Student Motivation Through Gaming: Games-Based Learning for EFL

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With a variety of ways to play games, whether with a Play station, Xbox, PC, Nintendo Switch, or even smartphone, gaming occupies a great deal of time for a lot of people in many different walks of life. Even people who do not play games have often heard of some of the more popular offerings such as Fortnite, Apex Legends, Call of Duty, Final Fantasy, Pokémon, Dragon Quest, and more. People play games for various reasons: the stories have become complex and as memorable or impactful as a movie or even a novel; the graphics have come extremely close to life-like enough to fall into the "uncanny valley". Character AI and animation have become very complex thus interactions in-game feel realistic whether that is fighting, plain conversation, or even romance in the game world.

In academia and education, games are also being used, but it is not often taken outside of the traditional sense of games for classroom use. In different types of classes, especially language ones, modified board games or modified for style TV quiz shows are used to promote language acquisition. In a newer trend called "gamification" classroom activities are "gamified" by adding game elements to normal classroom tasks such as experience points, levels, and awards for students who do the classwork (Eng, 2019).

Games-based learning is the newest and potentially scariest to traditional academic learning for what it represents: a way of learning that centers on gaming itself as the vehicle for education rather than traditional models with games or gaming aspects attached sideways to it.

"Games-based learning is an educational or an instructional method that uses games to teach a specific skill or reach a learning outcome. Games-based learning takes the content of your learning material and makes it fun" (Eng, 2019). Thus the purpose of this research paper is to explore the potential of Games-based learning on EFL students in Japan and how if at all it could supplement their identity and motivate them to learn a foreign language.

Serious Gaming in Academia

To lend credence to the idea of Games-based learning, research has been conducted on the effect that game playing has on motivation and identity for gamers. In the article *The Ideal Self at Play: The appeal of Video Games That Let You Be All You Can Be*, the authors conducted two studies with 1,123 male and female participants between the ages of 18 and 48. In both studies, they found evidence that playing a video game was intrinsically motivating and

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had the greatest influence on emotion when the players' experience with the game character was congruent with the players' conceptions of their ideal selves (Przybylski et al., 2012).

Their research indicates that when the immersion or the illusion of non-mediation between the game self and the ideal self was at its strongest, so was the level of intrinsic motivation for the player. Playing games that helped a gamer identify through immersion with their ideal self, created more motivation to play the game (Przybylski et al., 2012).

To understand more fully the ideas that Przybylski et al. (2012) put forward in their research on gaming and motivation, the theories and concepts behind their work need to be examined.

Levels of Immersion

The concept of immersion can be a complex one as their many types of video games. Miller & Bugnariu (2016) created a set of criteria for determining level immersion in virtual environments while researching the effectiveness of virtual environments (VEs) to teach social skills interventions to individuals with autism spectrum disorder (ASD). Like Przybylski et al. (2012), Miller & Bugnariu (2016) found that a higher level of immersion was conducive to teaching social skills in virtual environments.

Figure 1

Examples of Virtual Environment Characteristics by Level and Aspect of Immersion

EXAMPLES OF VIRTUAL ENVIRONMENT CHARACTERISTICS BY LEVEL AND ASPECT OF IMMERSION

| Level of immersion | Aspect of immersion | | | | |
	Inclusive	Extensive	Surrounding	Vivid	Matching
Low	Numerous signals indicating the presence of device(s) in the physical world (e.g., use of a joystick or mouse to control the VE, direct instruction from an experimenter during the task)	Only accommodates 1 sensory modality (e.g., auditory, visual, motor/proprioceptive); stimuli are not spatially oriented	Computer monitor presentation with limited field of view	Low fidelity and visual/color resolution; display may replicate features of the simulated environment, but not in a detailed or specific manner	No motion capture; visual experience does not match proprioceptive feedback
Moderate	Some signals indicating the presence of device(s) in the physical world (e.g., noise from a computer fan, weight and movement restriction from wearing a safety harness)	Accommodates 1–2 sensory modalities (e.g., auditory, visual, motor/proprioceptive); stimuli may or may not be spatially oriented	Large-screen projection with extended field of view	Moderate fidelity and visual/color resolution; display replicates some features of the simulated environment, but some detail may be missing	Body segment motion capture (e.g., head, hand); visual experience somewhat altered to match proprioceptive feedback based on head or body segment movement
High	Limited signals indicating the presence of device(s) in the physical world (e.g., the weight of an HMD or an eye-tracking device)	Accommodates >2 sensory modalities (e.g., auditory, visual, motor/proprioceptive); stimuli are spatially oriented	Head-mounted device or surround projection	High fidelity and visual/color resolution; display closely replicates multiple features of the simulated environment in great detail (e.g., correctly placed, dynamic shadows)	Full-body motion capture; visual experience altered to closely match proprioceptive feedback based on whole body movement

Source: Miller & Bugnariu (2016).

While playing video games for motivation and identity are not the same type of study as Miller & Bugnariu (2016), virtual environments are the same across the board as video games adhere to the criteria for moderate to high levels of immersion. They have some or no signals of the use of a device in the real world and they accommodate two or more sensory modalities,

large screen projection or head-mounted display, high fidelity, and a great deal of bodily motion capture.

Motivation through the Self Determination Theory

The Self Determination Theory (SDT) states that people are motivated to grow, change, or adapt when three innate and universal psychological needs stem from the Basic Psychological Needs Theory (BPNT) (Ryan and Deci, 2000). These three needs are the building blocks of creating intrinsic motivation in an individual. The BPNT takes into consideration both the absence or frustration of one or all needs, with the frustration of a need being far more dangerous than the mere absence of a need being fulfilled (Vansteenkiste et al., 2020).

Autonomy

Autonomy is the experience of having volition and willingness. When a person is autonomous, they experience a sense of integrity in their actions, thoughts, and feelings which are self-endorsed and authentic. When frustrated, the individual feels as if they have no control or are pushed in an unwanted direction (Vansteenkiste et al., 2020).

Competence

Competence is the experience of effectiveness and mastery. When an individual is satisfied, they engage in activities and experience opportunities for using their skills or extending them. Frustration is its opposite: a sense of ineffectiveness, failure, or helplessness (Vansteenkiste et al., 2020).

Relatedness

Relatedness is the community aspect, the experience of warmth, caring, or bonding that is satisfied by connecting to and feeling important to others. Its opposite is also easily understood as alienation, exclusion, and loneliness (Vansteenkiste et al., 2020).

In the Self-Determination Theory, there are two key assumptions of the theory that are built upon by the Basic Psychological Needs Theory. First, People need to grow and the need for growth drives behavior: people are actively directed toward growth. Gaining mastery over challenges and taking in new experiences are vital for creating a cohesive sense of self. Second, autonomous motivation is important. While people are often extrinsically motivated, such as through external rewards: fame, fortune, grades, or better jobs, Self-Determination Theory focuses on intrinsic motivation such as the need to gain knowledge or independence (Ryan & Deci, 2017).

Gaming the Self Determination Theory

Putting it in perspective, Przybylski et al. (2012) had found that while playing video games, gamers are fulfilling the requirements of the Self Determination Theory. Players find gaming to be intrinsically motivating because of the convergence of their ideal self with the game self. So, for example, if a gamer feels like his or her ideal self is a treasure hunter, then they would play an adventure game like Play station's *Uncharted series.* Playing as a treasure hunter would be intrinsically motivating and would push them to continue playing because they feel like their ideal self.

The game self satisfies the requirements of autonomy, competence, and relatedness that players want to see in themselves. A game gives a player autonomy with the choices for paths in the story and how to deal with other characters friendly or non-friendly. Competence in gaming comes from leveling up the character, learning new skills to use in-game, and furthering the story to completion. Relatedness is less pronounced but still present as people can play games online with others or feel connected to the NPCs (Non-player characters) who are part of the story.

When these basic psychological needs are virtually satisfied and not frustrated, gamers feel immersed in the game and are driven to act or behave more in the direction that further satisfies the need for converging their real selves with the ideal self they play as in the games.

Are Japanese University Students Motivated by Games?

Students are some of the biggest proponents of gaming and the pushing forward of gaming technology. You can often see students conversing on trains or at school while playing smartphone games or talking to friends about when they can sit at their home consoles such as a Play station or PC and engage in more sophisticated games. Games are important in many students' lives which indicates Games-based learning could be well-received and impactful in EFL. To understand if EFL could benefit from game-based learning, this research asks two questions:

1. Are students motivated in their lives and do they identify with game characters or game stories?

2. If students do identify with game characters and stories, could this be used to create a Games-based learning program for EFL?

Materials and Methods

It is the inquiry of this research to understand if and to what length Japanese university students are motivated by video games, if at all. The survey was conducted with 111 first and second-year students in four separate agricultural departments in EFL classes at Akita Prefectural University. The questions were Likert Scale and delivered through Survey Monkey on the University message board. All students are anonymous.

Table 1 *Results of "Media and Education" Survey No. 1*

Q2. あなたはビデオゲームをしますか？(プレイステーション、PC ゲーム等)		
Answer Choices	Responses	
全くしない	27.93%	31
ほとんどしな	18.92%	21
ときどき	18.92%	21
よくする	34.23%	38
	Answered	**111**
	Skipped	**0**

Question: Do you play video games? 53.15 % or a little more than half say they play video games sometimes or more often.

Table 2 *Results of "Media and Education" Survey No. 2*

Q3. あなたはゲームのキャラクターに共感や感情を共有したりしますか？		
Answer Choices	Responses	
全くしない	6.36%	7
ほとんどしな	10.00%	11
どちらでもな	8.18%	9
ときどき	37.27%	41
よくする	38.18%	42
	Answered	**110**
	Skipped	**1**

Question: Do you ever identify with game characters? 75.45% agree that they sometimes or often identify with characters.

Table 3 *Results of "Media and Education" Survey No. 3*

Q4. ゲームのキャラクター,ゲームストーリーは、あなたの日常生活へのやる気やモチベーションになっていますか。		
Answer Choices	Responses	
全くない	10.81%	12
ほとんどない	11.71%	13
どちらでもな	8.11%	9
ときどき	32.43%	36
思う	36.94%	41
	Answered	**111**
	Skipped	**0**

Question: Do the characters or stories of games motivate you in your daily life? 69.73% agree that sometimes or often they are motivated in their daily lives by game characters or stories.

Table 4 *Results of "Media and Education" Survey No. 4*

Q5. ゲームを通して外国語を勉強する気になると思いますか？							
Answer Choices	Responses						
全くない	8.11%	9					
ほとんどない	16.22%	18					
どちらでもな	9.01%	10					
ときどき	35.14%	39					
思う	31.53%	35					
	Answered	**111**					
	Skipped	**0**					

Question: Do you think games can inspire students to learn a foreign language? 66.67% believe that sometimes or more that games could inspire students to learn a foreign language.

Results and Discussion

In total, four of five questions of the online questionnaire were considered useful for this survey, with the first question being dropped due to being unrelated to the subject matter of gaming. These questions attempted to get at the heart of whether Japanese first and second-year students felt motivated in their daily lives by gaming and a final question on how realistically they believed that a game focused on second language learning would be an inspiring motivation for students. The results of the anonymous questions were received and answered positively by students with most saying their daily lives are influenced and that almost seventy percent believe game-based learning for language acquisition would be inspiring.

It is believed that students feel this way because of the intrinsic motivation they receive from gaming. In the game world, students have control of their autonomy, competence, and relatedness. This tends to contrast with the daily life of a Japanese student in which many educational motivations are external in the form of pressure to succeed from parents, university, and peers. Extrinsic motivations can be so strong in Japan that students turn to any means necessary to pass, such as cheating with smartphones (Tacker, 2020). Extrinsic motivations in this way are not long-term and not effective at reaching positive learning goals with students. In (Pulvers & Diekhoff, 1999; Howard et al., 2020) punishment or social stigma as a maladaptive outcome (Howard et al., 2020) of extrinsic motivations was considered ineffective as a way of deterring the behaviors that cause them.

What is successful as Howard et al. (2020) presents in their research on student motivation and associated outcomes is that the Self Determination Theory should be considered more by educators. Their findings highlight that intrinsic motivation is strongly related to student success and well-being. The research stresses that external regulation or extrinsic motivations will drive short-term behavior which will often impede or undermine intrinsic motivations (Howard et al., 2020). If all students' motivation is coming from the feeling of being required to do something by outside forces, certainly they will do it for a time, but lose

the internal motivation for it. Ultimately if a student loses what drives them internally, they won't continue to grow or behave adaptively.

Introjection, the unconscious adoption of the attitudes and ideas of others is a final, yet important periphery aspect connected with the third building block of relatedness in the Self Determination theory. Introjection positively relates to education-focused behaviors such as classroom effort and engagement. According to Howard et al. (2020), their research is consistent with the Self-determination theory's view that introjection is a partial internalization of values and thus can drive behaviors as if they were originally intrinsic and important to one's self-esteem (ego involvement). This type of relatedness is not just to real-life people but could also be the relatedness people feel to characters in a game or to people they meet using avatars in online games.

At the core of this research were the two questions posed through the survey to the 111 students at Akita Prefectural University. The first question on whether students are motivated in their lives by the stories and characters of video games.

While more than half of the students claimed yes to this question, it hints at the more important aspect of what might possibly be missing from their EFL educations that Games-based learning can bring to it. Self Determination Theory is centered on the idea that intrinsic motivations for behaviors are done for their own sake (Deci & Ryan, 2000). Something that tends to be the antithesis to most EFL students who feel they are being pushed into taking English courses. Gaming promotes play, exploration, and curiosity-seeking activities. These exemplify intrinsically motivated behaviors as extrinsic incentives where pressure is not needed for their impetus.

This is not to say that external motivations are damning and completely unnecessary. In *Identified Regulation,* a person can understand the value of the behavior being shown through external motivation, personally endorse the value of the activity and thus experience a relatively high degree of volition and willingness to act in that way (Ryan & Deci, 2020). An even stronger case for external motivation is *Integrated Regulation* or a person not just recognizes and identifies with the value of the behavior but finds that it is congruent with already realized intrinsic interests and values (Ryan & Deci, 2020). For EFL students the external motivations can be valuable if they see the value and internalize it. This is sadly often not the case in higher education.

As well in many EFL classroom situations, because the Japanese education systems focus on achievement through high-stakes testing, it is often forgotten that more importantly, academia's purpose revolves around the development of the students. In schools, students not only gain knowledge and aptitude but a host of other important traits that make them better people and better learners. Identities, confidence, self-esteem, and mental health are all affected by what a school supports in its student body (Ryan & Deci, 2017).

Therefore, a Gaming -based learning education is a way to instill the basic psychological needs of the Self Determination theory for students by providing them with autonomy, competence, and relatedness in EFL classrooms.

> *"Self Determination Theory's applications in education focus on facilitating the satisfaction of the basic psychological needs of both students and teachers. An enormous amount of research in school settings ranging from elementary levels to advanced degrees across diverse cultural contexts has confirmed SDT's position that supports for basic psychological needs facilitate students' intrinsic motivation and well-internalized motivation and enhance their well-being."*
> (Ryan & Deci, 2020).

The second question inquired if a game could inspire them to learn a foreign language, more specifically yet not stated, English as a foreign language. While again more than half agreed that it is possible. What would a game for EFL that facilitates the satisfaction of the basic psychological needs for intrinsic motivation looks like? What kind of characters, stories, and gameplay would move students to want to learn English? On top of that would it even be successful?

In recent history, a large amount of research has been conducted on games and EFL. One such research study used educational video games with Iranian students. The results of their study indicate that playing games in classes had a significant effect on Iranian EFL learners' willingness to communicate (Liu et al., 2021). In another study, they used non-educational online games and the results revealed that online video games become useful for learners of English as a foreign language because they help improve communication skills and intercultural communication skills (Toufik & Hanane, 2021).

Conclusion

It seems obvious that for students to feel connected to the game, story, and characters that they would need to have some aspects of integrated regulation, being able to internalize the character's struggle and story because it is also the student's story and struggle. This perhaps isn't necessarily the case, however, as Przybylski et al. (2012) stated that games that were most intrinsically motivating to players felt a wide distance between who they are (real-self) and their ideal self (game-self). In this case, if the chosen video games satisfy or do not frustrate one or more of the 3 basic psychological needs of autonomy, competence, and relatedness, then there is evidence that students would be intrinsically motivated to learn English as a Foreign Language as detailed in the Self Determination Theory.

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