

Research Paper

Journey into the Virtual Realm: Exploring Gaming Addiction, Sensation Seeking, and Boredom Proneness in Arabic Special Learners

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Abstract: Addiction to video games begins as a harmless pastime but may quickly spiral out of control, affecting every aspect of one's life. Research helps determine why some people are drawn to video games and have a short attention span and a penchant for risky activities. Gaming caters to the boredom-prone and sensation-seeking natures common among young people, who are also more likely to try new activities without considering the consequences. Pathological problems and abnormal behaviours can be avoided by just being aware of the effects of gaming and how people respond to them. The current study focuses on college students' propensity for gaming addiction, sensation seeking, and boredom. One hundred individuals (50 men and 50 women) were assessed using Gaming Addiction Scale (GAS), Arnett's Inventory of Sensation Seeking (AISS), and Boredom Proneness Scale (BPS). The findings show a strong relationship between compulsive gaming, the desire for novel experiences, and the tendency to get bored quickly. Thus, a person's propensity towards experience seeking and ennui is profoundly affected by their gaming addiction.

Keywords: Gaming addiction, sensation seeking, boredom proneness, gifted learners, special education.

Suggested citation: Alanazi, M. S. (2023). Journey into the virtual realm: Exploring gaming addiction, sensation seeking, and boredom proneness in Arabic special learners. *Asia-Pacific Journal of Futures in Education and Society*, 2(2), 1–19. <https://doi.org/10.58946/apjfes-2.2.P1>

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Introduction

Addiction to video games is a form of compulsive behaviour that can have severe consequences in daily life (Yu et al., 2021; Zhang & Li, 2022). Those who suffer from this condition habitually spend excessive time online playing video games or other digital entertainment mediums (Leonard, 2018). It causes severe distress when the person is not playing and makes them feel as if they have no control over how much time they spend gaming (Nasution et al., 2019). When a person becomes dependent on a behaviour, stopping might cause physical or emotional distress. When using a computer becomes addictive, it might cause problems. Addiction to any activity, including video games, social media, or internet use, can lead to a variety of mental health problems down the line (Karacic & Oreskovic, 2017; Wartberg et al., 2020).

Sensation seeking, also known as excitement seeking, is the pursuit of sensational experiences for their own sake (Putranto et al., 2022; Rezaei et al., 2020; Serdar et al., 2022). People who adore experiencing new things for their own sake and are willing to incur risks are known as “sensation seekers” (Kass & Vodanovich, 1990). Sensation seekers are driven by the rush they get from sensual experiences. As a result, they may engage in risky activities like gambling, narcotics, or reckless driving despite the risks involved. While it is true that risky behaviour might have negative consequences, it is also vital for evolutionary progress.

The concept of “sensation seeking” was first articulated by Marvin Zuckerman, who has also made the most significant theoretical and empirical contributions to the field. The core of Zuckerman’s argument is that different people have different thresholds for an optimal experience level due to differences in their biological nerve systems. Sensation seekers seek novel stimuli and experiences to increase their nervous system activation, as low activation levels make them more susceptible to boredom. On the other hand, those who are low interest in sensation seeking have a higher internal activation level and are less likely to seek sensation from the outside world actively. In their work on sensation seeking and adolescent online gaming addiction among Chinese male adolescents, Hu et al. (2017) and Liao et al. (2020) found that sensation seeking positively correlates with both the impulsivity and the enjoyment of playing video games online.

Both the aforementioned factors contribute to the prevalence of adolescent internet gaming addiction (Bondoc, 2020; Buono et al., 2020). Feeling emotionally and mentally uninterested in one’s environment, sitting unoccupied, or having nothing to do can all contribute to the onset of boredom (Farmer & Sundberg, 1986). It is a state of mind brought on by boredom that can negatively affect a person’s behaviour, health, and social life (Wang et al., 2020). Wen-jiun et al. (2018) investigated internet addiction and internet behaviours in teenagers with attention-deficit/hyperactivity disorder and found an association between proneness to boredom and both variables. The results showed a statistically significant correlation

between higher scores on the Boredom Proneness Scale-Short Form's (BPS-SF) lack of external stimulation subscale and an increased likelihood of internet addiction. In other studies, excessive gaming (Hussain et al., 2012) has been shown to have adverse effects on mental health (Li et al., 2011), relationships (Palaus et al., 2017), and academic achievement (Hainey et al., 2011).

However, the potential for gaming to teach people valuable life skills is also being increasingly recognised. There is some evidence that video games can be used as a teaching tool in mathematics, science, language, and history. According to Sung and Lee (2016), students who spent 30 minutes per week playing a math-based video game outperformed their peers who did not. Completing puzzles and challenges improve problem-solving and working memory (Adachi & Willoughby, 2013). Similarly, Granic et al. (2014) found that using games to learn a language enhanced vocabulary and grammar retention. Video games can be a great teaching tool because of the active learning they encourage. Learning in the gaming industry requires more than just sitting and taking notes. This encourages students and makes for better study. Based on this background, this research aims to investigate the experiences of high school students with learning disabilities with gaming addiction, sensation seeking, and boredom propensity.

Review of Literature

Some of the benefits of gaming include enhanced perceptual integration and hand-eye coordination (Hamid et al., 2022). Excessive gaming, however, has been linked to a decline in impulse control, behavioural inhibition, executive functioning, and attention (Paulus et al., 2018); therefore, excessive use may be troublesome for some. Further, addiction to the internet negatively impacts adolescents' physical and mental health, as well as their relationships with others and their ability to learn (Young, 1996). Adolescents who are dependent on the internet are likelier to suffer from attention-deficit/hyperactivity disorder (ADHD) (Bozkurt et al., 2013). Reciprocally, adolescents with ADHD show a strong correlation with the likelihood of developing an internet addiction (Yen et al., 2007). In a prospective community study, the 2-year follow-up period demonstrated that adolescents with ADHD were shown to more likely to develop an internet addiction (Ko et al., 2009). Correspondingly, previous research findings support the idea that it is important to start protecting teenagers with ADHD from the onset of internet addiction as soon as possible.

The elevated risk of internet addiction among people with ADHD may be due, in part, to their propensity towards boredom (Ko et al., 2012). According to the work of Mikulas and Vodanovich (1993, p. 4), boredom is "a state of relatively low arousal and dissatisfaction, which is attributed to an inadequately stimulating environment." According to the definition of boredom provided by Perkins and Hill (1985, p. 222),

“cognitive changes in the direction of less differentiated and more homogeneous construing give rise to a state of subjective monotony which induces, or perhaps even represents the state.” Negative feelings, poor behaviour, strained relationships, and dissatisfaction at work have all been linked to boredom (Vodanovich, 2003). In addition, boredom is a known contributor to substance abuse (Samuels, 1974). Intense internet use is often prompted by boredom (Li et al., 2015), and compulsive internet use is strongly linked to internet addiction (Nichols & Nicki, 2004) and functional impairment due to internet use (Rotunda et al., 2003) among college students. One of the risk factors for young individuals engaging in online gambling is a propensity for extreme boredom (Goldstein et al., 2016).

Additionally, individuals with attention-deficit/hyperactivity disorder (ADHD) may struggle with academic performance and interpersonal interactions because of their heightened susceptibility to boredom (Ferguson, 2000). Adults more prone to boredom have more difficulty staying focused and display more ADHD symptoms (Malkovsky et al., 2012). The hypothesis that high boredom proneness is significantly associated with the risk of gaming addiction among adolescents with ADHD is reasonable, given that internet use can provide rapid responses, immediate rewards, and multiple windows with different activities, which may reduce the feeling of boredom (Ko et al., 2012). However, several questions remain unanswered about the correlation between ADHD adolescents’ propensity for boredom and gaming addiction. First, according to a recent study (Lin et al., 2009), adolescent gamers who experience boredom during their free time are likelier to develop an addiction to video games. However, research into the correlation between ADHD and propensity for boredom in adolescents has been lacking. Secondly, many different variables influence idleness. For instance, one frequent tool for measuring boredom proneness is Boredom Proneness Scale-short form (BPS-SF) (Vodanovich et al., 2005). BPS-SF comprises internal and external stimulation deficiencies (Li et al., 2015). However, no research has investigated the link between boredom propensity traits and compulsive video game playing. Third, there is a wide range of possible online pursuits for teens. The qualities and sources of pleasure from the many internet pursuits vary somewhat. Thus, more research is needed to see if different types of gaming have distinct correlations with people prone to boredom.

A person’s likelihood of being addicted to video games is highly correlated with their sex (Yen, Koh et al., 2009; Yen, Yen et al., 2009), age (parental socioeconomic level (SES) (Chou et al., 2015; Milford et al., 2022; Tian et al., 2019), and the severity of their ADHD symptoms (Yen, Yen et al., 2009). Adolescents’ gaming addiction was also found to be related to where they live and what they did for fun outside of school (Yen, Koh et al., 2009). Still, these associations are tempered by gender and chronological age. Another study found that boredom is more common among men, younger people, the unmarried, and those with lower incomes (Chin et al., 2017).

Still, a previous study on psychiatric inpatients found that boredom proneness is not associated with age or gender (Newell et al., 2012). In this respect, more research is needed to determine if and how these confounding variables affect the relationship between adolescent ADHD and gaming addiction and other activities.

An assessment of secondary schools in Al-Qassim, Saudi Arabia (Saqib et al., 2017) found that internet gaming disorder (IGD, hereafter) occurred in 16% of cases. In addition, a study by Hawi and Samaha (2017) (IGD-20 Test) using a sample of 524 students from 10 high schools in Lebanon found a prevalence rate of 9.2%. Using a hard threshold of 40 as a diagnostic criterion, 1.45% of Emirati female college students had IGD in 2021. The incidence rate increased to 18.20% when the cut-off was loosened from 14 to 21. According to statistics, the increase in IGD cases from 2016 to 2019 was non-significant (Verlinden et al., 2021). There is a substantial association between internet/computer gaming difficulties and mental health symptomatology (Stevens et al., 2020), and 10% of American college students have reported having problems in this area. In short, researchers have documented the negative consequences of IGD on academic performance, gaming time/money, sleep duration, work/school attendance, and other leisure activities (Hawi et al., 2018; Kim & Lee, 2021; Kim et al., 2016; Müller et al., 2015), and the prevalence rates continue to climb. Further, the prevalence of depression in patients with IGD ranges from one-third to one-half, depending on the study (Ostinelli et al., 2021).

Hypothesis

Based on the literature discussion, we propose the following hypotheses:

- H1: Gaming addiction and sensation seeking have a significant relationship.
- H2: Gaming addiction and boredom proneness have a significant relationship.
- H3: The level of gaming addiction is high among students with learning difficulties.
- H4: The level of sensation seeking is high among students with learning difficulties.
- H5: The level of boredom proneness is high among students with learning difficulties.
- H6: There is a significant difference between the effect of gaming addiction in sensation seeking and boredom proneness in relation to gender.

Methodology

Study Sample

The sample comprised 100 high school gifted students (male=50, female=50), aged 15–18 yrs. All students were included irrespective of their courses and consisted of gamers and non-gamers from both urban and rural areas.

Study Tools

Boredom Proneness

The susceptibility to boredom trait was assessed in this study using BPS-SF (Vodanovich et al., 2005). Twelve items on a 7-point Likert scale made up the BPS-SF, a self-administered questionnaire. Six items measured internal stimulation (e.g., “I find it easy to entertain myself.”) and the other six measured external stimulation (e.g., “Unless I am doing something exciting, even dangerous, I feel half-dead and dull.”) to make up the BPS-SF’s two subscales. Boredom can be caused by a lack of external stimulation or an individual’s incapacity to develop exciting activities, measured by the internal and external stimulation subscales. A higher overall score on the BPS-SF’s internal and external stimulation subscales indicates a more significant lack of stimulation in both brain areas. The researcher used conventional forward, backward, and pre-test step procedures to translate the English BPS-SF into Arabic. The present study found that the BPS-SF’s internal consistency (Cronbach’s α) for the internal and external stimulation subscales was .71 and .74, respectively.

Sensation Seeking

Zuckerman (1994) popularised the term “sensation seeking,” which refers to the desire for and pursuit of fresh, varied, complex, and powerful feelings and experiences notwithstanding the attendant dangers to one’s health, safety, legal standing, or financial stability. Further, Arnett (1994) defined sensation seeking as a propensity or potential to look for sensation, which can take numerous forms depending on the individual’s tendencies and, in particular, how the social environment directs, develops, and amplifies those tendencies. Individual needs for novelty and intensity were presented by Arnett (1994) as two components of sensation seeking. This is distinct from Zuckerman’s notion, highlighting novel and complicated elements. According to Wohlwill (1984, as cited in Arnett, 1994), the intensity component is a more effective way to comprehend sensation seeking than the complexity component alone. Sensation seeking is linked to reckless actions like speeding (Arnett, 1992; Zuckerman & Neeb, 1979), having casual sex (Zuckerman et al., 1976), drinking excessively (Schwarz et al., 1978), and drug abuse (Satinder & Black, 1984), as revealed by Arnett (1994). The type of sensation seeking that leads to gaming addiction is the subject of this study.

Game Addiction Scale (GAS)

This original English scale was translated into Arabic, and then back again. With prompts like “Now we are interested to know how much time you’ve spent on games,” participants were given a clear idea of how to respond to the scale items. Video games on any platform were included in this category. People who checked “sometimes” or “more often than not” for all seven items were classified as monothetic gamers (“pathological gaming”), while those who checked “sometimes” or “more often than not” for at least half the items (four to six of seven items) were classified as polythetic gamers (excessive gaming) in accordance with the hypothesis of Lemmens et al. (2009). The Cronbach’s alpha value generated for the Game addiction scale was between .82 and .87, indicating high reliability.

ADHD Characteristics

Participants’ inattention and hyperactivity/impulsivity were assessed in the month preceding the study using the shortened SNAP-IV version. A Likert scale with responses ranging from 0 (not at all) to 3 (very much) was used to rate each item. In this analysis, the subscales for inattention (.80) and hyperactivity/impulsivity (.89) had high internal consistency reliability. Extreme ADHD symptoms were indicated by the high sum scores on the subscales. Child psychiatrists used the diagnostic criteria outlined in the DSM-5 (ADHD diagnostic criteria) to classify individuals as having predominantly inattentive, primarily hyperactive/impulsive, or mixed presentations of ADHD. Child psychiatrists also noted if trial participants were using any ADHD medication.

Procedure

The study assistants interviewed the individuals using the BPS, Chen’s Internet Addiction Scale (CIAS), and internet activity questionnaires.

Statistical Analysis

The data was coded for SPSS-20 analysis. The Karl Pearson’s coefficient of correlation and t-test were used to assess the relationship between the two variables.

Findings and Discussion

Table 1 shows the mean and standard deviation results for gaming addiction, sensation seeking, and boredom proneness variables. From the table, it is clear that the population has an average score of 8.16 in gaming addiction which can be interpreted as game-playing addicts. For sensation seeking, the individuals have an average score of 52.61, which can be interpreted as high sensation seekers. In regard

to boredom proneness, their average score is 123.24 which can be interpreted as a high boredom proneness. The maximum and minimum scores obtained by the individuals in gaming addiction were 0 and 20, respectively and in sensation seeking, 38 and 66 as their maximum and minimum scores. Whereas for boredom proneness, the maximum and minimum scores obtained were 174 and 74, respectively.

Table 1. Mean and standard deviation for the variables of gaming addiction, sensation seeking, and boredom proneness of students as a group

Variables	N	Minimum	Maximum	Mean	SD
Gaming addiction	100	0	20	8.16	5.27
Sensation seeking	100	38	66	52.16	6.47
Boredom proneness	100	74	174	123.24	18.26

Table 2 shows the Pearson correlation coefficient results for gaming addiction and sensation seeking. From the table, the correlation score between gaming addiction and sensation is 0.229, indicating that sensation seeking positively correlates with gaming addiction. This shows an increase in sensation seeking when gaming addiction increases. Hence hypothesis 1 which states “There is a significant relationship between gaming addiction and sensation seeking” is accepted.

Table 2. Pearson correlation coefficient results for gaming addiction and sensation seeking

Variables	N	Coefficient of correlation	Sig.
Gaming addiction	100	0.229	0.022
Sensation seeking	100		

Table 3 shows the Pearson Correlation coefficient results for gaming addiction and boredom proneness. The score between gaming addiction and boredom proneness is 0.323, indicating that boredom proneness is positively correlated with gaming addiction. This shows an increase in boredom proneness when gaming addiction increases. Hence Hypothesis 2 which states “There will be a significant relationship between Gaming addiction and boredom proneness” is accepted.

Table 3. Pearson correlation coefficient results for gaming addiction and boredom proneness

Variables	N	Coefficient of correlation	Sig.
Gaming Addiction	100	0.323	0.001**
Boredom Proneness	100		

**Correlation is significant at 0.01 level.

Table 4 shows the t-value in terms of gender for the study variables. Among male participants, gaming addiction has a mean value of 10.12 and a standard deviation of 5.22, respectively. Sensation seeking has a mean value of 53.66 and a standard deviation of 6.35, respectively. Among female participants, gaming addiction has a mean value equal to 6.20 and a standard deviation of 4.58, respectively. Sensation seeking has a mean value of 51.56 and a standard deviation of 6.47, respectively. The t-value obtained for gaming addiction is 3.99, and 1.63 for sensation seeking. Since the critical value is higher than the t-value of gaming addiction, the results suggest a significant difference in gaming addiction among males and females. However, as the critical value is lower than the t-value of sensation seeking, there is no significant difference in sensation seeking among male and female students.

Table 4. T-value in terms of gender for study variables

Variables	Males (N = 50)	Females (N = 50)	T	Sig.
Gaming Addiction	M = 10.12 SD = 5.22	M = 6.20 SD = 4.58	3.99	0.00
Sensation Seeking	M = 53.66 SD = 6.35	M = 51.56 SD = 6.47	1.63	0.10

The findings demonstrate that the likelihood of becoming addicted to video games was higher among those who scored higher on the BPS-SF dimension measuring lack of external stimulation. The mother's socioeconomic status tempered the link between insufficient outside stimulation and compulsive video game playing. Moreover, higher scores on BPS-SF for lack of external stimulation were significantly related to a high propensity for online gaming. In comparison, higher scores on BPS-SF for lack of internal stimulation were strongly related to a low propensity for online study. There might be a biological link between being easily bored and becoming addicted to video games. Boredom has been linked to activity in the insula, amygdala, and bilateral ventromedial prefrontal cortex in a prior fMRI study of people playing a first-person shooter video game (Mathiak et al., 2013). Another fMRI investigation linked insula and caudate nucleus activity to boredom (Dal & Whittman, 2017). In addition, fMRI research has linked internet gaming disorder to disruptions in functional connections between the frontal lobe and the striatum (Ko et al., 2015), the amygdala and the insula (Chen et al., 2016), and the frontal lobe and the insula and the amygdala (Ko et al., 2015). Thus, both boredom propensity and gaming addiction involve brain regions involved in emotional regulation, impulse control, and motivation.

Second, adolescent ADHD patients may be more prone to developing a gaming addiction and a preference for certain gaming activities due to their inability to sit still for long periods. According to BPS-SF, a low score on the external stimulation

sub-scale implies that the individual is experiencing a lack of stimulation from their surroundings. Adolescents with ADHD who score high on the absence of external stimulation measures may find it challenging to get enjoyment from everyday activities and downtime. Thus, video games can quickly and easily relieve boredom by providing various entertainment options.

Adolescents with ADHD who score highly on BPS-SF for lack of external stimulation are drawn to online gaming because it offers them unique emotional experiences, which they do not get anywhere else in their daily lives. More precisely, the items on the BPS-SF internal stimulation subscale pertain to a perceived inability to generate sufficient stimulation for oneself (Vodanovich, 2003), indicative of boredom owing to a lack of stimulating activities. Higher scores on BPS-SF for lack of internal stimulation were substantially connected with a low willingness to engage in online studying. Still, the present study found no significant association between a lack of internal stimulation and gaming addiction. These days, many people are engaged with online education. Adolescents with ADHD who have high scores on BPS-SF for lack of internal stimulation may continue to feel they lack the ability to generate enough stimulation for themselves to study. However, online learning entails more vivid and energetic learning than traditional classroom study (Bhargava et al., 2022; Lai, 2022).

Third, the strong correlation between boredom propensity and gaming addiction in teenagers with ADHD may be due to elements beyond these factors, such as psychopathology and personality traits. Both anxiety (Derogatis et al., 1974), and hostility (Gordon et al., 1997) have been shown to have strong associations with a propensity for boredom. In addition, Yen et al. (2014) found that depression and anxiety are strongly linked to gaming addiction among teenagers with ADHD. In another study, adolescent gaming addiction was predicted by depressive, anxious, and hostile traits throughout a 2-year follow-up period (Mehroof & Griffiths, 2010; Ko et al., 2009).

Further, sensation seeking is strongly connected with gaming addiction in teenagers with ADHD (Chou et al., 2015), and it is also one expression of boredom proneness. There is a strong correlation between boredom propensity and gaming addiction; thus, it would be wise to investigate if psychopathologies and personality traits directly contribute to or mitigate this relationship. Fourth, adolescent ADHD patients may be more prone to boredom if they have a gaming addiction. Adolescents' experiences in the real world are vastly different from the virtual worlds that the gaming industry creates for them. Teens who have attention-deficit/hyperactivity disorder (ADHD) may be less bored in online settings but more severely bored in the virtual world. However, more research is needed to confirm this concept.

While many view gaming as a form of entertainment, its potential as a valuable educational tool to help people learn and develop essential skills is becoming more

and more apparent (Granic et al., 2014; Hainey et al., 2011; Wang et al., 2010; Zhang et al., 2020). The use of video games as a teaching tool is one promising area. Math, physics, language, and history are just a few fields that have been found to benefit from using video games as a teaching tool (Adachi & Willoughby, 2013; Barab & Dede, 2007). For instance, some studies (Papastergiou, 2009; Zhang et al., 2020) demonstrated that kids who spent 30 minutes per week playing a math-based video game had much higher test scores than those who did not. Furthermore, another study found that participants who played a game that featured puzzles and challenges benefited from enhanced problem-solving and working memory (Adachi & Willoughby, 2013). Students' vocabulary and grammar were also found to have improved after playing a language-learning game.

One reason video games can be helpful in the classroom is that they encourage students to be active participants in their education. In contrast to sitting back and taking notes during class, players of educational video games must actively engage in the learning process. Better learning outcomes may result from pupils remaining interested and motivated (Rahman & Lee, 2022). The immediate feedback provided by some games can also be very helpful to the learning process. Instantaneous feedback is a common feature in many games, helping players figure out where they stand and how to improve. This feedback loop can improve student learning beyond standard classroom education (Paulus et al., 2018). Student development in areas like critical thinking, problem-solving, and teamwork can all be aided by playing video games. Additionally, students can benefit from developing their social and communicative skills by playing games that require them to work together to attain a common goal. The cognitive benefits of games that encourage strategic planning and innovative problem-solving extend beyond just those of the first category. While video games cannot be counted on to replace formal education entirely, they can be a helpful supplement (Pawar & Shah, 2019). It will be interesting to see how gaming is integrated into the educational landscape as the global video game industry continues to expand and evolve.

It is necessary to mention some caveats to this study. We could not draw any firm conclusions about the links between the propensity for boredom and gaming addiction because the study was cross-sectional. Second, the current study's subjects were culled from special schools and learning centres. To see if the findings of this study apply to teenagers with ADHD who do not attend clinical units, more research is needed. Third, it is unclear how the link between boredom propensity and gaming addiction is formed, which was not investigated in the current study. Because of the potential influence of psychopathology and personality traits on the relationship between boredom proneness and gaming addiction, it is essential to investigate these factors further in children diagnosed with ADHD. Fourth, this study did not use a control group, so we do not know if kids with ADHD are more likely to become addicted to video games because they have a high tolerance for boredom.

Conclusion

Addiction to video games has been linked to a desire for novel experiences. The propensity to experience boredom is strongly linked to gaming addiction. Students have a high rate of gaming addiction, a great need for novel experiences and a strong propensity towards boredom. The effects of gaming addiction on sensation seeking and boredom proneness are not significantly different between the sexes. Further, there is growing evidence from research like this that gaming may be an effective teaching tool for a wide range of subjects and abilities. It will be fascinating to observe how gaming is further incorporated into the educational scene and what new opportunities for learning and development may be brought about as technology advances.

Additionally, the rapid feedback provided by games facilitates learning. In many games, the player receives quick results that can be used to fine-tune their approach. This iterative process can boost learning. Playing video games could also help kids learn to think critically, solve problems, and cooperate. Games that require students to work together can teach them valuable lessons in communication and teamwork. The strategic and problem-solving skills taught by other games are as valuable. Playing games is likely to be something other than schoolwork. Given the immense potential, the international video game industry's future efforts to incorporate gaming into education will be fascinating.

In light of the findings presented here, it is clear that mental health and education specialists should routinely assess the susceptibility to boredom of children diagnosed with ADHD. In addition, parents of children with ADHD who score highly on BPS-SF for "lack of external stimulation" should watch for signs of gaming addiction. Moreover, addiction treatment and prevention programs for gamers should consider kids' propensity for boredom. The propensity to become bored and develop a gaming addiction have common psychological traits, including difficulties with emotional regulation, impulse control, and motivation. Methylphenidate, for instance, has been shown in studies (Han et al., 2009) to lessen the severity of problematic gaming behaviour in children with ADHD. Methylphenidate has the potential to help ADHD children better regulate their impulses, which could lead to less time spent gaming. High-risk ADHD teenagers prone to boredom may be less likely to develop a gaming addiction if their emotional dysregulation is treated early on with cognitive-behavioural treatment. Shek and co-workers (2009) also created a program to help Chinese teenagers overcome their gaming addiction in Hong Kong. The program encourages parents to improve their communication skills with their teenagers to strengthen their self-control, and it boosts adolescents' motivation to take charge of their everyday life. Adapting a similar program for use in an Arabian setting is possible.

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