Examining Failure through Digital Games

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Games like *Pong, Pacman, Space Invaders* and *Galaxian* filled the TV screens and arcades of my childhood. With each new arrival, I would pick up the game controller and try my skills on each challenge. Inevitably, I would quickly fail at even the most basic level, rarely progressing far in the game-world before giving up. So, while many of my friends became obsessed with video games, I found other hobbies to fill my time. Any time that I decided to try the next generation of digital games, I was quickly defeated. Even as my own children developed a borderline addictive relationship with games, I found it difficult to see the appeal. When curiosity compelled me to take a gamble and enroll in ED 6927:Digital Game Based Learning, I was forced to revisit my uneasy and ignored relationship with video games. Certainly, my first time playing *Call of Duty* with my son, brought back all of my suppressed negative feelings. I actually felt helpless to do anything about my failure, and almost immediately wanted to give up. The experience was no different with games such as *MarioKart*, where, despite my spotless driving record of 30 years, I could barely keep a virtual kart on the roadway.

This feeling of helplessness has been a subject of study for decades. An early experiment by Martin Seligman referred to this as "learned helplessness" (Seligman, 1972, p. 408). His study with dogs would be considered horrific by many people today. Dogs were placed in boxes with a metallic floors wired to deliver an electric shock to the dogs. In group 1, the dogs had access to a lever that they could use to turn off the shock, which they quickly learned to use. Dogs in group 2 were not so lucky and had no way to stop the electrocution. They could only suffer through the experience. This however was not the most revealing aspect of the experiment. Next, the researchers again, placed the dogs in boxes wired to deliver shocks, but this time with a low wall dividing the box in half. When the shock was delivered, the dogs in group 1 quickly discovered that by hopping over the low wall they could seek refuge in a shock-free zone. But, the dogs in group 2 made no attempt to escape. Even though they *could* escape the pain, they simply curled up and suffered as an avoidable shock was delivered.

The term "learned helplessness", has since been applied to education, employment performance, sports, and yes games. Walling (1995) writes,

> One of the main causes of learned helplessness is repeated failure in numerous achievement situations. For many children, the school setting has been a prime 'breeding ground' for failure experiences. When children continually experience failure, they come to believe that nothing they do can change future outcomes (p. 454).

This was certainly my experience with digital games, made even worse by the fact that I generally consider myself a tech-savvy teacher—even an innovator. After all, I have flipped my classroom, embraced outcome-based assessment, inquiry and project based learning empowered by technology. Bourgonjon et al. (2011) would expect digital games to be part of my technology repertoire; and yet, my personal struggles with digital games prevented me from giving them fair consideration. My experience with failure was clearly impacting my choices. I immediately wondered how many students felt the same way I did. After years in the system of education, what impact was failure having on their decision-making? In my 25 years as a science and math teacher, I have seen many students give up on tasks when

they believe something is too difficult. Some arrive in my classroom with existing defeatist attitudes about science and math. Why then, did other students stubbornly persist despite difficulty?

Here, again Seligman's (1972) ethically questionable experiments offer some insight. He identifies three dimensions along which we tend to identify the reasons for our failures:

- Internal versus External – tendency to blame self vs. some external condition
- Stable versus Unstable – tendency to assume the failure is on-going vs. temporary
- Global versus Specific – tendency to assume failure is pervasive vs situational

In a human study—this time as part of a research team with Metalsky et al. (1982)—Seligman considered how "college students' attributional styles at one point in time, predicted the severity of their depressive mood response to receiving a low grade on a midterm exam at a subsequent point in time" (p. 612). Their findings suggested that "people who display a generalized tendency to attribute negative outcomes to internal, stable, or global factors [are] more likely to experience a depressive mood reaction than people who typically attribute negative outcomes to external, unstable, or specific factors (p. 612). In my experience playing video games requiring good hand-eye coordination, there was no real danger of me slipping into a deep depression, but I certainly had negative feelings. As I consider my experience during my foray into *Call of Duty*, I recognize my tendency to internalize my failures and apply my struggles in one area (competitive sports for example) to all areas involving competition and quick reflexes. In addition, I wondered how much of my earlier failures at *Asteroids* or *Pong* had become part of my psyche, ultimately creating a stable view of persisting failure. With game controller in hand, I found it difficult to believe the research that suggests games may ultimately hold the key to understanding student engagement in classroom environments. After all, I would rather do almost anything else than play a digital game.

The evidence supporting the value of digital games is particularly clear in language learning. "Computer games appear to come with certain environments, characteristics and design features that provide a low stress atmosphere, helping learners feel relaxed, confident, and motivated" (Reinders & Wattana, 2015, p. 39). Further to this, Connoly et al (2012) write, "Games-based Learning (GBL) has developed a reputation with educationalists. It is perceived as a potentially engaging form of supplementary learning that could enhance the educational process and has been used at all levels of education including primary, secondary and tertiary education. (p. 202). But, clearly my experience playing games suggests there is more to this puzzle. Games in and of themselves are not the key to unlocking our learning potential. Witton (2001) suggests, "using a game 'because it is a game' or using game-based learning to make something less boring may not work for adult learners in a Higher Education context, but it may be possible to transfer elements of game design that are motivational to more generic educational contexts" (p. 265). Young et al. (2012) also suggest:

> Although it is generally accepted that computer games are engaging for many people, what is engaging to some people will not necessarily be engaging to others. Individual differences in learning style and personality traits such as competitiveness, curiosity, or sensation seeking may be predictive of preferences for game-playing environment, hence be predictive of learning effectiveness of certain game applications (p. 9).

According to Squire (2008), "different 'hooks' work with different players, including a desire to explore, to build, to maximize the game rules, to nurture…to transgress the rules…or play in antisocial ways" (p. 180). This was certainly reassuring and suggests that some different game titles might offer me a more

enjoyable gaming experience. Avnet and Higgens (2006) refer to this as a "regulatory fit state" and suggest, "When there is a fit, people engage more strongly in and "feel right" about what they are doing" (p. 1). This made me wonder. How can I encourage a regulatory fit state for my students? Are there some common trends related to engagement, game design, and enjoyment that could impact my practice as an educator?

> The work of Csikszentmihalyi (2005) offers some insight:
> Within the broad range of ordered experience, optimal experience may be defined in terms of two dimensions: what there is to do and what one is capable of doing. Thus optimal experience—or flow; as we came to call it using some of the respondents' own terminology—is differentiated from states of boredom, in which there is less to do than what one is capable of, and from anxiety, which occurs when things to do are more than one can cope with (p. 212).ddd

Most classrooms do not provide the students with opportunities to operate in the flow channel. Instead it is common for students to place classes, "off the diagonal; ''hard'' subjects like math and sciences typically in the region of anxiety, while humanities and social science classes often fall in the area of boredom (Csikszentmihalyi, 2005, p. 212). Essentially, this translates into our classrooms with the effect that when opportunities or challenges overwhelm the learner's capabilities, the resulting stress causes anxiety and worry. In contrast, "when skills are greater than opportunities for using them, the state of boredom results, which again fades into

anxiety when the ratio becomes too large" (Csikszentmihalyi, 2005, p. 212).

In many ways game design considers this fine balance between challenge and skill. It seems counterintuitive that designers would desire to create something that would cause players to fail. After all, winning makes us happy. But, this is indeed a necessary element of any good game. In a way, it is the struggle and possibility of failure that ultimately makes a game worth playing. Game designer Sid Meier adds, "A great game is a series of interesting and meaningful choices made by the player in pursuit of a clear and compelling goal" (as cited in Rouse, 2005, p. 81). In the game environment, we are doing things rather than being told what to do. We are active participants with choices rather than passive observers and this transports us from the realm of movie or toy to the immersive experience of choice-driven game play. When the fine balance between skill and challenge is achieved then, the learner is less likely to experience failure as an entirely negative experience. Jabbar (2015) reviewed elements that produce enjoyment and motivation in gameplay and states,

> This was demonstrated by players acting as enthusiastic, confident, and strategic learners to access and understand content and to achieve their goals, triggered and supported by multiple elements. Most critically, in the GBL context, engagement is related to students' cognitive and emotional involvement in the gameplay…There is a thin line between the ability, motivation, and enjoyment that encourage students to go beyond the requirements to meet extended goals. (p. 767)

In consideration of this fact, I am compelled to reconsider my experience with games like *Call of Duty, MarioKart and Pacman.* Perhaps, I was too quick to give up. Perhaps something more was waiting just beyond the next turn.

Noah Felstein suggests that as humans we are driven by a natural predisposition to seek out fun experiences. He refers to this as "funativity" (Rouse, 2005, p. 71). Johan Huizinga identifies *Homo Ludens* (Game-Playing Humans) suggesting that play is instinctual and the result of our larger brains and complex social structures. He suggests, that when we consider all forms of human entertainment, "at its heart it is about learning about survival and reproduction and the necessary associated social rules and behaviors" (as cited in Falstein, n.d.). Rouse (2005) elaborates, describing the different elements of a fun experience (physical, social and mental) in both "real-world" and digital realms. It is rare for any form of entertainment to be purely in one category of fun. Whether it is shopping, hunting, dancing, playing sports or a video game, aspects of physical, social and mental fun find their place. Clearly there are parallels to educational pedagogy. If we truly do have a natural penchant for fun, then it begs the question, "Are there elements of experiences that *everyone* will agree are actually fun?" The average classroom certainly pales in comparison to the average game on most people's funativity index. In fact, some would argue as Oxarart et al. (2014) have that "our current system is de-motivating because we tell our kids that they all 'start with an A' but then with each successive failure or poor grade, they move further and further away from that 'A'. Soon, they are far enough away to not care anymore" (p. 349). Further to this the authors state, "Our current education system is in a downward spiral towards failure. The format of schools is breeding disengagement, cheating, learned helpless and dropping out. Students do not see education as entertaining, engaging or motivating" (Oxarart, 2014, p. 349). For many, digital gaming stands in stark contrast to their experience in the classroom. This has led some to suggest that we raid games for those engaging elements and to export them to nongame applications. Ferrara (2013) advises caution, suggesting that "we should build things that are games first and then utilize the prodigious strengths native to the medium" (p. 303). According to him, games can solve real problems and can be created to persuade people to adopt a particular point of view or to take some action in the real world. Further to this he suggests that, "Games are actually the ideal way to do this" (Ferrara, 2013, p. 303). I would suggest that this would also require the *right* game for the learner. This considers the fact that everyone's regulatory fit or flow state is uniquely their own. As Cantalo (2014) suggests, "emotional tension helped by the accurate realism keeps high the level of engagement and makes the game stressful and successful" (p.7).

Effective learning—just like good game design—must consider: emotional and cognitive balance; challenge and skill level; and the learner's natural tendencies for attributing failure to any number of factors, all while relating this to the learner/player level of frustration, anxiety, boredom and engagement. So, I return once again to reconsider my realm of experiences and the way that it has shaped my decision-making as science and math educator. I am reassured that my current practice is serving the learner well. My classroom practice reinforces on-going learning. Unlike many classrooms there is no downward spiral of failure. Instead, student have limitless opportunities to master individual learning outcomes. Instead of formal tests, students are permitted to demonstrate their competency in any number of ways. In fact, by utilizing technology to flip my classroom and create opportunities for asynchronous learning I have moved into the realm of game play where the designer's goal is "matching of the game challenge with the player's skill and ability as an ongoing dynamic process that aim to continually adjust the game play mechanics in response to a player's actions" (Thin et al., 2011, p. 416). As an educator one of my ultimate goals is balancing skill and challenge to optimize student performance. I regularly adapt my instruction and assessment in order to achieve this. Oxarart (2014) suggests that failure does not have to be traumatic. Instead, it can be an opportunity to learn something new, while avoiding our tendency to yield to learned helplessness. Brandt (2004) goes as far to suggest that, "Only through failure—through the painful acknowledgment that this time we weren't swift, strong or smart enough—do we learn who we are, what we believe, and what we can become" (p.23).

So upon further reflection, it might be necessary to revisit some of the digital game worlds that I have so quickly dismissed. After all, I often find myself trying to encourage students to attempt things that they are not inherently good at; and sometime I teach them stuff that is of no personal interest, simply because I think it is important. Despite the fact that there is a lot to be said for operating within our strengths, there may still be more to learn from the type of games that cause us to fail. Perhaps, I will take Koster's (2004) advice as he suggests:

(1) Since different brains have different strengths and weaknesses, different people will have different ideal games.
(2) People will usually choose to play the games they are already good at, that reflect their strengths.
(3) Arguably, they should seek out the games that address their weaknesses instead.

Perhaps for my next mission, I will take on *Halo 3*.

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