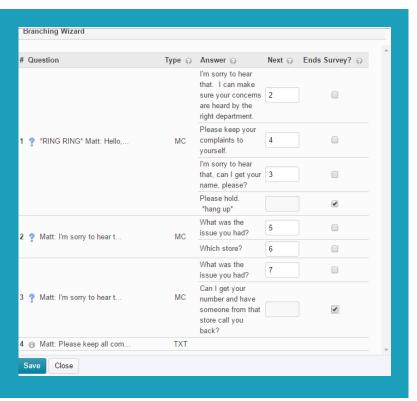
#### Case Studies and Examples = Content, Discussions, Quizzes, Self-Assessments, Surveys

Using the characters introduced in the module's description and even progressing the story throughout the module in examples and assessments can really elevate your dish. HTML content files do not use Replace Strings, but just about everything else does. The question becomes how you want your learners to engage with the story.

If you want your learners to talk about the story, its themes, messages, and resolutions, create a discussion. Further, gamify the discussion by adding one of the rating schemes and requiring learners to post first before they can see what others have said.

If you want to formally assess your learners on a case study, break the story up into chunks and put them between quiz questions in text question types. If you want the learner's response to a question to affect the outcome of the story, the Survey Tool has a built-in Branching Wizard. This allows you to determine which question on the survey is asked next based on their selection. If you do not see the Branching Wizard button, in your Survey editing screen, contact your system administrator to enable the configuration variable.

This makes for a great formative self-assessment or exploratory activity but it is not recommended for formal evaluations.



#### **Story-Based Learning = Content and much more.**

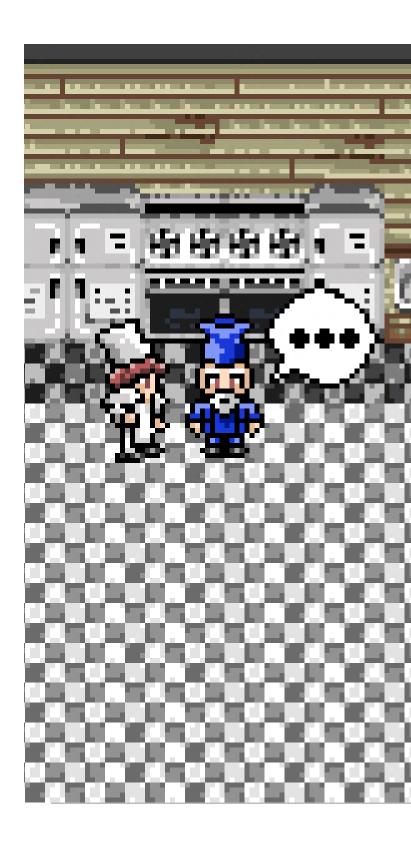
Using stories and anecdote as a content delivery mechanism is a great way to create engagement. These stories can be told using HTML content pages through text, images, embedded videos, or any combination of these.

If you want to use narrative as an augmentation to existing content, there are various other tools that can be used to deliver it to your learners. Intelligent Agents can be used to deliver snippets of a story to learners on a predetermined schedule or through release conditions. News items can be used to create the same idea but will put it on their course homepage rather than in their inbox.



## **Avatars**

Let's focus on NPC avatars from here on out. When designing these characters, you must determine which ones will serve which functions. How often will they appear? In what context will they appear? Are they instructional, motivational, or something entirely different? How are the characters related to each other? How are they distinct?





## **Seasoning and Presenting the Dish**

Chef Desiree T. Lern is cooking risotto for her dinner guests. She knows that this rice dish can be seasoned to taste any number of ways and that it can be visually unappealing if she is not careful. What might she need to know about her diners for the dish to look and taste good? What can she do maximize her diners experience?



Throughout this entire process, it is important to remember that the devil is in the details. Revisit your analysis of your learners from earlier and identify what motivates them and what they will find entertaining. Some like it salty and some like it sweet. This will help you determine who your avatars are, how your stories will be told, and what your badges look like. There is no one way to spice up your game mechanics, but here are some ideas and best practices.



#### **Badges**

Mix predictable, unpredictable, and 'quasi-predictable' badge schedules. Let's say learners earn badges for participating in Discussions. A badge for each discussion quickly becomes boring and engagement fades. Offering one badge of participating in all discussions is also not very appealing. The sweet spot is right in the middle – to maximize participation in the Discussions, learners should earn badges for 50% of them. Having a badge on every second discussion will also become predictable and boring, so be sure to stagger them to appear random.

Create "Meta Badges" and "Incremental Badges".

Meta Badges are earned for earning other badges.

For example, if there are 3 Discussion-related badges, learners could earn a Discussion Guru badge. Simply attach all the release conditions from the other 3 badges to this one. Incremental Badges are badges with levels. These can be easily done by creating a series of similarly named badges (ie. Discussion Master Level 1, Discussion Master Level 2, etc.) and compounding the release conditions on each level or by having content required to achieve Level 3 released only when they reach Level 2.

#### Badges



#### Level 1 - Newbie

Credits: 5 Award hidden until earned: false Conditions: 2

Edit Properties Example Remove Award



View Details Edit Award

#### Level 2 - Yarn Spinner



View Details Edit Award

#### Level 3 - Tale Teller



View Details Edit Award

#### Level 4 - Story Sage

Credits: 5 Award hidden until earned: false Conditions: 1

Edit Properties Exempte Award



View Details Edit Award

#### Level 5 - Ornate Orator

Credits: 5 Award hidden until earned: false Conditions: 1

Edit Properties Remove Award



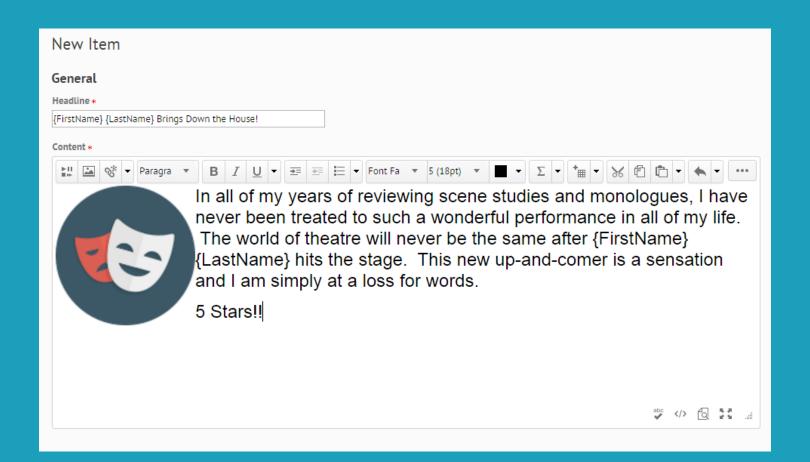
#### **Narrative**

Use narrative as a custom badge. Many audiences will enjoy watching a story unfold and will be delighted when the next chapter appears in their News items or inbox. This can be accomplished through the News tools and Intelligent Agents respectively.

You don't need to write a novel. Even a series of short related stories can be effective if you write them for your

audience. For example, learners in a Performing Arts program will be delighted to see a mock-review from a fictional critic of their performance on their video Dropbox submission.

Use Replace Strings. Instead of creating a character to be the hero or focus of the story, let your learner be the hero.





#### **Avatars**

Give each avatar a unique voice. Give each character a distinct voice, speech pattern, style, sense of humour, or lack thereof. This can be tough using only text, but you can create unique speech patterns using different sentence structures, informal punctuation, and specific vocabularies.

Not all avatars need faces. Intelligent Agents are delivered to the learner's inbox – the same place they receive real emails from real people. Why not deliver some additional support or mission objectives to their inbox from their long lost uncle Larry or a top secret government agency? If business students are required to submit a business plan, why not have them prepare it in response to an email from a potential investor?

Limit the number of recurring avatars. Recurring avatars should serve specific functions within the course. For example, one may serve as an inline course guide pointing out best practices, exceptions to rules, and interesting examples. Another may appear in each Discussion as a discussion facilitator. Yet a third may be in charge of offering hints on a test. Having a few recurring avatars can be engaging and even appeal to a learner's episodic memory but too many can become confusing. Try to keep it to between 3 and 6 recurring characters. All other characters in examples, case studies, assessments, etc. should only be temporary and appear once unless they are part of an ongoing narrative.



## **Digestif**

As with the culinary arts, gamification is a broad topic that can take years to master. There are far more game mechanics than the ones discussed here and have varying degrees of difficulty to design and develop. It takes time and even a little trial and error to create a great gamified experience, but these 5 simple steps are fundamental guidelines towards which all gamification efforts should be built. Remember, you're cooking up gamification for your learners, so cook to their tastes.

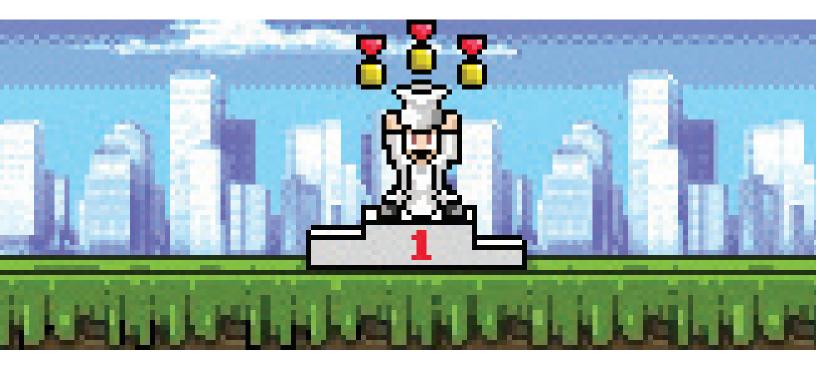






## **Leaderboard and Trophy Cases**

Chef Desiree T. Lern just returned home from the Culinary Olympics with gold medals in cake baking, chicken frying, and knife skills! What's that? You've never heard of the Culinary Olympics? Neither have any of her customers. If no one knows about her achievements, what does it matter?



Chef Lern is facing a classic problem associated with badges – who cares? There are some player types that find delight simply in the act of collecting them, and some will take great satisfaction in the achievements they represent, but for many, having a pretty little icon that no one will ever see offers no intrinsic value. This begs the question, who cares about badges and why should we bother?

The power of badging comes from the value they hold or represent. When creating badges, you need to be able to answer the question, "Why should the learner care?" Fortunately, answering this question may be easier than you think. With such a large portion of the population being Socializers<sup>1</sup>, one need only add social capital to the badges for them to hold value. In other words, giving the learners a place to display their achievements and browse the achievements of others brings social value to the badges. A tool that allows learners to view and compare badges is often referred to as a trophy case and is a game mechanic that is worth investing time in to enhance the value of your badging system.

With trophy cases in effect, suddenly, the social learners have a point of conversation to have in the discussion forums. They can share stories of how they came to earn various badges and the challenges they faced along the way. If one learner notices a badge that another learner has earned, they may inquire about what it's for and how they too may earn it. If another learner with only a few badges starts seeing his or her peers collecting dozens, that learner will have additional motivation to engage in the behaviours associated with those badges. Since the badges have been aligned with desirable behaviours targeted by the learning objectives, the social capital the trophy case brings pushes learners towards success.

However, this scenario shines light on a unique challenge characteristic of these types of comparative game mechanics. They can become more competitive than comparative – they become a leaderboard. Looking again at the distribution of Bartle's player types, only one percent of the population are primarily Killers and leaderboards are a Killer's best friend. Some studies suggest that leaderboards are only motivational for the top 10% of the leaderboard and the rest are either ambivalent towards it or are demotivated by it.<sup>2</sup> This is why leaderboards should be used with great care.

<sup>&</sup>lt;sup>1</sup> Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs, Richard Bartle (1996)

<sup>&</sup>lt;sup>2</sup> "Gamification at Work: Designing Engaging Business Software", Janaki Kumar and Mario Herger (2013)

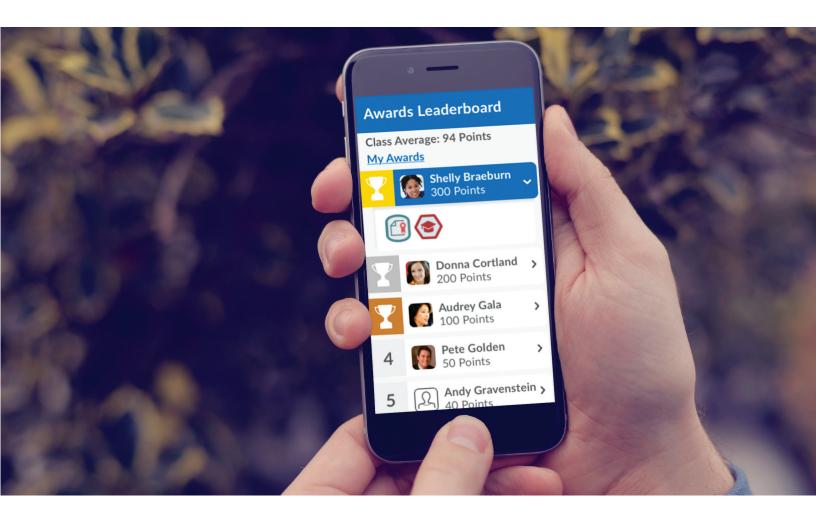
#### **Best Practices**

So, how can we leverage the motivational sides of a leaderboard or trophy case without it blowing up in our faces? The first step is downplaying the competitive aspect of accumulating badges in your communications. Rather than saying something like, "Complete this activity and you could find yourself at the top of the class," try something like, "When you've completed this activity, checkout the Trophy Case to see who else has conquered this challenge." This type of language fosters comradery and collaboration rather than competition and one-upmanship.

Secondly, design your badging system such that there is diversity in which badges can be achieved and ensuring that disparity between the number of achievements does not grow too large. In other words, make sure that no one can complete Module 3 without having earned at least three badges and not everyone should come out with the same three. This is not always easy and requires a solid understanding of badge types and schedules, divergent learning paths, and differentiated assessment. However, it ensures that the number of awards one has is never so different that someone at the bottom of the heap looks towards the top as an unattainable goal and mentally checks out of the whole experience. Luckily, the Brightspace Learning Environment has a variety of features like Release Conditions and manually awarding and revoking badges to help develop these badging systems.

Finally, allowing your leaderboards and trophy cases to rank learners on more than just one metric gives the learners the ability to say, "I may only be 45th in X, but I'm 5th in Y, and 2nd in Z," for example. This strategy mimics some of character development mechanics you might see in adventure role-playing games where the player can decide how their avatar grows. Some may choose power and strength, while others choose to focus on agility and speed. Both characters grow in very different ways and will develop different strengths, but neither is considered better than the other and both revel in their emerging roles.





## **Brightspace Leaderboard**

All of this is well and good, but how can this be implemented in the Brightspace Learning Environment? The Awards tool API helps make creating a leaderboard widget a snap! As a proof of concept, some of your good friends at D2L have put together a simple leaderboard and trophy case that allows learners to view the Awards they have unlocked as well as the Awards unlocked by others. This leaderboard ranks learners based on the number of badges and certificates they have earned. The Brightspace Awards tool and Release Conditions help make creating the complementary robust badging system a breeze.



## **Chef Lern: Olympic Champion**

Getting back to Chef Lern's problem, she would do well to put those culinary gold medals of hers on display in the restaurant. Hang them proudly in a place where everyone can see them and not only will patrons start asking what they're about, fellow chefs who come to dine will have some context regarding who is about to serve them a world-class dinner. The same methodology applies to learners displaying their academic achievements. The more visible they are, the more valuable those simple icons become.

## About D2L

D2L is the software leader that makes learning experiences better. The company's cloud-based platform, Brightspace, is easy to use, flexible, and smart. With Brightspace, organizations can personalize the experience for every learner to deliver real results. The company is a world leader in learning analytics: its platform predicts learner performance so that organizations can take action in real-time to keep learners on track. Brightspace is used by learners in higher education, K-12, and the enterprise sector, including the Fortune 1000. D2L has operations in the United States, Canada, Europe, Australia, Brazil, and Singapore.

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