Mobile Gaming: Its Influence to a Senior High School Student's Academic Performance in Online Learning

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Abstract

Students' academic performance is determined by their behavioral patterns and other student-related factors such as involving in a variety of personal activities outside of the school which specifically includes their engagement in mobile gaming activities. Due to the closure of educational institutions because of the pandemic, students' mobile gaming habits were amplified. This explains the enormous expansion of the gaming industry throughout the implementation of distance online learning. Thus, this research paper investigates how mobile games influence students' academic performance particularly during the prevalence of online learning. In this study, academic performance do not only pertain to the grades that a student acquires, but the overall performance he/she exhibits in school. Additionally, an exploratory single-case study design was used where the main participant was chosen through purposeful sampling. The research utilized a semi-structured interview with the main participant along with other secondary participants including the student's parent, teacher, and a friend. Data were presented and analyzed through an inductive approach to thematic analysis. Research findings show that there are three causes or reasons why a student is playing mobile games; such reasons include boredom, desire to relieve and escape from stress, and to satisfy the need for social interaction. The study further asserted that playing mobile games can either reinforce academic behavior or undermine students' academic drive. Given the limited number of investigations conducted to examine the influence of mobile games to a student's academic performance during the conduct of online learning, this study certainly provides significant knowledge on the topic. This will urge academic institutions and other education personnel to undertake measures to ensure that mobile games and other personal activities done by students outside of the school do not come at the expense of their academic performance.

Keywords: academic performance; online learning; mobile games; mobile gaming; distraction-conflict theory

1. The Research Problem

Introduction

A student's academic performance is a key feature in education. It is considered to be the center around which the whole education system revolves. According to Kassarnig (2018), students' academic performance is determined by their behavioral patterns. Student-related factors such as engaging in a variety of personal activities outside of the school affects their academic performance (Abaidoo, 2018). These various personal activities performed by students outside of the school premises, could include their engagement in mobile gaming activities.

Background of the Study

In our current situation, students' mobile gaming habits were even amplified due to the immediate reform of learning instructions. The shift of classes from being face-to-face into online learning modalities, entails students having an ample time spent in their homes. This now gives them an opportunity to engage on activities that will occupy their leisure time, one of which is playing online mobile games. This explains the enormous expansion of the gaming industry throughout the implementation of online learning. Mobile gaming immediately became one of the most popular activities, with skyrocketing user involvement and spending. Gen Z and Millennial students, in particular, spent more time gaming since it was the most convenient way to spend time amid initial stay-at-home orders, online education, and social isolation measures (Statista, 2021).

A study of Dumrique and Castillo (2018) found that playing mobile games do not badly affect students' grades as long as they can control themselves and are entirely aware of their limitations. In contrast, Heiden (2019) found that problematic and excessive mobile gaming can have negative effects including students' poor academic performance. Webroot (2020) further argued that mobile gaming is definitely linked to students' poor grades. While Gentile (2011) and his colleagues also found that more hours spent in mobile gaming seemed to act as a risk factor that lowers school performance.

With the findings and results of this study being relevant in today's world, the researchers hope to contribute to the existing body of knowledge especially in the field of education. Understanding the influence of mobile gaming on multiple aspects of life specifically on the students' academic performance are of utmost importance and benefit especially now that we are practicing distance and online mode of teaching and learning, which undeniably offers a huge room of distraction for the students. Previous studies have already shown a variety of positive and negative effects of mobile games to students' school performance. However, in a global and local perspective, there were very limited studies conducted to investigate the influence of mobile games to a student's academic performance during the prevalence and practice of online learning where a tendency for distraction is considerably higher. Hence, this is one of the gaps that this study sought to fill in.

Furthermore, most of the previous researches in this area were also conducted in a quantitative approach, which often fails to capture a detailed and in-depth discussion of the topic. Hence, the present study is in a qualitative case study design which helped the researchers obtain a deeper and better understanding of the issue. To achieve this, a series of aspects is explored including the perspective of the participant him/herself, as well as the teachers and parent's point of view.

Statement of the Problem

This study aims to understand and describe the potential influence of mobile gaming to a student's academic performance in an online set up of learning. Specifically, the researchers sought to find answers to the following questions:

1. What causes a student to play mobile games?
2. What is the tendency for a student to neglect his/her studies due to mobile games?
3. How has mobile gaming influenced a student's academic performance?

Theoretical Framework

This study is anchored on Distraction-Conflict Theory of Robert Baron (1986). A distraction is something that makes it hard for one to think or pay attention (Leung, 2015). It is a process by which an individual or group is distracted from the desired focus area, blocking, or reducing the desired information. Similarly, Robert Baron's theory of distraction-conflict is based on the idea that being aware of another object creates a conflict between attending to that object and attending to the task at hand (Baron, 1986). The distraction-conflict model calls this attentional conflict.

Attention conflict refers to the situation in which the person feels a strong urge, desire, or obligation to pay attention to the distractor (i.e., mobile games) when performing their tasks, especially if the distractor is attention-grabbing and difficult to ignore (Baron, 1986). An attentional conflict occurs between multiple stimuli when the subject is interested in paying attention to each stimulus. The task that is unrelated to the subject's primary goal is referred to as the distraction. This conflict only occurs when the pressure to attend to each input is equal and the individual's cognitive capacity to do so is inadequate.

Distraction-Conflict Theory provides insight into the evaluation of mobile games as "other" object that distracts people from their primary goal (i.e., attending online classes). Negative consequences of distraction includes attentional conflict and impaired task performance. Concerning mobile games, its ubiquity and easy access makes it a potentially strong mechanism for distraction. Therefore, mobile games has made distraction easier, due to its portability and the diversity of entertainment features.
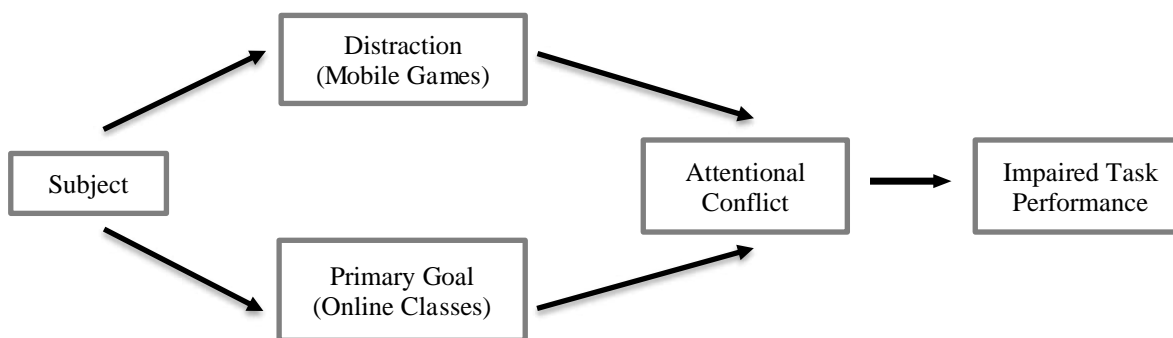

Figure 1.1 The role of Distraction-Conflict Theory in explaining the relationship between mobile gaming and online learning

Scope and Delimitation

This study focuses on identifying the potential influence of mobile gaming on the academic performance of a senior high school student particularly during the implementation of online learning education. The participant in this study is selected based on certain research criteria including the grade level and the time he/she spends in mobile gaming which should be approximately 3 hours or more per day. This is done in order to extract appropriate and precise information relevant to the objectives of the study. Finally, this study is only exclusive for those who are either a Grade 11 or 12 student who has been enrolled from the School Year 2020-

2021 up to the present, as this is the time where online learning started to be practiced.

Significance of the Study

The researchers believe that this study will not only yield data that will be helpful to them, more so to the following groups of people:

The Learners. They will be able to understand the various influence of mobile gaming engagement to their academic performance specifically during the time of online distance education. If mobile gaming is indeed found to have negative influence, students who consistently play these games excessively will be able to adapt ways in order to curb or minimize their gaming habit.

The Teachers. The findings of this study are crucial and useful for them to create effective counsel and valuable intervention to help their students especially those who excessively play mobile games and whose academic performance is being affected as a result.

The Parents. They will become more aware of the possible implications of mobile gaming on their children's academic performance. With this, they will be able to provide their child with important direction and essential discipline such as setting healthy limits on time spent in their child's mobile gaming habits, as well as learning help at home.

The Future Researchers. The results and findings of this study will help them understand how habitual practices such as mobile gaming influences a student's academic performance. This will then become one of their possible references if they wish to engage or conduct new researches related to online mobile gaming. This will also pave the way for more expounded studies related to the similar subject.

Definition of Terms

The following terms were defined according to how they are being used in this study.

Academic Performance — according to Narad and Abdullah (2016) academic performance is the knowledge gained which is assessed by marks given by the teacher and/or the educational goals set by teachers to be achieved by students over a specific period of time. But in this study, this includes the holistic behavior of a student in his/her class. This do not only pertain to the grades that a student acquires, but the overall performance he/she exhibits in school.

Online Learning — usually connotes to synchronous online classes conducted through google and zoom meeting. However, in this study, this specifically refers to both synchronous and asynchronous classes that occurs in a virtual setting where teaching materials, support, and assessments are all delivered online. In simpler terms, an online learning education that takes place over or with the use of the Internet.

2. Related Literature and Studies

The pandemic forced billions of people to lock themselves away, stopping life all over the world, and one of its biggest effects was on education. With the entire world being in a relative standstill due to the spread of the infamous coronavirus disease, an immediate transition from face-to-face learning to distant learning modalities was undertaken. With the closing of schools and educational institutions, the whole world has embraced the urgent solution of online distance education, which also raised questions of efficiency. A continuous growth in distance online learning has been observed in the previous year and this method of

learning is fast becoming a significant constituent of higher education.

However, compared to face-to-face learning, online education is often faced with low student persistence and consequently low completion rates. Being in an online set up is quite challenging as there could be other activities that students might choose to pursue instead of focusing on their studies. This offers them an opportunity to engage on activities that will occupy their leisure time, one of which could include their engagement in mobile gaming activities. In an online system of learning, student participation in the class cannot be controlled, student-teacher interaction is limited and the student is unable to enjoy the social benefits of school. This results to students engaging in mobile gaming activities in order to satisfy their need for social interaction, which gaming provides (Hall, 2020). Furthermore, in an online set-up of learning, students have a lack of parental supervision and they have more flexible schedules, allowing for more game play time.

A student's potentials are not maximized in school when a portion of his time is heavily spent on gaming, especially mobile games wherein the challenge is not just to win the game but to be able to attend academic responsibilities while playing. This will then put their academic performance at stake because it displaces time that could have been spent in other educational activities. It is also worthy noting that students nowadays frequently juggle multiple streams of entertainment media while doing schoolwork or while attending to an online lecture, a trend that researchers call distracted learning. While numerous researchers found that simultaneous engagement in online gaming activities have a significant detrimental impact on learning, many students shrug off warnings about the negative consequences because they consider themselves such good multitaskers (Schidmt, 2020). Mobile games can be socially valuable particularly for people who are geographically isolated. Online mobile gaming is often found to be associated with positive emotions and social relationships. However, problematic and excessive gaming is also associated with poor academic performance (Heiden et al., 2019).

According to Shiers (2020), 81% of teens aging from 18-below regularly play online games and in moderation, gaming can be fun, sociable and interactive with opportunities for children and young people to learn and solve problems. Most will not experience any harm but there are also known impacts of gaming addiction in children which includes interference with studies. Gentile (2011) and his colleagues also found that more hours spent in gaming seemed to act as a risk factor that lowers school performance.

In South Korea, online games have become a public health concern that affects overall life satisfaction because many high-school students spend 23 hours per week playing online (Kwon et al., 2011). Students with new game systems spend less time doing homework, they also performed worse on standardized tests of reading and writing four months later. Moreover, their teachers were more likely to report academic problems. College students spending too much time on online games every week also tend to suffer from worsened learning ability, concentration problems, poor academic performance, and decreased interactions with other people (Lin et al., 2013).

In the study of Garcia et al. (2018) which attempted to investigate the negative effects of online games on students' academic performance, respondents admitted that their engagement in online games had a moderate negative effect in several academic areas such as in doing assignments, quizzes, class recitation, paper works, and examinations. Additionally, a study conducted by Wood, Griffiths, and Parke (2007) found some of the

negative consequences indirectly related to school performance, which participants reported often missing lectures, skipping homework, etc.

Based on the relevant literatures and studies that have been reviewed, online gaming in general has been found to have a variety of influence on students' academic performance. However, most of these studies were conducted prior to the implementation of online distance education where engagement in mobile gaming activities is considerably higher. Most of these literatures have not considered the interplay of online mobile gaming to the practice to online distance education, and how such gaming habit influence students' performance in school. Hence, the present study seeks to find answers to this concern. Furthermore, most of these literatures were also done in foreign countries and in a global scale. There were very limited number of studies conducted in a local perspective which makes this study relevant and worthy of pursuance.

3. Methodology

3.1 Research Design

This study utilized a case study design. Case studies are particularly useful to employ when there is a need to obtain a concrete and in-depth appreciation of an issue, event or phenomenon of interest, in its natural real-life context (Markus, 1989). According to Yin (2003), a case study design should be considered when the focus of the study is to answer "how" and "why" questions, when the behaviour of those involved in the study cannot be manipulated, and when the boundaries are not clear between the phenomenon and context. Hence, this design allowed the researchers to fully explore the key influence of excessive mobile gaming to a student's academic performance and can also provide incredibly detailed descriptions and analysis of such influence.

In addition, the researchers chose to pursue a single case study design for the reason that unlike multiple case studies, this study do not intend to understand the similarities and differences between cases (Stake, 1995). Instead, the researchers only aim to understand the possible influence of mobile gaming to the academic performance of a specific student. As stated by Yin (2003), a single case study is the best choice when a researcher only wants to study one single thing, for example a person from a specific group. Furthermore, a single case study is not as expensive and time-consuming as multiple case studies which allowed the researchers to have a deeper understanding of the case being investigated. Therefore, a more careful study is expected to accomplish.

Specifically, the researchers employed an exploratory type of case study. This type is usually used to explore those situations in which the intervention being evaluated has no clear, single set of predetermined outcomes (Yin, 2003). And since mobile gaming engagement could influence a student's academic performance in a variety of indefinite ways, this type is the most appropriate to be used.

3.2 Research Locale

The study is conducted at a specific barangay in Tacloban City, district of Leyte. In choosing the research locale, the researchers have taken into account the study's employability, affordability, accessibility, and the necessity of appropriate investigation in the chosen locale. A specific barangay in Tacloban City is the most accessible among the places deliberated by the researchers. The chosen locale is perceived to enhance the study's employability considering that one of the researchers reside on the nearby location. Hence, since all the

necessary knowledge of the area being studied is guaranteed, the identified participant is considerably easier to reach out when it comes to the administration of interview. This in turn, makes the conduct of the study cheaper and affordable. While in terms of convenience and accessibility, potential issues to the study such as language barriers is mitigated since the participant and researchers themselves share the same cultural backgrounds. In addition, when it comes to the appropriateness of the chosen locale, researchers have found out based on the initial survey that mobile gaming is prevalent among the students in the identified locale. The results indicate that every student who participated in the preliminary survey has been engaging in mobile gaming activities which makes the locale to be appropriate for the study. Furthermore, considering that the pandemic is still present, the chosen participant was interviewed at his/her house.

3.3 Research Participant

The participant in this study is a senior high school student of a public national high school in Tacloban City, who is also currently enrolled in the School Year 2021-2022 and is playing mobile games for approximately 3 hours or more per day. Purposeful sampling technique was used to identify and select a case that is most rich in information. Since this study hoped to understand a very specific case, this procedure is chosen in order to help the researchers identify a participant who is most fitted to the objectives of this study. A senior high school student with mobile gaming habit was be targeted, since this sample has special knowledge, experiences and interest in the topic under investigation. To select a participant with the specified distinctive characteristic, researchers specifically conducted a preliminary survey in order to find who among all is the best suited and who is able to provide rich information that will answer the questions in the study. Purposive sampling questions is found advantageous in this study as it allowed the researchers to hone in a person who have good grounds that is critical for the research.

3.4 Data Collection Method

The data collection method involved a semi-structured one-on-one interview with the participant including his/her teacher, classmates, peers, and parents. Although the researchers prepared open-ended interview questions with prompts to steer the examination of the case, exact wording and order remained flexible to best navigate the interactive dialogue with the participant. With the participant's consent, all the researchers were allowed to formulate and ask follow-up questions while the interview is on going. Establishing rapport prior to the interview proper was also ensured. The participant was oriented that the interview will last for approximately an hour or two. Interview time and date were determined through the participant's preference to best establish availability and convenience. Interview questions provided insights into the primary research questions, as well as elicit maximum information from the participant on background, perception, feelings, and knowledge about his/her own case. The entire interview was audio recorded in order to make notes and keep in detail spontaneous responses for later transcription and analysis. Intelligent verbatim was also utilized to improve transcript readability. To ensure accuracy, the participant was given an electronic copy of his/her transcribed interview. He/she was then invited to verify correctness, clarify discrepancies, and add any further comments if necessary.

3.5 Ethical Considerations

The researchers took a variety of ethical considerations into account in conducting the investigation. To begin with, the participant was asked for his/her permission whether or not s/he is willing to participate in the study, both through informed consent and verbal confirmation. The researchers informed him/her with the study's goal and purpose, as well as assure that his/her personal information are kept private, confidential, highly protected, and measures were taken to ensure the protection of his/her privacy. For documentation, photographs and audio recordings were taken with the participant's consent and respect his/her decision to decline. Upon acquisition of the data, audio recordings and documentary photographs were saved and kept secure indefinitely. The research participant was made aware that s/he has the right to end the interview at any time or withdraw from the study at any point. Furthermore, the researchers secured a written permission consent and informed consent for the participant's teachers and parents. Both the primary and secondary participants were allowed to use their chosen pseudonyms to ensure anonymity as well as protect their privacy. And finally, researchers refrained from expressing personal viewpoints while conducting the study.

3.6 Research Reflexivity

The researchers were very careful to recognize and set aside preconceived ideas so that the results are not undermined. Considering that the researchers themselves have also been involved in such gaming habit, they ensure that their knowledge, preconceptions, and familiarity about the topic did not taint the results of the study. To increase the validity of the study, the researchers have invited three experts to validate the questions used for the interview. The researchers then revised and restructured the questions according to the comments and suggestions of the validators. Moreover, to increase confirmability, researchers attempted to control biased perspectives by constantly comparing data and citing transcripts that supports interpretive statements. Member checking was also conducted by allowing the participant to review the transcript for inconsistencies and to serve as a platform for further clarification. This process helped researchers to check their own subjectivity and to ensure the reliability of their findings (Jones, 2002). In addition, the researchers fully disclosed the procedures and purpose of the study to the participant prior to the conduct of the study and made sure that the findings were communicated through dense descriptions. The data collected from the one-on-one interview was also transcribed verbatim and were given back to the participant to ensure accuracy, review and validate the findings, as well as confirm that the interpretation and the fundamental structure of the data analysis are consistent with his/her actual case.

3.7 Data Analysis

In order to come up at a profound statement answering the questions under study, the transcribed data from the interview is presented, analyzed, and interpreted through an inductive approach to thematic analysis. The researchers chose this method in order to identify patterns from the recorded interview, categorize or code words and concepts within the transcribed text, and make inferences on the responses communicated by the participant.

Braun and Clarke (2008) identified steps in conducting thematic analysis. This includes familiarization or getting to know that data. This involves transcribing audio, reading through the text and taking initial notes, and generally looking through the data to get familiar with it. Second is to code the data. This means highlighting sections of the text, usually phrases or sentences, and coming up with shorthand labels or codes to describe their

content. Third is to look over the codes created, identify patterns among them, and start coming up with themes which are generally broader than codes. Fourth is to review themes. The researchers made sure that the themes were useful and accurate representations of the data. Fifth is to define and name themes. This involves formulating exactly what it means by each theme and figuring out how it helped to better understand the data. Finally, is to write up the analysis of the data.

4. Results and Discussion

In this part, the researchers presents the results of the interviews and analysis. This is divided into three sections; the first section discusses the causes or reasons of a student's engagement in mobile gaming which is divided into three themes. The second section explains whether or not there is a tendency for a student to neglect his academic responsibilities in exchange of mobile gaming. And the third section answers how mobile gaming influence a student's academic performance.

In order to reveal the essential structure and provide a comprehensive description of the case, the researchers have interviewed not just the study's chosen participant, as well as those who are fundamentally aware of the situation. This includes the participant's parent, teacher, and a classmate/friend. The researchers have opt to utilize their chosen pseudonyms to ensure anonymity and establish the protection of the participants' identity. To make the analysis clear, the characteristics of the interview people is provided below.

Ampol: He is the main participant of the study who is currently a Grade 12 student. He has started playing mobile games in 2020 when he was in Grade 10. On the average, he spends 2-3 hours on mobile gaming everyday.

Fely: She is the mother of the main participant. According to her, there were instances where she and her husband had wished that mobile games did not exist as it sometimes make their child not to immediately comply with what they are asking him to do at home.

Ms. A: She is the current adviser who is also a former subject teacher of the participant. Prior to the conduct of the interview, she was not aware and has no idea that her student has been engaging in mobile gaming activities. However, although unaware, she was not surprised because according to her, there are really a lot of students who is into such habit.

Junyor: He is a close friend, a classmate, and is also a co-player of the participant. They are used to play together as teammates and sometimes as opponents. He has entered the world of mobile gaming earlier than Ampol. He was also one of those who influenced Ampol to start playing mobile games.

As discussed earlier, the researchers adapted Braun and Clarke's (1999) identified steps in conducting inductive thematic analysis. This required the researchers to extract significant statements from the data they have collected through semi-structured interviews. The researchers then code the data by highlighting sections from the interview extract such as phrases or sentences and came up with individual codes that describes the interview extract. Each code describes an idea or feeling expressed by the participant corresponding to the intended research question. After such, the researchers then collate together all the identified codes, look for patterns among them, and establish themes relevant to the questions under investigation. For a better understanding of the analysis made by the researchers, tables are used to illustrate the entire process. Tables are sequenced according to the order of the research questions posted in the statement of the problem.

4.1 Reasons to Mobile Game Play

The first question that the researchers sought to answer was the causes or the reasons why a student engage in mobile gaming, i.e., how has the pandemic increased such engagement. According to the data gathered from the main participant, the researchers found out some of the reasons to students' mobile gaming engagement

.Table 4.1 Causes of Mobile Gaming Engagement

Interview Extract	Codes	Themes
"When classes have switched online and through modular learning because of lockdowns brought by the pandemic, I became so bored. That's why I have immersed myself with *mobile games more."*	Boredom	Boredom
"Playing mobile games gives me enjoyment especially when I am able to play with my friends. We get to play as teams, and formulate strategies for us to *win the game."*	Enjoyment Teamwork	Relieve stress
"Mobile gaming has been a scapegoat where I can vent out my stress and boredom."	Scapegoat	Need for social interaction

As shown in Table 4.1 above, the data revealed the first reason why a student is engaging in mobile games, and that is boredom. The participant has started playing mobile games before the classes have shifted online. However, according to him, he was only playing these games occasionally, and during the time that is convenient for him. As he said, *"When I started playing mobile games, I only play occasionally since I was* really focusing on my academics. But when classes have switched online and through modular learning because of lockdowns brought by the pandemic, I became so bored. That's why I have immersed myself with mobile *games more."* Certainly, the pandemic has provided people especially students a sufficient time to spend at the comfort of their homes. Because of this, boredom and the feeling or weariness becomes inevitable, making them look for means that will suppress such emotions. And on this matter, through mobile games.

Second is to relieve stress. Spending days facing the screen of your cellphones or the pages of your modules can be stressful especially when you do not have a teacher or a knowledgeable one beside you. There's no one you could ask for stuffs that you find hard to understand. *"Online classes and answering the modules is* sometimes stressful that's why mobile gaming has been a scapegoat where I can vent out my stress and *boredom,"* the participant said. The fear and the anxiety of being infected by the virus also adds up to the stress felt by these students. That is why they are left with no choice but to engage on activities such as in mobile games with the hope that it will help them vent their frustrations out and serve as their scapegoat.

And finally is their need for social interaction. Because of the lockdowns and closure of schools and other academic institutions, student-to-student or even student-to-teacher interaction became limited, making students unable to enjoy the social benefits of school, which is actually a huge problem since humans are

inherently a social animal. This results to students engaging in activities that will satisfy their need for social interaction, which mobile gaming provides (Hall, 2020). As the participant explains, *"I play mobile games not just because I wanted to, but also because it gives me enjoyment especially when I am able to play with my friends. We get to play as teams, and formulate strategies for us to win the game."* Although the interaction happens virtually, the social satisfaction it provides is far incomparable to those that happens physically. Face-to-face relationships and those formed within online gaming communities both provide what we call social capital, which is an all-encompassing term for the social resources that make social interaction an interaction. Online game-rooted relationships are as real as any offline ones, and they should not be discredited just because they are mediated through technology (Gossett, 2020).

4.2 Tendency to Neglect Studies

The second purpose of this study is to find out whether or not, there is a tendency for a student to neglect or even disregard his online classes and other school-related activities in exchange of mobile games. Table 4.2 presents the findings relative to this question.

Table 4.2 Tendency to Neglect Studies

Interview Extract	Codes	Themes
"I have never skipped classes just to play mobile games because I do not want my grades to be jeopardized in exchange. I also do not play mobile games during synchronous online classes since as much as possible I really wanted to listen and focus on the discussion even if *sometimes I find it hard to understand everything."*	Consequence Focus	Awareness of the consequences
"If there are a lot of tasks to accomplish, I do my best to finish at least a part of them in the morning, and then only *play mobile games at night before I go to sleep."*	Prioritization	Knowing one's priorities and limitations
I always make sure that there is a clear boundary between my studies and my gaming habit specifically when it comes *to time allotment."*	Self-control	Time-management

As can be seen from Table 4.2, the data gathered from the interview revealed that a student may engage in mobile gaming activities and attend or satisfy his academic responsibilities at the same time. As the participant has stated, "I do not play mobile games during synchronous online classes since as much as possible I really wanted to listen and focus on the discussion even if sometimes I find it hard to understand everything." This happens especially when a student is aware of the possible consequences that he will have to experience if he let mobile games intervene with his academics. "I have never skipped classes just to play mobile games because I do not want my grades to be jeopardized in exchange," the participant has affirmed. When a student knows what should be his priorities are, he can think of ways to perform them all without putting anything at stake.

This was eventually justified by the participant's friend. When asked whether the participant has ever convinced him to skip classes and just play mobile games instead, he undoubtedly said that there was none. As a matter of fact, "There was a time when we have scheduled a game match but then our teacher has suddenly announced that we will be having a class. That's why he has proposed to just reschedule the game on the next day and then attend the class first since it would only take an hour," he expounded.

The participant's parent has also articulated that, "Gladly, we have not caught him yet—playing games during his online classes or while answering his modules. There are just instances that when he is playing, he really do not want to be disturbed. Whenever we ask him to do something while playing, he always respond to let him complete the game first. When this happens, we just allow him to finish since he truly performs his responsibilities at home when he has the time. We also know that he is aware of his limitations." They understand that when these games has been put to start, they cannot be paused unless done. That's why they just let their child continue the game as long as he is not playing it while attending classes, and as long as it does not distract him from his studies.

The participant further explains, "If there are a lot of tasks to accomplish, I do my best to finish at least a part of them in the morning, and then only play mobile games at night before I go to sleep." Because of this, the participant believes that his studies is not affected by his mobile gaming habit because he is aware of his limitations and that he manages his time well. "I always make sure that there is a clear boundary between my *studies and my gaming habit specifically when it comes to time allotment,"* he further explained. According to him, a student do not have to accomplish everything in one day. It's okay if tasks and activities are only done one at a time as long as they are not set aside or disregarded in exchange of a personal pleasure.

4.3 Academic Influence

Finally, the major aim of this study is to determine the influence that mobile games have on a student's academic performance. Table 4.3 provides a concrete illustration of the gathered data relevant to this aim.

Table 4.3 Academic Influence of Mobile Gaming

Interview Extract	Codes	Themes
"I attend classes regularly not unless if there other responsibilities I have to fulfill at home. As much as possible, I also submit my outputs and assignments on *time."*	Submits on time	Reinforce academic performance
"If there are recitations, and I have an idea about the question, I sometimes volunteer to answer. I can also respond to the follow-up clarifications of my teacher since I *really try to listen and understand every discussion."*	Active	
"Whenever I am able to win a match, I get excited to eventually finish my classes and pass the activities so that I	Motivator	Undermine academic drive

can again go back to play games. It pushes my driving *spirit and motivates me to do well.*"		Encourages procrastination
"*When I lose a game, of course I get frustrated but I still* make sure that it do not affect my studies for me as well not *to increase the disappointment I feel.*"	Disappointment	
"*When there are activities that we should answer,* especially if the deadlines are still far, I sometimes set them aside and choose to play *mobile games instead.*"	Complacence	
"*But when there are instances that our tasks are given* simultaneously, I occasionally miss the deadlines. I just try to ask for consideration from my teachers to extend it, and if they do, I give my best to submit within the extended *time.*"	Missed deadlines	

As displayed in Table 4.3, the findings have shown several influences that are worthy noting about. First, although engaging in mobile games, the participant still manage to attend classes regularly and submit outputs on time, "I attend classes regularly not unless if there other responsibilities I have to fulfill at home. As much as possible, I also submit my outputs and assignments on time," he stated. Aside from it, he even volunteer on recitations, "If there are recitations, and I have an idea about the question, I sometimes volunteer to answer. I can also respond to the follow-up clarifications of my teacher since I really try to listen and understand every discussion," he further explained.

To support and confirm this claim, the statement of the participant's teacher was used as basis. "I can attest that he indeed regularly attend our online classes since he usually participate and even volunteer during recitations," his teacher said. If ever he has absences, the teacher was certain that those are very minimal. The online classes that they do is not only limited to the synchronous virtual classes that is conducted through google or zoom meetings, they also have what they call supplemental teaching through messenger chat groups where students can ask questions and address clarifications especially on the activities that they find hard. The teacher further affirmed that, "He is also one of the active participants of our chat groups. That's why for the most part, I can consider him to be active both in our synchronous and asynchronous online classes."

Through the interview done with the teacher, It is also confirmed that the participant is consistent in submitting outputs. When asked about the quality of such outputs, the teacher responded that, "I am satisfied with the quality of his outputs. I can say that he is able to meet the intended outcomes. I can also see the expectations I have set from the quality of the outputs he submits." However, in contrast to what the respondent said, the teacher somehow refuted a part of the student's claim. He indeed submits his outputs consistently, but not all of them are submitted on time. Nevertheless, this was acceptable for the teacher because according to her, "Although sometimes there are backlogs, he still guarantee that at the end of the quarter or semester, he is able to complete the requirements."

The teacher believes that mobile games do not have evident influence on his academic performance since his grades does not completely alter. "I have also been his teacher in Grade 10 and if I will be comparing

his grades, I can say that it is stable. I'm not really sure if it has increased or decreased but most probably, there is no apparent shift. For example if he got 87, next quarter he would have 86 or 88. There is only a very minor and negligible changes," she expounded. According to her, if there is an evident change that she could perceive that might be the improvement on the participant's social skills. She continued, "I don't know if this can be considered as one, but if there is an effect I think that it is a positive one because based on my observation, he really maintains a good social interaction skill unlike before. He does not hesitate to express himself, approachable, and is also responsive especially online." As what was discussed earlier, the participant chose to play mobile games because of his need for social interaction, which unknowingly resulted to him being socially active online. The teacher has also emphasized that this behavior is evident from the way he interact with the class, and to her as his teacher, "We are also having personal interactions sometimes through private message since he is one of the students who approaches his teachers, asking questions or addressing his concerns," she further explained.

Furthermore, the participant has also admitted that he plays mobile games before or after attending online classes or answering modules. Because of this, he becomes more enthusiastic to do better in his studies especially when he wins a game. As he has said, "Whenever I am able to win the match, I get excited to eventually finish my classes and pass the activities so that I can again go back to play games. It serves as my driving spirit that motivates me to do well." In this regard, it can be implied that mobile games can possibly reinforce a student's academic performance, motivates him to accomplish his responsibilities in school, and eventually pushes him to do better.

However, despite of an almost positive result, the researchers have found out that mobile games can also undermine a student's academic drive specifically when they do not acquire the outcome they were expecting from the game. This was evident on the participant's statement, "When I lose a game, of course I get frustrated but I still make sure that it do not affect my studies for me as well not to increase the disappointment I feel." It's a good thing that despite such disappointment, a student can still choose to look for ways not to compromise his studies. In this regard, the participant tries to retrieve himself from such frustration by playing another one to three match after attending the class or after accomplishing a certain task.

A more distractive effect is also apparent from the data acquired, specifically that mobile games encourages procrastination. The participant has stated that, "When there are activities that we should answer, especially if the deadlines are still far, I sometimes set them aside and choose to play mobile games instead." Because of the excitement and eagerness to win the game, a student may occasionally miss outputs or delay the submission of tasks. Luckily, this do not immediately endanger their grades as teachers are expected to become more lenient and extend deadlines during this difficult times so that students can accomplish all the requirements may it be on time or not.

Limitations of the Study

Since this study only involved a single case, the generalizability of the findings may not be possible to other settings. Future studies with a larger number of cases in different grade levels is recommended so that a comparison of cases is possible. The limitations of purposive sampling should also be considered. Data in this study reflects the perspective of a specific individual who volunteered to share his case. Hence, this is not

representative of all senior high school students who play mobile games, nor does it represent the case of individuals who chose not to participate in this study. During the investigation, the researchers have only interviewed both the primary and secondary participants within an hour due to the limited time available, and were only able to interview one teacher affiliated to the main participant. Additionally, the main participants' sense of freedom and comfort to share information may have been repressed by the parent's presence during the interview. Finally, the participant in this study was a male who is also a consistent academic achiever, including other sex or gender with a different academic background may have produced different results and overall findings.

5. Summary

The pandemic has contributed a lot to the modifications that occurred in our education system, the traditional face-to-face learning setup transformed swiftly to distance and online learning education, with the goal to continue the education of students. However, the shift of classes into online learning modalities have provided students an ample time to spend in their homes. Thus, various personal activities and hobbies have emerged which includes students' involvement in mobile gaming. The innumerable hours that students' spend in playing mobile games has raised concerns that these activities might come at the cost of their academic performance. Although previous studies have already shown a variety of positive and negative effects of mobile games, only few of them were conducted to investigate the influence of mobile games in a student's academic performance in the era of online learning. Hence, this defined lack of investigation compelled the researchers' interest to conduct the present study. To address this gap, the researchers sought to find out the causes or the reasons why a student chooses to engage in mobile gaming, identify whether or not there is a tendency for them to neglect their academic responsibilities in exchange of mobile games, and determine how it influence their academic performance.

In order to choose who will be the main participant of study, the researchers utilized a purposeful sampling technique through a preliminary survey where each respondent where asked the number of hours they spend in mobile games everyday, and whether or not they are interested to participate in the study voluntarily. The main method used to investigate the case was through a semi-structured interview with the student which is the main participant and other secondary participants including his parent, teacher, and a friend. To increase the validity of the study, the researchers have invited three experts to validate the questions used for the interview. The researchers then revised and restructured the questions according to the comments and suggestions of the validators. An inductive approach to thematic analysis adapted from Braun and Clarke (2008) was used in the analysis process where significant interview extracts were collected from the transcribed data, and a corresponding code was assigned to each interview extract. Identified codes were then organized and grouped into themes relevant to the questions and purpose of the study. These themes sought to provide an in-depth discussion of the case and eventually found answers to the questions under study.

All the research questions have essentially been answered by the results. For instance, with regard to the first question, the researchers identified three causes or reasons why a student is playing mobile games, such reasons include boredom, their desire to relieve and escape from stress, and to satisfy their need for social interaction. Based on the findings and relative to the second research question, this study also revealed that there is a minimal tendency for a student to neglect or ignore his studies and other school-related responsibilities

due to mobile games. A student may engage in mobile gaming activities and still successfully comply with his academic responsibilities as long as he is in full control of himself, manages his time well, knows what his priorities are, and is entirely aware of his limitations. Finally, the present study asserted that playing mobile games can be a double-edged sword. It can either reinforce academic behaviour which happens when students wins the game which will then motivate them to do better. Consequently, it can also undermine their academic drive especially when they are given an excessive amount of time needed to accomplish tasks and activities which will eventually encourage them to procrastinate.

Conclusions

Overall, this study has found that the detrimental influence of mobile gaming on a student's academic performance seem to be quite small. Playing mobile games does not necessarily mean that students will neglect or set aside their studies. Despite engaging in mobile gaming, a student can still perform his academic responsibilities, attend classes regularly, consistently submit outputs, and actively participate during discussions and recitations. All of these are possible if a clear boundary between their mobile gaming habit and academics is established, and that if students are aware and will stick to their limitations.

Furthermore, the findings of the present study has also affirmed the idea of Robert Baron's (1986) Distraction-Conflict Theory which argues that engaging in mobile games will create attentional conflict between attending to such habit and performing academic responsibilities only when a person feels a strong urge, desire, or obligation to pay attention to the "other" object when performing their tasks. This conflict only occurs when the pressure to attend to each input is equal and when an individual's capacity of personal restraint is inadequate. In this regard, the results of this study further contends that when a student is in control of himself and does not devote a strong urge and desire to play mobile games, attentional conflict will not occur and that his academic performance will not be impaired. As long as it is ensured that a student does not pay greater attention to mobile games than his academic responsibilities online, there is nothing to be worried about.

Recommendations

Based on the results and findings of this study, the following recommendations are drawn:

1. **To the Learners**. They have to set appropriate time limits allotted for their personal activities and habits. They have to make sure that there is a clear boundary between such habits and their responsibilities.

2. **To the Teachers**. The findings of this study poses a challenge to the teachers to make their classes more interactive and socially active may it be physical or online so that students will not resort to look for means that will satisfy their social needs. They should also provide appropriate guidance and sufficient motivation to their students. Although is it proper to be lenient in assigning deadlines, it is also important that these are set justifiably so that students will not spend excessive time on activities that are detrimental to their studies.

3. **To the Parents and Guardians**. They should regularly check on the online activities that their children choose to engage in, especially in this age of advanced technology. They have to ensure that their

children are spending enough attention on their studies, and that do not spend excessive time on distractive activities. As much as possible, they should help imposing limitations and boundaries, so that their children are aware of their priorities and knows where should their attention be.

4. **To the Future Researchers**. The findings of this study can be reproduced or replicated using different variables and sample size to broaden the generalizability of the results. Since this study only investigated a single case, future studies may embark on the same subject yet with a larger number of cases or participants in different grade levels so that a comparison of cases can be done. Inclusion of participants in different sex or gender, with diverse academic backgrounds, and those that spends varying amount of hours in mobile games is also recommended in order to determine if the results will correspond to the findings of this study or will vary due to the specified changes. They could also try to track the academic progress of students who play mobile games in comparison to other students who do not.

References

Abaidoo, A. (2018). Factors contributing to academic performance of students in a Junior High School. Retrieved from https://www.grin.com/document/450284.

Baron, R. S. (1986). Distraction-conflict theory: Progress and problems. Advances in Experimental Social Psychology. 19: 1–39. doi:10.1016/S0065-2601(08)60211-7. ISBN 9780120152193.

Braun, V., Clarke, V. (2008) Using thematic analysis in psychology. Qualitative Research in Psychology. doi: 10.1191/1478088706qp063oa

Dumrique, D., Castillo, J. (2018). Online gaming: Impact on the academic performance and social behavior of the students in Polytechnic University of the Philippines Laboratory High School. Retrieved from https://knepublishing.com/index.php/Kne-Social/article/view/2447/5372. doi: 10.18502/kss.v3i6.2447.

Garcia, K., Jarabe, N., Paragas, J. (2018). Negative effects of online games on academic performance. Pangasinan State University. Volume 3, Issue 1. P-ISSN: 2672-2984. E-ISSN: 2672-2992. Retrieved from www.sajst.org.

Gentile, D., Choo, H., Liau, A., Sim, T., Li, D., Fung, D., & Khoo, A. (January, 2011). Pathological video game use among youths: A Two-Year longitudinal study. doi:10.1542/peds.2010-1353

Hall, S. (2020). How COVID-19 is taking gaming and esports to the next level. Retrieved from https://www.weforum.org/agenda/2020/05/covid-19-taking-gaming-and-esports-next-level/

Heiden, J., Braun, B., Müller, K., & Egloff, B. (2019). The association between video gaming and psychological functioning. doi: 10.3389/fpsyg.2019.01731

Kassarnig, V., Mones, E., Bjerre-Nielsen, A. (2018). Academic performance and behavioral patterns. EPJ Data Sci. 7, 10. https://doi.org/10.1140/epjds/s13688-018-0138-8.

Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. Journal of Family Medicine and Primary Care, 4, 324-327.

Robinson, O. (2014) Sampling in interview-based qualitative research: A theoretical and practical guide. Qualitative Research in Psychology, 11:1, 25-41. doi:10.1080/14780887.2013.801543.

Schidmt, S. (2020). Distracted learning: Big problem and golden opportunity. Journal of Food Science Education. Volume 19, p. 278-291. https://doi.org/10.1111/1541-4329.12206.

Shiers, J. (2020). Expert advice on gaming addiction in young people and children. Internet Matters. Retrieved from https://www.internetmatters.org/hub/news-blogs/expert-advice-on-gaming-addiction-in-young-people-and-children/.

Statista Research Department. (August, 2021). Gaming industry in Asia Pacific - statistics & facts. Retrieved from https://www.statista.com/topics/2196/video-game-industry-in-asia/#topicHeader__wrapper.

Wood, R., Griffiths, M., & Parke, A. (2007). Experiences of time loss among videogame players: An empirical study. CyberPsychology and Behavior, 10(1), 38-44.

Yin, R.K. (2003). Case study research: design and methods. Sage. Thousand Oaks, California.