gamification (both the term and the concept) has become a double-edged sword. The notion of making a game out of an educational experience, lesson, content, or activity is one that has been chased for centuries. But the idea of turning a learning activity into a game that will rival those from game companies such as Electronic Arts (EA), Rovio, and Nintendo is something that is simply not going to happen. As a result, a number of educational technology (edtech) companies either are leaning away from the gamification term entirely or are switching to other modalities that are more like adaptive scenarios than full games. Games (or even more basic simulations) are very difficult to get right and are extremely expensive to build. Even in the professional game-development world, for every successful World of Warcraft (WoW), Halo, or Angry Birds, there are tens of thousands of failed attempts. The complex mix of narrative (neither too cheesy nor too complex), appropriate challenge (neither too easy nor too hard), motivating rewards (both meaningful and intrinsic), and feedback loops is incredibly troublesome and costly to package into a whole experience.
Trying to align learning outcomes with a narrative runs the very real risk of producing what has been termed “chocolate-covered broccoli.” There are, of course, educational games that have stood the test of time. The Oregon Trail was designed to teach about the realities of 19th-century pioneer life. The player assumes the role of a wagon leader guiding a party of settlers, in 1848, from Independence, Missouri, to Oregon’s Willamette Valley in a covered wagon. Created in 1971, it is one shining example—from forty-seven years ago. Making learning into a game is difficult.

Instead, I prefer (and teach) the concept of gameful design. The distinction is subtle but important. Whereas gamification equates to making a game of an activity, gameful design looks at the various aspects and intrinsic motivators that are embedded in successful games (and in other nongame events) and asks whether those elements can be replicated and woven into classroom and online activities. The goal is to move toward flow—to the point where engagement becomes seamless and (even) compulsive, rather than dreaded and/or labored. Gameful design thus looks at the elements that make games, or other forms of engagement, intriguing and then applies those principles to educational experiences. In this way, and by defining intrinsic motivation or motivators in terms that many educators recognize and already try to incorporate, gameful design reflects and builds on things that good instructors do as second nature. In good learning experiences (as in good sports or good hobbies), participants are challenged, are provided with prompt and supportive feedback, are supported to reduce their fear of failure, and are encouraged through cooperation and/or teamwork. These are all gameful design principles.

In a semiregular online class, I teach these principles to academics, practitioners, and “pracademics” (the combination term for career academics who are also active practitioners in their subject). My class is aimed at people who have picked up the role of supporting their colleagues in basic edtech logistics and who, in the continual quest to find new ideas and means of motivating and engaging students, want to hear more about and experiment with gamification. During the course, we typically end up spending a lot of time on definitions. Some class participants want to make real games, whereas others “get it” when I try to gently redirect their attention to gameful design—which, in my mind, has a better chance of actually influencing teaching and learning. The conversation in class frequently reminds me of the dialogue in Monty Python’s Life of Brian: “Judean People’s Front? Nah. People’s Front of Judeal!” But the distinctions here do merit attention. They represent the difference between the unachievable and the potentially significant applications of current and emerging technologies.

My course participants run the gamut from tech-challenged (or even tech-phobic) to geek-savvy or “nerd-ish and proud.” Most are women and claim to not be gamers or even competitive at all. Interestingly, it seems that the nongamer/noncompetitive participants are the ones who jump to the most immediate gamification (“make a game of it”) solutions. The danger with this jump is that it gets us immediately to the place where a growing majority of career academics and educators tune out of the discussion. If academics and administrators are looking to gamify courses that will compete for the attention of the fickle hearts and minds of trend-chasing customers, they are looking at serious funding and development time. The development of Blizzard Entertainment’s late 2004 hit World of Warcraft (WoW) required an estimated $63 million and approximately four to five years. Just over two years later, in January 2007, WoW was apparently in need of refreshing, as evidenced by the launch of The Burning Crusade, the first expansion of the game. This suggests that the shelf life of your average (multimillion-dollar) game is around two to three years. Added to that, in 2009 EA Chief Creative Director Rich Hilleman noted that his company “now typically spends two or three times as much on marketing and advertising as it does on developing a game.”

Can’t you just imagine if the following email were sent from an instructor?

Dear University Administrator,

I teach Social Science 101 at our institution and am interested in trying to better reach my students, with an eye on increased engagement and, possibly, better outcomes. I am going to make a game out of my class and will need approximately $20–$30 million per year (ongoing) for the development and maintenance of this project. I believe that I will demonstrate efficacy to the extent that many of my colleagues will likely want to learn from and copy my efforts. You might therefore want to give the CFO a heads-up that we will need to sell off a campus or two.

Yours truly, Instructor A
Good luck with that.

Still, I don’t believe we should give up on the idea behind gamification—that is, on the desire to engage students. Students who are ridiculously engaged in certain elements of their personal world, who spend nearly every available minute checking in on platforms that motivate them, are close to being completely disengaged in the academic milieu. Adding to the challenge is the fact that as we work to increase access to, and support the right of, an education to a wider tranche of society, we are supporting rising numbers of students from backgrounds with significant risk factors. The higher education student body at large is increasingly composed of students combining multiple risk factors—such as low socioeconomic status or first-in-family—that could categorize them as “fragile.” These challenges are significant; the 2017 ACT report STEM Education in the U.S. showed that “on average, first-generation college students who are from a racial/ethnic minority group and a low-income family are sixteen times less likely to be ready for credit-bearing STEM coursework in college than the group of students who are not considered underserved.”

From a motivational perspective, students from these demographic and life situations frequently have one strong reason to study: the resolute and genuine attempt to better themselves. But even that is set against multiple, extremely stressful disincentives and reasons they feel they might be better stepping away. These disincentives can include trying to hold down multiple jobs, having a family to care for, and even experiencing peer pressure not to persist.

The nature of the changing student body, students’ fear of missing out (FOMO), social media, and the pressing need to “beat my classmate’s new Rider best score” combine to present an engagement challenge that faculty have not been trained to cope with. They often don’t have the tools to even try. We are asking our colleagues to address these issues with minimal extra resources and support. The vast majority of faculty are already wearied by a lot of heavy lifting, having added instructional design, technical troubleshooting, (complex) materials development, and student support more akin to social work to their load. They are now being asked to step up even further to retain increasing numbers and proportions of at-risk students. Not surprisingly, they are scrambling to locate the means to motivate and engage students (particularly in early-entry or intro-level classes). Instructors realize that they most likely have just one shot to engage these new students in this new world. Fragile learners who lack confidence and whose self-doubt is exacerbated by failure will almost certainly not loop back round for another try.

If Gee’s talk of “better theories of learning” sounds reasonable but a tad dry, take a walk with me down Memory Lane. Assuming you’re of a certain age, think back to the 1970s–1980s video arcades and the first home console games such as Pong and Breakout. They were fun, despite pixelated graphics and limited interactivity. They were fun because they were well thought out and involved motivators to engage, dopamine-generating hooks and triggers, competition, challenges, narrative, sense of progress, and user-centricity (before we ever appended that suffix to our students). The premise of something like Space Invaders was immediately graspable, the controls were usable after milliseconds of thought, the feedback was instant and unambiguous, and the reward—“You Saved the Earth!”—was tangible. Players experienced both collaboration and competition (through the leaderboard) while they also needed to concentrate. The Space Invaders game was—and this statement is not as redundant as it sounds—gamefully designed. Basic human motivators, competition, challenge, narrative, and reduced fear of failure combined to wonderful effect.

Many of the elements or hooks that made Space Invaders addictive have been apparent not only in good games but also in good sports, good books, and good movies since time immemorial. Back in 1978, the developers of Space Invaders saw how the integration of these tenets of engagement...
could entice all users—young and old, male and female, all ethnicities across the globe, from privileged and penurious backgrounds. Yet forty years later, our engagement with academic users remains woeful. We expect them to self-motivate, and we provide them with very limited (or even no) feedback. Furthermore, we set up minimal human social interactions; we don’t leverage competition, collaboration, or cooperation; and we provide next-to-no clear sense of progression or framing narrative. What about “fun”? Well, that just couldn’t possibly help, could it?

Beginning in about 2004–2006, social media became an omnipresent part of students’ lives. Today games—both complex (Assassin’s Creed, Halo) and ridiculously simple (Flappy Bird, Rider)—are still influential, but gamefully designed apps like Snapchat, Facebook, and Instagram play a much bigger role. Millennials (1981–1996) and Post-Millennials (1997–present) play mobile games much less than Gen Xers (1965–1980) do or did. Post-Millennials “over-index” (i.e., do significantly more than other age groups) in sports, health and fitness, music, media, entertainment, lifestyle, and shopping. They interact disproportionately, and significantly more, with apps and media that have gameful elements built beneath a nongame interface. To put it another way, they are intrinsically motivated to engage with systems that are intentionally designed to be hard to not engage with—systems in which engagement provides numerous feel-good rewards along with the sense of being part of something bigger, connected, informed, challenged, and empowered and in which users can create their own narrative for immediate feedback and positive reinforcement. Sounds just like the LMS and related platforms at our higher education institutions, right?

Educators need to become more psychological and analytical to see if they can engender a picture of engagement from a more limited palette. In some ways, it may be a blessing to not have substantial multimedia budgets. When big budgets are blown on complex and interactive “educational games,” typically the games are not very educational and, honestly, not even much fun. This is where we can jump into the crossover world of game principles being applied to education and pedagogy (aka gameful design). This may also be the opportunity to achieve empathy through shared experience—or shared experience via decontextualized or recontextualized teaching and learning. It remains a challenge, as it has always been, for older educators to get through to or to connect with younger, culturally shifted students by finding shared experience or even shared context.

Again, Gee was one of the pioneers here. He aligned specific aspects of teaching and learning with key features of successful video games. In addition, he recognized that these aspects or elements might well be applied to help engage those learners who were referred to as fragile learners (particularly first-generation students). He referenced three elements that were addressed by game designers and from which he felt educators could learn. They seem somewhat obvious, but they provide a solid initial framework when contemplating next steps:

1. The learner must be enticed to try, even if he or she already has good grounds to be afraid to try.
2. The learner must be enticed to put in lots of effort even if he or she begins with little motivation to do so.
3. The learner must achieve some meaningful success when he or she has expended this effort.

The working theory is that some barriers for learning might be surmountable if students can reach a state of engagement—that is, can become hooked and committed, possibly with some additional elements to the learning experience, at least until they reach a level of sophistication at which the subject matter itself becomes motivating. For modern-day students, particularly those penalized by the absence of intrinsic motivators that come through birth or good fortune, the need to be encouraged and supported is accentuated. Gameful design offers the possibility of meaningfully endorsing and strengthening their commitment, which might just get them over the initial “fragile” hump and to a place where they feel they belong and where they have a fair chance at persistence and, ultimately, success.

Gameful design provides a means of creating a dialogue in academic terms that colleagues will support. It is not an on/off switch. In my gameful design course, I present my students with the rubric in table 1 and encourage them to select two to four intrinsic...
Any implementation of technology, cutting-edge or not, should be questioned against which intrinsic motivators it impacts and how.

There are no simple right answers in gameful design, but the flip side is that there are no truly wrong answers either. Millenial/Post-Millenial students tend to deeply appreciate and be supportive of any efforts to meet and engage them. I encourage low-tech-first iterations so that feedback can be gleaned and tweaks made prior to any technical build. Even a focus on aesthetics, shown by making materials more visually appealing with better graphics and/or a better LMS adaptive release feature) can provide with a degree of personalization, while the C's (Conflict, Competition, Cooperation) can be dealt with creatively. For the C's, I like the “dependent hero contingency” tactic (aka the Harry Potter protocol), in which teams compete while individuals feel peer encouragement and collaboration without the weight of the world on any one person’s shoulders.

motivators that interest them and to play with those in their course design. For example, narrative is certainly an important motivator and one that I have seen used to great effect in creating sustained, term-long interest, but no one should be forced to go with it. If you don’t play Dungeons & Dragons (and I didn’t), then don’t use narrative. My students often focus on means of expediting the immediate and continual feedback that adaptive learning (and even versions of it in the LMS adaptive release feature) can provide with a degree of personalization, while the C’s (Conflict, Competition, Cooperation) can be dealt with creatively. For the C’s, I like the “dependent hero contingency” tactic (aka The Harry Potter protocol), in which teams compete while individuals feel peer encouragement and collaboration without the weight of the world on any one person’s shoulders.

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