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HOW IS GAMIFICATION LIKE BEING TRAPPED IN THE MATRIX? AND WHAT IS THE 'REAL-WORLD' OF GAME-BASED LEARNING?

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Abstract: *As the title suggests, this paper compares the underlying assumptions, theory, and practice of gamification and game-based learning through the lens of pop-cultural references, specifically: the Matrix movie series. Thus, and in keeping with the theme of the movies, we hope to "redpill" readers into thinking more deliberately about their pedagogical approaches. We start by defining terms: the Matrix, the real-world, gamification and game-based learning. The paper then explores the various layers of power and control that both students and teachers find themselves operating within, referring to the Matrix movies where appropriate. We argue that gamification is an unnecessary layer of control that should be abolished in favor of more humanistic, transformative, and critical pedagogical practices, of which game-based learning may be one way of instantiating such change. However, we also argue that awareness of various pedagogical theories, as well as their potential benefits and harms is not enough to bring about meaningful change. Much like the Matrix movies, it is up to the reader to enact change through their actions. The paper ends with an invitation to consider how pedagogy, educational institutions, and capitalist society act as a matryoshka model of control or "simulation" which, through play, we may break free from. In sum: don't trick. Be ludic.*

Keywords: *gamification, game-based learning, ludic, pedagogy, Matrix*

Introduction

This paper is a formal, written report and continued exploration of a recent informal discussion between the Pedagodzilla hosts and two guest educators, on the topic of gamification and game-based learning (GBL) and their relationship/connection to the movie franchise "The Matrix" (Collins, 2022). The audio recording of the discussion is provided as a supplement to this paper (Appendix 1), where both parts make up the overall whole of 1) the authors' thoughts about gamification and GBL and 2) our deeper thoughts and critiques on the subject of games, gamification, and pedagogy.

This paper mirrors the path that Neo takes in the Matrix movies by taking the reader on a journey of discovery, struggle, choice, and a call for action. Neo's path was not an easy one; your journey of reading this paper might not be either. Just know that we're an email or video chat away and eager to hear how you discover, struggle, and choose to act after reading our thoughts here.

Defining terms and concepts

In this section we provide detailed definitions for all terms pertinent to answering the title question.

What do we mean by "The Matrix?"

"The Matrix" is used to refer to 1) the title of a movie and movie franchise created by the Wachowski sisters, and 2) a machine which features within that movie franchise which was designed by artificial intelligences to keep humans perpetually stimulated by a simulated virtual reality. In this paper, we will be referring to The Matrix mostly as the latter, but to do that, we will give a brief synopsis of the first movie in the series, simply titled: "The Matrix.[1]"

The Matrix (movie)

The Matrix franchise centers around the actions of a character known as Thomas Anderson, or as he is also known by his hacker tag, "Neo." The first movie starts with Neo trying to locate another person renowned in hacker circles: Morpheus. Upon being introduced by a third party known as the hacker "Trinity," Neo is given a choice by Morpheus to take a blue or red pill. Taking the blue pill will result in Neo waking up in bed with no further information, taking the red pill will result in Neo learning "the truth." Neo takes the red pill where the truth is revealed to be that he, and the majority of humans on earth, exist in liquid-filled, womb-like pods, plugged into a simulated reality created by robots to keep humans content, and more importantly void of physical activity, so that their bioelectric energy can be easily harvested for use by the robots that now rule the planet. This simulated reality and the machine which generates the reality is known as the Matrix.

Coming out of the Matrix and into the real-world, Neo finds himself surrounded by other people that have been pulled out including Morpheus and Trinity. This small group of humans (or "redpills" as they are known in the lore) who exist outside of the Matrix's simulation and are in constant war with the robots that now rule the earth. However, Morpheus believes in a prophecy wherein an individual redpill known as "the One" is eventually evacuated from the Matrix with the power to defy the rules of the simulation, ending the war and freeing humankind. Neo wrestles with the weight of prophecy, the freedom of mind from body, and murderous machine controlled 'agents' to overcome death, see through the artifice of the matrix and ultimately, change it. The movie ends with Neo flying through the sky in the simulated world promising the robots that he

[1] The full line up of movies in the franchise are: The Matrix (1999), The Matrix: Reloaded (2003), The Matrix: Revolutions (2003), and The Matrix: Resurrection (2021).

will show the captured humans "a world without rules and controls, without borders or boundaries. A world where anything is possible."

The Matrix (machine and constructed reality)

Now that we have outlined the Matrix *movie*, we turn our attention back to the Matrix *machine*. As explained above, the Matrix is a machine designed by robots, the current rulers of the barren earth. The machine exists to control humans by slavery, sapping them of bioenergy to power the robots. Additionally, and as summarized succinctly by Morpheus in the movie:

> "What is The Matrix? Control. The Matrix is a computer-generated dream world, built to keep us under control in order to change a human being into this [holding up a battery]."

Whilst in the Matrix, then, humans are unaware that they are being used in this way, a concept which does not originate with the Matrix movie franchise, but relates to the *brain in a vat* philosophical thought experiment (Harman, 2015). The proposal is that a human's brain is somehow removed from the body and suspended in a vat (or jar) whilst being connected to a computer system which provides the same electronic impulses it would receive if it was still inside a skull. The computer is thus feeding the brain a simulated version of reality which is indistinguishable from reality. One question which arises from this is: if such were possible, would we want to know whether we were in a simulated reality or not? Another is: how do we know that we *aren't* just brains in vats?

Representation of reality: the "real-world"

As outlined above, the movie takes place in a post-apocalyptic or dystopian setting where humanity lost a war with robots and are now unknowingly enslaved to serve their needs. The real-world is thus depicted as being harsh and severe, whereas the simulated world is comfy and familiar.

Now that we have introduced the pop cultural element of our roleplay/metaphor/thought-experiment, in the next section we turn our attention to the pedagogical side of the spoon[2].

Pedagogical concept 1: gamification

Gamification is generally described as "the use of game design elements in non-game contexts" (Deterding et al., 2011, p.10). Which begs the question: **what are game mechanics**? They are the rules which discern how a player will interact with a game. It is worth noting here however, that although game mechanics may be broad in scope, only a limited subset are frequently used in gamified contexts; those being the *reward* mechanics of games (Plass et al., 2020). Nicholson (2015) provides the acronym "BLAP" to refer to the game mechanics most often utilized by gamifiers: Badges, Levels and Leaderboards, Achievements, and Points.

The follow up question to the definition of gamification above is: **what non-game contexts are being gamified?** For the purpose of this paper, we are focused on educational contexts: schools, libraries, museums and stand-alone apps, but gamification has its roots in marketing and user-engagement where rewards are utilized to maximize profit through behavior manipulation and coercion (i.e., control) of customers (Rey, 2014). The concept is simple:

1. What behavior do I want customers to perform?
2. Consider a suitable reward or incentive to push customers to perform that behavior.

[2] Remember: "There is no spoon."

3. Implement the reward and see if it works.
    a. Yes → Excellent, leave that incentive in place.
    b. No → Go back to step 2.
4. Profit.

Concrete examples of gamification which promote customer brand loyalty are frequent flier miles, store point cards, or other brand loyalty cards. However, there are examples which are not linked directly to profits but the changing of a person's behavior for environmental or other personal reasons such as improved health (McGonigal, 2011). These include: the Toyota Prius dashboard (a visualization of how "ecological" one is driving) and the Nike+ run phone app which promotes users to run more through competition with other users.

Based on the above description, we may consider gamification strategies the quantification and visualization of certain metrics, which are beneficial in helping us to set goals, keep us on track, and measure our progress towards those goals. Quantified data can give us feedback to let us know if we are doing well, or not. One issue, however, is whether the user/participants has opted into being monitored. As Collins mentions in the podcast, although achievements for exploration may exist in videogames, there is no overt pressure on the player to do so. Without consent, then, gamifying users' progress such as in classrooms, may be considered a type of surveillance rather than a fun game (Manolev, et al., 2019; Stockman & Nottingham).

Gamification in educational contexts

Structural gamification may be considered the application of BLAP in taught contexts. As explained by Healey (Macmillan Education ELT, 2020), the integration of gamification may be merely "how you call things that starts to change attitudes from 'class' to 'new learning world.'" Thus, Table 1 shows how gaming terminology may be mapped to preexisting terms in education to create a gamified teaching context.

Table 1: An example of how gaming terminology can be used to replace typical educational terms

Educational practice/term	**Game related terminology**
Grades	Experience points/Levels
Group work	Party/Team
Activity/unit	Quest/Mission/Level
Test	Boss fight

A rationale for the use of structural gamification is its link to habit formation and is a particularly strong avenue of exploration in the research on health and wellbeing (Johnson et al., 2016). The concept is that using rewards, a user or student may be encouraged to engage in a task or action on a regular basis, and thus eventual acquisition of course content as predefined by the instructor. In a gamified context then, the activities which students complete and the way the class is conducted remains largely unchanged, the focus is on terminology, behavior control, rewards, and assessment. A meta-analysis of 46 gamification studies showed that BLAP elements were the most common employed (Zainuddin et al., 2020).

Additionally, studies are also appearing which are framed from a "gameful design" or "gameful pedagogy" perspective, which appear to be a way of shedding the overtly negative image and behavioristic nature of rewards-based or structural gamification. For example, Hayward et al., (2021) note that:

> "Scholars have distinguished between gamification and gameful design by referring to much of gamification as "rewards based," focused on extrinsic rewards, while gameful learning focuses on deeper, autonomy-supportive, elements of games to promote intrinsic motivation." (p. 559)

These autonomy-supportive elements have little to do with games. As introduced in the paper, general features of "gameful design" are that the grading system is made more transparent to students and they are given a choice of tasks to complete. Gameful pedagogy leans heavily on self-determination theory as an inspiration, but at its core, it is structural gamification.

As perhaps alluded to above, **content gamification** refers to the addition of narrative or game-themed elements to course content itself. A simple instantiation may be the narrativization of an activity so that instead of "just" doing math equations on a worksheet, the equations are embedded in a story where the hero needs the answers in order to progress to a new area or down a dragon or other mythical being. Thus, the two approaches are rarely mutually exclusive.

Critiques of gamification

The application of rewards for completing activities is not a new concept in education where grades, credits, and diplomas are a salient extrinsic reward in formal institutions. Smith-Robbins (2011) notes that the game of education "sucks" and that the addition of additional points in the form of gamification is not likely to fix it. If anything, the removal of points and a focus of meaning are encouraged to promote intrinsically-motivated learning and mastery (Kohn, 1999). This relates to self-determination theory and in particular the concept of intrinsic and extrinsic motivation (Deci & Ryan, 2004) which shows that rewards can undermine an individual's motivation towards performing a task even if they were originally intrinsically motivated to engage with it.

Nicholson (2014) notes that if rewards are used to encourage long-term change, "[o]nce a user becomes accustomed to receiving a reward for an activity, the intrinsic motivation to perform that activity is replaced with extrinsic motivation. This means that the gamification system will have to run forever to keep the user engaged (p. 294)." This point is particularly important for the application of gamification in educational contexts, as rewards may promote a certain kind of behavior which is not conducive to the learning of material except on a surface-level basis.

A final question, then, is that if the critiques of gamification are so strong, why do teachers flock towards this method of engagement for their classrooms? Perhaps, as Healey mentioned, it feels comfortable because it's built upon what teachers already know: giving grades for tests and rewarding positive behavior. For instance, Todd (2017) remarks that gamification is appealing because it offers "the ability to harness the power of games without the difficulty of trying to implement games within my courses" (p. 1).

This is echoed in Tulloch & Randell-Moon (2018) who note that due to the financial and cultural hurdles of trying to do GBL, gamification "has been seen as a practice that takes the potential of game-based learning but makes it practicable to deploy" (p.213). The term may thus be perceived as a simple, solve-all solution for all industries, including education (Bogost, 2014). Finally, Collins (2022) also sums up his experience of teachers utilization of gamification as a simple, yet flawed logic:

> "My usual issue with gamification is that when it comes up in discussions around pedagogy of teaching, it's usually somebody saying, 'so, we're going to do badges, and that equals gamification, and because that includes the word *game* equals good. They are doing a lot of mental leapfrogging to get to that point."

In other words, teachers may equate their students' enjoyment of games as a reason for the use of badges due to its link with the term gamification and thus games.

Pedagogical concept 2: game-based learning

The power of games and play as a teaching tool stems from their inherent ability to motivate and engage players (Squire, 2005). This is extrapolated to educational contexts, where additional benefits include the ability for learners to engage in situated or experiential learning (Gee, 2004), develop multimodal literacy skills (Steinkuehler, 2007), and the activation of students' social capital (Blume, 2018) among others.

At first glance, GBL seems very straightforward; it's any "learning that is facilitated by the use of a game" (Whitton, 2012, p. 1337). However, as soon as one starts to define or describe the parts of that definition, the concept becomes complicated: I.e., "What kind of learning, facilitation, and game?" Table 2 introduces Whitton's (2014, p.4-5) eight types of GBL[3] (italics in original) with studies which exemplify the approach where appropriate. However, in terms of the type of game used, it should be noted here that GBL diverges into two sub-categorizations based on the source of the game: 1) designing educational games such as "serious games" or "edutainment" (Egenfeldt-Nielsen, 2011) and 2) using commercial games for learning (Squire, 2005). This paper is predominantly concerned with the latter of these two categorizations.

Table 2: game terms

Way	Example
Learning *with* entertainment games	*Portal* and physics education (Pittman, 2013).
Learning *with* educational games	*Math Blaster* and math education (Redfield, et al., 2007).
Learning *inspired* by games	*Chess* "as a stimulus for designing algorithms" (Whitton, p.4)
Learning *within* games	*Yu-Gi-Oh!* and reading comprehension (Gee, 2009).
Learning *about* games	Walsh and Apperley (2009) have proposed several questions to guide the critical exploration of game literacy.
Learning *from* games	I.e., how can game elements be used for learning. Thus, gamification is an example of this.
Learning *through* game creations	Learning more about McDonalds by making an anti-advergames about McDonalds (Pedercini, 2014) or about math by making a math game (Ke, 2014)
Learning *within* game communities	*Sims* communities as a domain for women to develop technical skills collaboratively (Gee and Hayes, 2011)

[3] She actually uses the term "games and learning" to be "broader and more inclusive" (p.4)

Although Whitton's ways are broad enough to refer to many types of games and many types of facilitation, we are concerned that the word "game" makes most people think of "digital games." Indeed, Whitton's book is titled "**Digital** Games and Learning," perhaps for their popularity with students, researchers, the public, venture capitalists, and book publishers. We are also concerned that the word "learning" makes most people think of a cognitivist "learning transfers from the software directly into the brain of the player/learner" view of learning rather than a broader understanding of development that considers the additional role and interaction of teachers, peers, context, society and purposes in the learning process. These concerns are elucidated in the next section.

Critiques of GBL

Due to the notion that games as a medium can teach without the need for external interference (Prensky, 2006), teachers may interpret GBL as "just playing" or expect games to do the heavy-lifting in terms of teaching (McCoster, 2015). Alternatively, due to the frivolous image of games and gaming, the use of games may be relegated to a Friday afternoon treat (York, 2020). In either case, the rigorous pedagogical implementation of games as a teaching tool (rather than autonomous learning tool, or treat) is left unconsidered.

Subsequently, GBL is often conflated with gamification. Thus, teachers may consider badge-usage a type of GBL, when no gameplay or game-related activity is carried out. Additionally, as Whitton includes learning from games as a subcategorization of GBL, the terms blur depending on how they are defined. The issue then, is that gamification as described above is a limited set of behavior manipulation devices with little room for pedagogical freedom, whereas GBL prescribes no starting pedagogical approach leaving the teacher free to innovate as they wish. Thus, if a teacher "adds badges" and either ignorantly or deliberately considers it GBL, they are devastatingly impeding the potential for pedagogical innovation in their classroom.

There are also various cultural and financial hurdles to bridging games into formal contexts. First, GBL is predominantly preceded with the word "digital," which instantly creates a financial barrier to entry. Creating digital games is both expensive and requires considerable technical skills; and there is an overhead to purchase and upkeep devices for students to play digital games, thus locking out potential small-scale, teacher-created projects. Second, and still as a consideration of GBL as digital game usage, despite a growing body of literature on how to select and use games as teaching tools (Eck, 2009; Becker, 2016) teacher gaming literacy (Molin, 2017), or ICT skills (Swier & Peterson, 2018) are inadequate for successful implementation. Therefore, based on these two reasons, we emphasize here that GBL is not only for digital games[4]. Finally, games may be effective in teaching students, but only insofar as they teach *how to play the game*. Thus, transferability of learning into non-game contexts is an issue. This, however, is not merely a problem of games, but of education in general where disagreements about transferability potential of education continue (Barnett, & Ceci, 2002).

Having now outlined the pop culture and pedagogical concepts at the core of this paper, we now answer the title question.

A return to the question

Through planning and recording the podcast and the initial phases of writing this paper, we found ourselves staring at a bigger question, which again relates to the Matrix movies. Upon being

[4] See York, et al. (2021) for a longer critique of a technological focus of GBL in language education.

redpilled out of the Matrix, Neo is still not "free." He is still being controlled.[5] Thus, here, we start by pulling ourselves out of one matrix by answering the title question, but then find ourselves at another layer of questioning:

How are educational institutions like being trapped in the Matrix?

Which again goes deeper when considering how education fits into a wider neoliberal society. Figure 1 is a visual representation of the various layers of control and simulation we cover in this paper on pop-culture and pedagogy. What does all of this mean? In the words of Cypher: *"It means buckle your seatbelt, Dorothy, because Kansas is going bye-bye."*

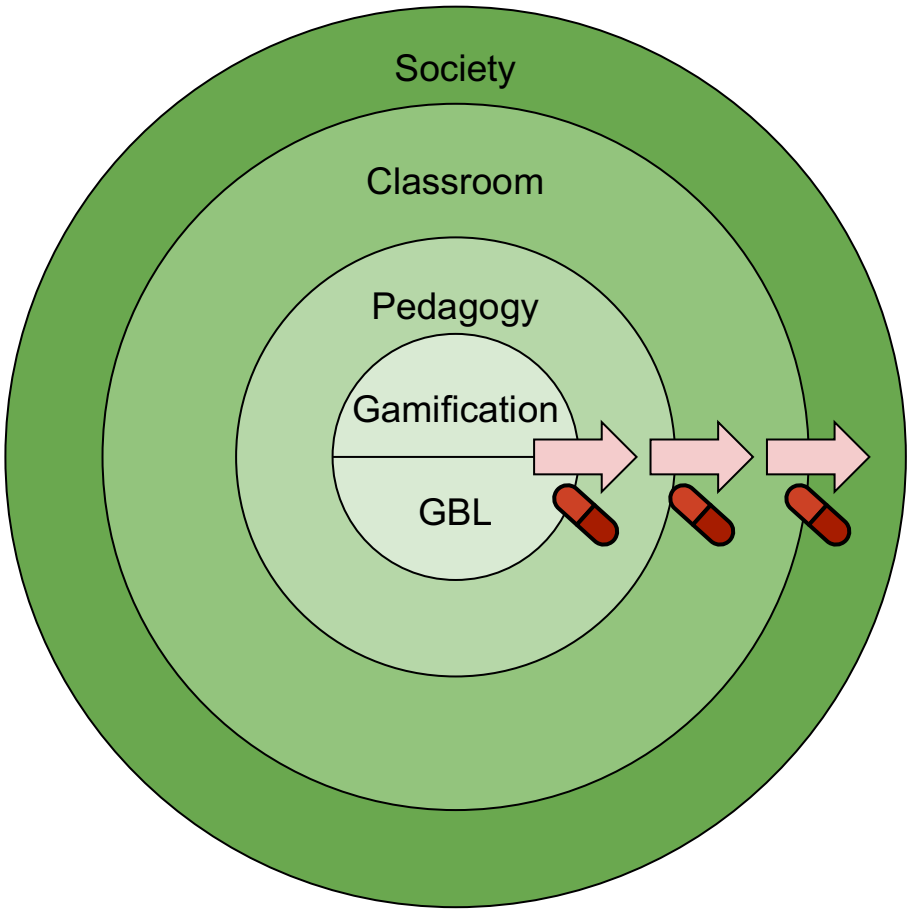

Figure 1: Layers of redpilling examined in this paper.

[5] Neo is used as a pawn to reset the Matrix. Neo doesn't know the "why" of his actions.

💊 *First layer of red-pilling: the illusion of playing*

Illusion of playing games

The first similarity between the matrix and gamification is in their **illusory nature**.

The Matrix offers the illusion of living in a real world, and gamification offers the illusion of playing a game. But whilst the vast majority of humans in the matrix really are tricked into believing that they are experiencing reality, who is being tricked in a gamified context: the students, or the educators? As mentioned by Todd and Collins above, educators may be the ones being tricked into thinking they are "gaming" by incorporating gamification elements into their classroom. Students, however, are more savvy to the tricks that teachers use, and can see through the fake "game" being proffered (Zainuddin et al., 2020). Compared to this is GBL which is the act of playing, studying, and generally using games towards educational goals and objectives, thus the "real" experience of using games in the classroom.

Control

The second and more insidious area in which gamification resembles the Matrix construct is in its underlying system of control. The Matrix controls humans, turning them into batteries, which is the goal of the robot overlords. Gamification controls students' behavior towards the goals of teachers or other stakeholders. Gamification is also an additional, fake (i.e. virtual) reality applied *on top/in place of* the controlling nature of the classroom forming a Matrix construct of its own. As a concrete example, gamifiers obfuscate the grading process, replacing it with game terminology. GBL does not (necessarily) do this[6]. Thus, the reality of the classroom as a domain in which one gets grades towards a diploma or degree is not hidden from the students with GBL. A teacher and their students can permeate the "magic circle[7]" of gameplay and non-gameplay contexts where gameplay exists *within* the classroom, not trying to be a substitute for the classroom context itself.

Figure 2 exemplifies how gamification replaces the underlying control of the classroom (e.g., grades) with a replacement. However, in GBL the teacher and student both freely talk about the controlling elements. In Matrix terminology, this is like being red-pilled, and whilst still in the Matrix are able to talk about it.

[6] A game-based learning class can also be gamified, as the two are not mutually exclusive.

[7] A contested term which denotes a physical, temporal, psychological and social boundary between playing a game and not playing a game.

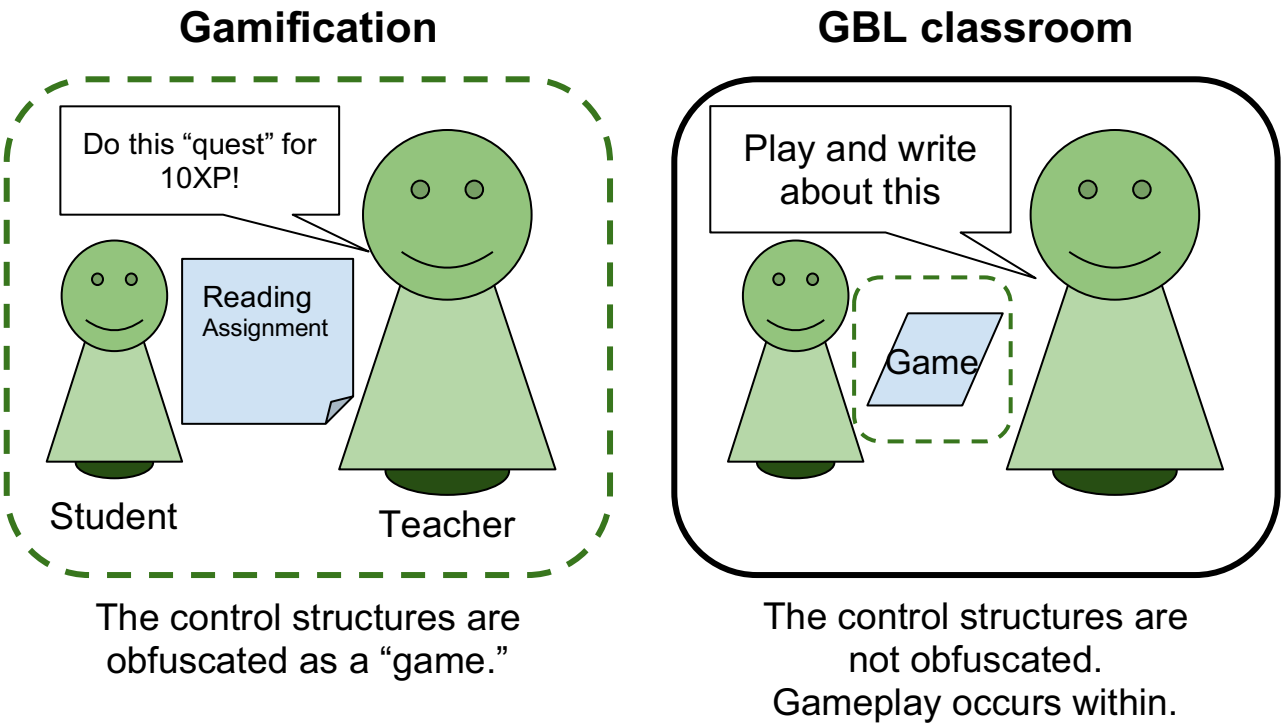

Figure 2: A gamified classroom versus a game-based learning classroom

Subsequently, the controlling element of both the Matrix and gamification is **invisible** to those who do not question it. Returning to the scene in *The Matrix: Reloaded*, a character[8] talks of Neo's ignorance as to how he is being controlled. Neo is following orders; he has no "why" (motive), no "power" (to change his destiny), and is essentially just "another link in the chain" (at the machinations of the robots). In gamification terms, then, this could be seen as students having no agency or knowledge as to why they are chasing points. **Gamification purposely obfuscates the why**. In the trite meme: gamification is the layer of chocolate on top of the broccoli of learning; it's the simulated reality that stops humans moving around in their amniotic pods. Don't question the 'why,' just do it for the points. Outside of educational discourse, Johnson warns of how gamification is manipulating us, and how to recognise the fact with the equally red-pilling advice: "If you're collecting checks on a card or frequent flyer miles, ask yourself why you care." (2022). Thus, if a student *does* ask themselves why they care about chasing points, in Matrix terminology, the student would be essentially "red-pilling" themselves.

Why do teachers choose gamification?

Consider teachers as the captives of this layer of our multilayered-Matrix for a moment. Some typical tasks they engage in as part of the profession are: creating a curriculum, tasks, readings, lesson plans and homework, as well as assessing, grading, praising, punishing, and motivating students. This may be why teachers glom onto gamification as a tool so easily: because it feels so familiar. Gold stars, detention, praise, grades, the cane, etc. these tools of coercion have existed long before the hype and promise of gamification. As Montessori wrote in 1912:

[8] The Merovingian

> "We know only too well the sorry spectacle of the teacher who, in the ordinary schoolroom, must pour certain cut and dried facts into the heads of the scholars. In order to succeed in this barren task, she finds it necessary to discipline her pupils into immobility and to force their attention. Prizes and punishments are every-ready and efficient aids to the master who must force into a given attitude of mind and body those who are condemned to be his listeners" (p. 21)

GBL represents something of a brave new world where teachers must break out of the familiar mold and change class activities, grading rubrics, or learning something new about teaching and games. This is hard, as seen in the case of "digital" game-based learning: "situating digital games in an educational environment introduces various challenges" (Molin, 2017, p.13). Thus, if a teacher does not have support or training they may feel like they are, as Morpheus says in "the desert of the real," which is why they may prefer to keep themselves blue-pilled, and work within a system of control as it is the more predictable and familiar. Again, and in closing, we ask, are teachers doing as Morpheus says?

> "You have to understand, most of these people are not ready to be unplugged. And many of them are so inured[9], so hopelessly dependent on the system, that they will fight to protect it."

GBL is no better than gamification

The takeaway from this section is that gamification is an unnecessary simulated reality applied to classrooms to coerce students into undertaking "garbage tasks" (Kohn in Brandt, 1995). The biggest issue is that gamification **does not attempt to take the garbage tasks seriously, or at face value, but veil them in glitz, glamour, and an additional simulated reality focused on inspiring student engagement** at the cost of deeper meaning making (Baydas & Cicek, 2019). GBL is suggested as a cure to at least being *aware* of the underlying reality of the classroom: students will be graded, they have to do certain things to fulfill the requirements of the curriculum or course of study. However, being cognizant of "the reality of the classroom" or not, GBL is not a guaranteed cure for the garbage tasks because GBL does not prescribe an approach, method, or technique for teaching, only the tools. A game or *ludic activity* (York et al., 2021) could be used in a behaviorist, exploitative, constructivist, or transformational way depending on the teacher's pedagogical alignment. As deHaan warns:

> "If the purpose of education is to develop students' interests and abilities to participate, as they wish, in various private, public and professional areas of life, then games, if used at all, should directly facilitate students' reaching this goal" (2019, p.4).

Which leads us down the next rabbit hole: pedagogy and the "school as Matrix" concept.

💊 *Second layer of red-pilling: pedagogy as liberation in the classroom*

Focusing on the US, there are growing concerns that modern youth are shielded from reality by overprotective parents and higher educational institutes that are too eager to bend to the whims of students, which may be the cause of mental health issues and perpetuate the need for further shielding (Lukianoff & Haidt, 2018; Schlosser, 2015). Although there are rebuttals that declaim this trend at the individual institution level (Hanlon, 2015), school districts may also influence what students are exposed to through censorship (Sarappo, 2022; Alter & Harris, 2021). Schools are thus a politically-charged domain where teacher voices may be filtered/suppressed through

[9] accustomed to something unpleasant

individual biases, or wider institutional or state policies. Educational institutes may therefore be considered a form of Matrix, where students are made to engage in activities devoid of reality.

Additionally, perhaps due to an over reliance on standardized tests (McNutt, 2021), there are concerns that education has become so sterile that it is considered a place of "anti-pedagogy" (Kline & Holland, 2021) or "banking education" (Freire, 1998), void of meaning, student choice or voice, and any attempt at radical innovation. As a concrete example, school districts have been criticized for implementing completely-scripted lesson-plans which require no critical thinking on the part of the teacher or students (Murphy, 2015). However, whatever conflux of pressures a teacher finds themselves under, they have the power to lead students out into society. As written by Irwin (2002, p.13):

> "Keep in mind that "education" literally, etymologically, means "to lead out," as the prisoner is led out of [Plato's] cave and as Neo is led out of the Matrix."

Teachers thus have a choice. They can stay bluepilled and refrain from engaging in critical issues in the classroom, or take a pedagogy red pill and become progressive educators who pair "the values of democratic education, self-direction, community building, critical pedagogy, and choice with those of standards, oversight, and testing" (McNutt, 2019). However, we can't un-coddle students with gamification or "just playing" games. The teacher needs to do more. Referring back to deHaan (2019), if games are to be used at all, it should be as a transformative act, not to fill students' minds with empty facts and figures for tests.

Thus, the thesis of this section is that pedagogical approach matters, and this is another point of comparison between gamification and GBL. As a "distorted version of behavioral economics" (Bogost, 2014), gamification does not have the pedagogical grammar to instigate transformation in students. In its worst light, gamification is the surveillance and "datafication" of student behavior (Manolev, et al., 2019), at its best it helps students engage with tasks (Zainuddin et al., 2020, Table 6). However, like Neo's brain in the Matrix, GBL may be considered a blank canvas onto which any pedagogical approach may be painted, behaviouristic and controlling or liberating and transformative. From a behavioristic approach, students could play a roll-and-move game to practice Spanish verb forms[10], or by using the pedagogy of multiliteracies students could connect gameplay to wider social or personal issues, and enact change within society or themselves (Furusawa & Yoshida, 2021).

Table 5 is an overview of some ways a teacher may grow an "ideological backbone" (deHaan, 2019, p.4) and redpill themselves into being a better teacher for their students even at the risk of being fired (see McNutt, 2018). Note that **redpilling** here does not mandate a teacher to engage in GBL per se, but to be pedagogically innovative in general. A layer *above* our comparison of gamification and GBL. In contrast, the **blue-pill solution** is to refuse to engage and instead act as Montesorri advised against: punishing and rewarding students into compliance with gamification.

[10] https://twitter.com/VLitynska_MFL/status/1324046916779446273

Table 3: Redpilling and bluepilling as a teacher

Teacher concerns	**Redpill solutions**	**Bluepill solutions**
I want students to engage with the tasks I give them.	• Change the tasks themselves to be more meaningful and relevant to the students' lives (York, forthcoming). • Experiment with pedagogy (Spano et al., 2021). • Ask your students questions (Postman & Weingartner, 1969). • Try something new. Fail fast, but try again. Iterate.	Gamification
Learning how to teach is hard and expensive.	• Listen to more Pedagodzilla and related podcasts. • Read inspiring work from progressive educational outlets like the Human Restoration Project.[11] • Watch more relevant YouTube videos.[12] • Join teacher-focused Facebook groups and discord servers. • Read articles from open-access journals.[13]	
I don't have any choice in what I teach.	• Push back against institutional policyholders. • Redpill others in your institution to help you in your fight for change. • Innovate covertly in your classroom and then show positive results.	

However, even if the teacher is able to bridge the school-society membrane and help their students participate as members of society, isn't society itself a Matrix within which we all dwell?

💊 *Third layer or red-pilling: society*

Assuming teachers are able to prepare students for life in society, what awaits them but another layer of control and myriad simulations? We propose that the third layer of control is our shared neoliberal, *hyperreal* (Baudrillard, 1994), *hypernormalized* (Curtis, 2016), *spectacle* of a capitalist society (Debord, 2012). If these terms are unfamiliar and stange, we invite you to see how deep the philosophical rabbit hole goes.

As food for thought however: Is the Matrix of capitalism and consumerism something we are able to break free from? Some are trying, as in the intentional living communes like East Wind (East Wind Community, 2020), but is this kind of living only for those who have "redpilled" out of society? What would happen to technological innovations in medicine, communication, and national identity if everyone did this? Is plugging out of society the only way to counter its pressures and stresses? Or is awareness of our "prison" enough to resist its oppression? And what if we do break free of the Matrix of society? Invoking an infinite regression, could it be "matrices all the way down?"

[11] https://writing.humanrestorationproject.org/
[12] Let AI and the algorithm provide you with a custom feed of relevant videos!
[13] Like ours: Ludic Language Pedagogy.

Thus, we leave this part of the paper deliberately short. It is up to you, reader, to see just how deep this rabbit hole goes. From talk of gamification and GBL through the lens of the Matrix, we went deeper than we thought and invite you to explore the philosophical concepts brought to the public's attention through the Matrix movies: Baudrillard, Debord, Plato, Kant, Hobbes, and Hegel among others.

💊 *Final takeaway: redpilling does not equal action.*

Regardless of how aware one becomes of the power structures we live within, action to fight or act against them is not an inevitability. As seen in the Matrix movies, Cypher was not moved into action by being redpilled. Conversely, he actively wanted to undo his new knowledge and return to being a bluepill. "Ignorance is bliss," he said. Thus even if one is red-pilled, the choice to take action is on the individual. It is up to us to decide to ACT, to free others trapped in the matrix of behaviorist educational policies and poorly-considered pedagogy, not to mention the further-reaching capitalist, consumerist and neoliberal society we live in.

But how should we act? There's no easy answer. Neo doesn't have an answer at the end of the movie.

He still has to fight and he is still under control as seen in Reloaded, but he continues to try in the desert of the real. We end the paper with Neo's message, as a call to action for teachers to wake up, and change their practices:

> "I know you're out there. I can feel you now. I know that you're afraid. You're afraid of us. You're afraid of change. I don't know the future. I didn't come here to tell you how this is going to end. I came here to tell you how it's going to begin. I'm going to hang up this phone, and then I'm going to show these people what you don't want them to see. I'm going to show them a world without you, a world without rules and controls, without borders or boundaries, a world where anything is possible. Where we go from there, is a choice I leave to you."

Conclusion

This paper started out as a podcast of four educators considering how gamification is like being trapped in the Matrix. This was contrasted with game-based learning as the "real-world" of the Matrix movies. The simplest explanation of this comparison is that gamification is the *illusion* of using games towards educational goals, whereas game-based learning is the *actual* use of games towards educational goals. However, in comparing gamification to game-based learning we discovered a deeper set of questions and additional layers of control beneath both gamification and GBL. The first of which was a teachers (lack of) choice regarding pedagogy and teaching methods. We proposed that teachers take a pedagogy red pill and take action in their classrooms. Consider the following points:

- Garbage tasks? Don't sugar coat them. Drop the stick, drop the carrot, and bring meaning.
- Consider where you have "freedom to play" and start your revolution there.
- Redpill other people out with you.
- Be transparent with students about grading.
- If you are interested in gamification, read the *gameful pedagogy* literature on how self-determination theory can be harnessed in classrooms to promote autonomy, competency, and relatedness in students.

We end with a quote from Pesce (2014, p. 111):

> "It seems unlikely that the drive to gamification will slow [...]. If gamification cannot be slowed, it can at least be resisted—through contraludics. In that resistance new forms will emerge that breed the gameful and playful together into new ludic forms that accept the goal, but treat it as meaningless. The magic circle can be broken, and the prisoners freed, but only in play."

Thanks for playing with us in this paper.

Declaration of interest statement

All the authors declare that they have no established conflicting financial interests or personal relationships that may have influenced the research presented in this paper.

References

Alter, A., & Harris, E. A. (2021, March 4). *Dr. Seuss books are pulled, and a 'cancel culture' controversy erupts*. The New York Times. https://www.nytimes.com/2021/03/04/books/dr-seuss-books.html

Barnett, S. M., & Ceci, S. J. (2002). 'When and where do we apply what we learn?: A taxonomy for far transfer'. *Psychological Bulletin*, 128(4), 612–637. https://doi.org/10.1037/0033-2909.128.4.612

Baudrillard, J. (1994). *Simulacra and simulation* (S. F. Glaser, Trans.). Ann Arbor: University of Michigan Press.

Baydas, O., & Cicek, M. (2019). 'The examination of the gamification process in undergraduate education: A scale development study'. *Technology, Pedagogy and Education*, 28(3), 1–17.https://doi.org/10.1080/1475939X.2019.1580609.

Blume, C. (2018). 'Playing by their rules: why issues of capital (should) influence digital game-based language learning in schools'. *CALICO Journal*, *36*(1), 19–38. https://doi.org/10.1558/cj.35099

Bogost, I. (2014). 'Why gamification is bullshit'. In S. P. Walz & S. Deterding (Eds.), *The gameful world: Approaches, issues, applications* (pp. 65–79). Mit Press Cambridge, MA.

Brandt, R. (1995). 'Punished by rewards? A conversation with Alfie Kohn'. *Educational Leadership*, *53*(1), 6. http://web.archive.org/web/20000817072622/http://www.ascd.org/readingroom/edlead/9509/kohn.html.

Collins, M. (2022, March 2). 'How is gamification like being trapped in The Matrix? And what is the real world of games based learning?' *Pedagodzilla*. https://www.pedagodzilla.com/how-is-gamification-like-being-trapped-in-the-matrix-and-what-is-the-real-world-of-games-based-learning/

Curtis, A. (2016). *HyperNormalisation*. UK: BBC.

Debord, G. (2012). *Society of the spectacle*. Bread and Circuses Publishing.

Deci, E. and Ryan, R. (2004). *Handbook of self-determination Research*. Rochester, NY: University of Rochester Press.

deHaan, J. (2019). 'Teaching language and literacy with games: What? How? Why?' *Ludic Language Pedagogy* (1), 1-57.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). 'From game design elements to gamefulness: Defining 'gamification''. *Proceedings of the 15th International Academic MindTrek Conference on Envisioning Future Media Environments - MindTrek '11*, 9. https://doi.org/10.1145/2181037.2181040

Eck, R. V. (2009). *A guide to integrating COTS games into your classroom* [Chapter]. Handbook of Research on Effective Electronic Gaming in Education; IGI Global. https://doi.org/10.4018/978-1-59904-808-6.ch011

Egenfeldt-Nielsen, S. (2011). 'What makes a good learning game? Going beyond edutainment'. *ELearn*, *2011*(2), 2. https://doi.org/10.1145/1943208.1943210

Freire, P. (1998). *Pedagogy of the oppressed* (new rev. 20th anniversary ed., M. B. Ramos, Trans.). New York, NY: Continuum. (Original work published 1970)

Furusawa, K. & Yoshida, H. (2021). 'How we developed both inside and outside a "games and multiliteracies" seminar: A comparison of a society-focused journey and a self-focused journey'. *Ludic Language Pedagogy*, 3, 26-36. https://llpjournal.org/2021/03/15/furusawa-yoshida-comparison-journey.html

Gee, J. P. (2004). *What video games have to teach us about learning and literacy* (1. paperback ed). Palgrave Macmillan.

Gee, J. P. (2009). 'Literacy, Video Games, and Popular Culture'. In D. R. Olson & N. Torrance (Eds.), *The Cambridge handbook of literacy* (pp. 313–326). Cambridge University Press.

Gee, J. P., & Hayes, E. R. (2011). *Language and Learning in the Digital Age*. Routledge.

Hanlon, A. R. (2015, August 14). 'The Trigger Warning Myth'. *The New Republic*. https://newrepublic.com/article/122543/trigger-warning-myth

Harman, G. (2015). *Thought*. Princeton University Press.

Hayward, C., Schulz, K., & Fishman, B. (2021). 'Who wins, who learns? Exploring gameful pedagogy as a technique to support student differences'. *LAK21: 11th International Learning Analytics and Knowledge Conference*, 559–564. https://doi.org/10.1145/3448139.3448198

Irwin, W. (Ed.). (2002). *The Matrix and philosophy: welcome to the desert of the real* (1st edition). Open Court.

Johnson, D., Deterding, S., Kuhn, K.A., Staneva, A., Stoyanov, S. and Hides, L., (2016). 'Gamification for health and wellbeing: A systematic review of the literatur'e. *Internet interventions*, 6, 89-106.

Johnson, S. (2022, January 13). 'How 'gamification' of everything is manipulating you (and how to recognize it)'. *Lifehacker*. https://lifehacker.com/how-gamification-of-everything-is-manipulating-you-and-1848352808

Ke, F. (2014). 'An implementation of design-based learning through creating educational computer games: A case study on mathematics learning during design and computing'. *Computers & Education*, 73, 26–39.

Kline, K., & Holland, K. (2020). *Jean Baudrillard and Radical Education Theory: turning right to go left*. Brill. https://brill.com/view/title/59335

Kohn, A., (1999). *Punished by rewards: the trouble with gold stars. in incentive plans, A's, praise, and other bribes*. Boston: Houghton Mifflin.

Lukianoff, G., & Haidt, J. (2018). *The coddling of the american mind: how good intentions and bad ideas are setting up a generation for failure* (Illustrated edition*)*. Penguin Press.

Macmillan Education ELT. (2020). *Effective gamification [*Advancing Learning Webinar*]*. YouTube. Retrieved January 18, 2022, from https://youtu.be/YZvoBJBoLUg.

Manolev, J., Sullivan, A., & Slee, R. (2019). 'The datafication of discipline: ClassDojo, surveillance and a performative classroom culture'. *Learning, Media and Technology*, *44*(1), 36–51. https://doi.org/10.1080/17439884.2018.1558237

McGonigal, J. (2011). *Reality is broken: Why games make us better and how they can change the world.* Penguin.

McNutt, C. (2018, April 19). *PSA for teachers: teach to get fired.* Human Restoration Project. https://writing.humanrestorationproject.org/psa-for-teachers-teach-to-get-fired/

McNutt, C. (2019, September 21). *Game design, classroom design, and the faux use of gamification.* Human Restoration Project. https://writing.humanrestorationproject.org/game-design-classroom-design-and-the-faux-use-of-gamification/

McNutt, C. (2021, September 25). *Unpacking "neoliberal" schooling, Part 3: progressive education: Enter the Matrix*. Human Restoration Project. https://writing.humanrestorationproject.org/progressive-education-enter-the-matrix/

Molin, G. (2017). 'The role of the teacher in game-based learning: a review and outlook'. In M. Ma & A. Oikonomou (Eds.), *Serious games and edutainment applications* (pp. 649–674). Springer International Publishing. https://doi.org/10.1007/978-3-319-51645-5_28

Murphy, J. (2015, May 26). *Charter school criticized over lesson script.* Democrat and Chronicle. https://www.democratandchronicle.com/story/news/2015/05/26/rochester-prep-charter-school-lesson-script/27967605/

Nicholson, S. (2015). 'A RECIPE for meaningful gamification'. In T. Reiners & L. C. Wood (Eds.), *gamification in education and business* (pp. 1–20). Springer International Publishing. https://doi.org/10.1007/978-3-319-10208-5_1

Nicholson, S. (2014). 'Exploring the endgame of gamification'. In: Mathias Fuchs, Sonia Fizek, Paolo Ruffino u.a. (Eds.): *Rethinking gamification*. Lüneburg: meson press 2014, pp. 289–303. DOI: https://doi.org/10.25969/mediarep/725.

Pedercini, P. (2014, April 29). *Making games in a fucked up world – G4C 2014 – Molleindustria.* Retrieved 16 February 2022, from https://www.molleindustria.org/blog/making-games-in-a-fucked-up-world-games-for-change-2014/

Plass, J.L., Homer, B.D., Mayer, R.E. and Kinzer, C.K., (2020). *Theoretical foundations of game-based and playful learning.*

Pesce, M. (2014) 'Contraludics'. In Walz, S. P., Deterding, S. (Eds.), *The gameful world: Approaches, issues, applications* (pp. 277-296). Cambridge, MA: MIT Press.

Pittman, C. (2013). 'Teaching with portals: the intersection of video games and physics education'. *LEARNing Landscapes*, 6(2), 341–360.

Postman, N., & Weingartner, C. (1969). *Teaching as a subversive activity*. Delacorte [u.a.].

Redfield, N. M., Gaither, D., & Redfield, C. L. (2007). 'Educational game effectiveness: answering the call'. AACE SITE March 2007 San Antonio, Texas

Rey, P. J. (2014). 'Gamification and post-fordist capitalism'. In Walz, S. P., Deterding, S. (Eds.), *The gameful world: Approaches, issues, applications* (pp. 277-296). Cambridge, MA: MIT Press.

Sarappo, E. (2022, February 1). *Read the Books That Schools Want to Ban*. The Atlantic. https://www.theatlantic.com/books/archive/2022/02/banned-books-list-to-kill-a-mockingbird-maus/621428/

Schlosser, E. (2015, June 3). *I'm a liberal professor, and my liberal students terrify me*. Vox. https://www.vox.com/2015/6/3/8706323/college-professor-afraid

Smith-Robbins, S., (2011). 'This game sucks: How to improve the gamification of education'. *EDUCAUSE review*, 46(1), pp.58-59.

Steinkuehler, C. (2007). 'Massively multiplayer online gaming as a constellation of literacy practices'. *E-learning*, 4(3), 297–318.

Stockman, C., Nottingham, E. (2022) 'Surveillance capitalism in schools: what's the problem?' *Digital Culture & Education*, 14(1), 1–15

Todd, A. (2017). 'Why gamification is malarkey'. *The Morning Watch: Educational and Social Analysis*, 44(1-2 Fall).

Tulloch, R., & Randell-Moon, H. E. K. (2018). 'The politics of gamification: Education, neoliberalism and the knowledge economy.' *Review of Education, Pedagogy, and Cultural Studies*, 40(3), 204–226. https://doi.org/10.1080/10714413.2018.1472484

Wachowski, L. & Wachowski, L. dirs. (1999). *The Matrix*.

Wachowski, L. & Wachowski, L. dirs. (2003). *The Matrix: Reloaded*.

Wachowski, L. & Wachowski, L. dirs. (2003). *The Matrix: Revolutions*.

Wachowski, L. & Wachowski, L. dirs. (2021). *The Matrix: Resurrection*.

Walsh, C. S., & Apperley, T. (2009). 'Gaming capital: Rethinking literacy'. *Proceedings of the AARE 2008 International Education Research Conference*, 12. http://ocs.sfu.ca/aare/index.php/AARE 2008/AARE/paper/view/101

Whitton, N. (2012). 'Games-Based Learning'. In N. M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 1337–1340). Springer US. https://doi.org/10.1007/978-1-4419-1428-6_437

Whitton, N. (2014). *Digital games and learning: Research and theory*. Routledge.

York, J. (2019). '"Kotoba Rollers" walkthrough: Board games, TBLT, and player progression in a university EFL classroom'. *Ludic Language Pedagogy*, 1, 58-114.

York, J. (2020). 'It's your moooooove: Why teaching with games should be like vaporwave (and not nightcore)'. *Ludic Language Pedagogy*, 2, 104-114. https://llpjournal.org/2020/06/24/york-teaching-with-games-vaporwave.html

York, J., Poole, F. J., & deHaan, J. W. (2021). Playing a new game—An argument for a teacher-focused field around games and play in language education. *Foreign Language Annals*, 54(4), 1164-1188. https://doi.org/10.1111/flan.12585

Zainuddin, Z., Chu, S. K. W., Shujahat, M., & Perera, C. J. (2020). The impact of gamification on learning and instruction: A systematic review of empirical evidence. Educational Research Review, 30, 100326. https://doi.org/10.1016/j.edurev.2020.100326

Appendix

The podcast episode which inspired this paper can be listened to here:
https://www.pedagodzilla.com/how-is-gamification-like-being-trapped-in-the-matrix-and-what-is-the-real-world-of-games-based-learning/