High School MMORPG (Massively Multiplayer Online Role-Playing Game) Players: Profile, Collaborative Behavior, and Empathy

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There has been a rise in the number of high school students getting hooked on Massively Multiplayer Online Role-Playing Games (MMORPG). At present, there are 3.03 billion gamers worldwide, about 28.72 million of them are Filipino MMORPG players and 48% are between the age group of 13-17 years old ("Online gamers in the Philippines 2022," 2022a). Because MMORPGs are games in which players compete in teams this research focuses on them to look at whether collaborative behavior and empathy are present in the individuals who play the game in face-to-face settings. The research utilized the mixed-method explanatory design to determine this. Three sets of questionnaires measuring gaming habits, motivation, and adolescent empathy quotient were administered to 378 high school MMORPG players in Quezon City. Face-to-face collaborative classroom activities were conducted among 30 selected high school gamers and their collaborative behavior was assessed by five teacher-observers. Focus group discussions (FGD) with the students and interviews with the teachers and parents were also conducted. The MMORPG gamers were found to have early and high levels of exposure to online gaming, proficient collaborative skills, and low empathy. There was no significant relationship between collaborative behavior and empathy.

Keywords: massively multiplayer game, online gaming, role-playing game, collaboration, empathy

Introduction

Generation Z's[1] definition of play has shifted from physical activities to virtual play (Granic et al., 2013) or online gaming, which is an activity that mainly adolescents enjoy doing (David-Ferdon & Hertz, 2007 and Ko et al., 2005, as cited in Hellström et al., 2015). A big number of gamers belong to those in the adolescent stage ("*Online gamers in the Philippines 2022,"* 2022a; Toral, 2007), a stage in which established habits may have lasting impact on and consequences in adult life (Allemand et al., 2015). Compared to other age groups, adolescents are found to have a higher tendency to be immersed in online games (Blinka, 2008). According to studies conducted in different regions of the world, the most excessive gamers play Massively Multiplayer Online Roleplaying Games or MMORPGs the most (Jackson, 2011, as cited in Hellström et al., 2015; Griffits et al., 2004; Ko et al., 2005), and the top ten online games played by online gamers are all MMORPG (Eden, 2020; Gullen & Plungis, 2013), such as RAN online, Ragnarok Online, and World of Warcraft ("Online gaming market in the Philippines," 2022b).

The MMORPG is a unique type of online game with a rich narrative, unpredictable environment, creation of virtual identity, and other features such as chat rooms and virtual space all creating endless possibilities (Steinkuehler, 2010, as cited in Li, 2019; Meredith et al., 2009). Here, the player creates a virtual character which is represented by a graphic depiction called an avatar. While some recurring themes in these games are battles and fights, a notable theme is the formation of virtual reality, space, and identity. Identity may vary among different kinds of professions, race, etc. A player can chat, interact, and correspond with a vast number of other human players all over the world, who are also represented by virtual characters. Their character can evolve and improve abilities, moving from one level to a higher level. A player's choice could also impact the game directly, creating endless possibilities and experiences (Griffiths et al., 2003, as cited in Caramat, 2013).

With 200 million MMORPG players in Asia Pacific alone, and 28.72 million MMORPG gamers in the Philippines (Toral, 2007; Gullen & Plungis, 2013), MMORPGs have undeniably become popular among adolescents. This number grew during the pandemic: In 2018, there were 2.49 billion gamers. In 2021, however, this number grew to 3.24 billion gamers all over the world, with Asia having the largest share of 1.48 billion (Clement, 2022b). Gulbe et al. (2016), who conducted a study on online gaming in a school campus in the Philippines, found that student online gamers spend much of their time playing MMORPGs. In an online survey conducted by Rakuten Insight in the Philippines ("Philippines Frequency of Playing Online Games," 2022c), out of 9,301 respondents who played online games, 46% played online games daily. Thirty nine percent spent between one to two hours on one gaming session, 6% played more than five hours.

Importantly, MMORPG is a complex and highly-social video game, as compared to other types of video games (Granic et al., 2013). This collaborative feature of MMORPG may also be the main reason that some MMORPG players play for long hours (Hellstrom, 2008). How the players interact, communicate, cooperate, collaborate, and strategize with their teammates is crucial in order to win the game (Ducheneaut & Moore, 2004). MMORPGs require a substantial amount of time for an individual's avatar to progress and may encourage players to feel emotional attachment (Cam, 2006) and empathy for characters or scenarios by design (Jerrett et al., 2020). Moreover, MMORPG players need to communicate, take the perspective of playmates, and build relationships, all of which are empathy-related activities, in order to be successful in this group game (Farber & Schrier, 2018). Both collaboration and empathy are beneficial skills in the real world, which raises the question of whether collaborative skills and empathy are evident among gamers, not only in the virtual, but also in the real world setting.

Thus, this research aimed to look into the profile of high school MMORPG players in order to determine what type of collaborative behavior and empathy they displayed.

[1] Born between 1997-2012

Specifically, it aimed to answer the following questions:

1. What is the profile of high school MMORPG players in terms of:
   a. sociodemographic characteristics?
   b. gaming habits and gaming motivations?
   c. academic performance and school attendance?
2. What are the characteristics of high school MMORPG players in terms of:
   a. collaborative behavior?
   b. empathy?
3. Is there a relationship between empathy and the collaborative behavior of MMORPG players?

Methodology

Research Design

The research utilized the mixed method sequential explanatory design, where quantitative data was first collected and analyzed, followed by the collection and analysis of qualitative data. In the collection of quantitative data, three sets of questionnaires were administered among 378 high school MMORPG players from one private school and one public school in Quezon City who were purposively selected via room-to-room surveys. The details of the questionnaires are discussed in the next section of this paper. The researchers also obtained data on the participants' academic grades and school attendance from their schools.

For the collection of qualitative data, collaborative activities were conducted in the classes of 30 selected high school gamers (15 from the public school and 15 from the private school). The research participants' collaborative behavior was observed by five teachers using the New Tech Network Collaboration Rubric (NTN, 2017), used with consent from the proponents who work with various schools in different states to help develop innovative instructional approaches. The rubric gauges whether the members participate in accomplishing the task, collaborate with the team in developing a plan for task completion, and exhibit active listening, engagement, and ownership over the completion of the task. FGD with the students and interviews with the teachers were also conducted to gain insights from the participants' collaborative behavior and empathy.

Participants of the Study

Because Metro Manila has an increasing number of internet users joining the pool of online gamers (Labana et al., 2020), the largest city in Metro Manila, Quezon City, was chosen as the locale of the study, which is home to 4.3% of the total enrolled population in the country (Florido, 2006; National Statistics Office, 2017; Philippine Statistics Authority, 2017). The selected public school had the biggest student population (16,000) in Quezon City, while the chosen private school is the most-populated high school accredited by the Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU) in the area (Guidaben, 2015; "Top 15 public schools with biggest population," 2015; DepEd), with a population of 1,118 students. These two schools were close in proximity, which was an essential factor in controlling geographical and cultural variation in the data obtained for the study.

The target sample for the survey was at least 300 students, 150 from the private school and 150 from the public school. A simple room-to-room survey was conducted to determine who the MMORPG players per class were. The junior and senior high school gamers were requested to raise their hands to identify themselves after they were informed that a research on MMORPG players would be conducted. Using a sample size calculator, ("Sample size calculator," 2004) with a 95% level of confidence (1-α) and 5% margin of error (α), the researcher got a total of 189 sample size (*n)* from the private school. The same sample size was taken from the public school, totaling 378 MMORPG players from both schools. Permission from the parents

of the participants was obtained and the participants were assured that none of their identities would be revealed. They were also told that they could decline participating at any point in the study.

The 189 MMORPG players were randomly selected from the list of players per level, which was generated during the room-to-room survey. From the total sample of 378 students from the private and public schools, 30 students became participants in the collaborative activities and FGD. An informed consent form was given to these participants and signed by their parents before they participated in the study.

Pre-Data Collection

Preparation of Questionnaires

Prior to data collection, the Gaming Habits (Caramat, 2013), Online Gaming Motivations Scale (Yee, 2006), and Adolescent Empathy Quotient (Auyeung et al., 2012) were translated to Filipino and were reviewed by three adult MMORPG players and three Filipino translators for clarity and face validity of the questionnaires. The researchers were able to obtain consent to use the said questionnaires from the developers. Then, a pilot test was conducted among 30 high school students from another school to ensure that the questions were easy to understand. This pilot test was also done to further validate the questionnaire and help weed out weak, unclear, and irrelevant questions. Principal Component's Analysis was conducted and Cronbach's Alpha was obtained from the data gathered in the pilot test to determine the underlying components being measured or represented by each survey question, also called the component loadings (Collingridge, 2017). This was done by looking into common themes in the questions that loaded in the same components. These questions were then combined, compared, and analyzed.

The items were finalized after the researchers conducted Principal Component's Analysis and obtained Cronbach's Alpha from the data gathered in the pilot test. Table 1 shows Cronbach's Alpha for the three components in the Online Gaming Motivations Scale, which was cross-culturally validated by Yee et al. (2012), and the two components in the Adolescent Empathy Quotient Questionnaire (Auyeung et al., 2012), a self-report scale based on Baron-Cohen & Wheelwright's (2004) Empathy Quotient scale for adults, which was tested by Lawrence et al. (2004) for reliability and validity.

Table 1

Reliability Statistics on Gaming Style and Empathy Quotient Items

Component	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Gaming Motivation Items		
Achievement	.915	.916
Social	.848	.852
Immersion	.814	.815
Empathy Quotient Items		
Cognitive Empathy	.879	.881
Affective Empathy	.838	.838

Data Collection

Quantitative Data Gathering

The translated questionnaires were administered to a total of 378 MMORPG players in public and private schools. The first given was the Gaming Habits questionnaire (Caramat, 2013), which included demographic questions (respondent's family background, educational background, age, and sex) and the type of games that the respondent played, gaming history, frequency of gaming, gaming peers, and their perceptions about the virtual world of MMORPG.

Next given was the Online Gaming Motivations Scale, which gauged whether the players played for: (1) achievement; (2) social factors; or (3) immersion. The subcomponents of achievement were: a) advancement, which is the motivation to accumulate status, progress, and gain power in the game; b) mechanics, which is trying to discover the underlying rules and system of the game in order to optimize performance; c) competition, which as the name implies, motivation to compete with others. The social subcomponents were: a) socializing, or the motivation to chat and collaborate with other players; b) relationship, which refers to forming meaningful relationships with other players; and c) teamwork, or getting satisfaction from participating in a group effort. The immersion subcomponents included: a) discovery, which refers to exploring things such as items or additional rewards in the game; b) role-playing or creating an avatar with a background story and building a story with other players as they interact; and c) customization or the freedom to change the appearance of their avatar; and d) escapism, which refers to going to the virtual world to avoid dealing with problems in the real life (Yee, 2007). The ten subcomponents were derived from factor analysis of the Online Gaming Motivations Scale (Yee, 2007).

Then, the Adolescent Empathy Quotient (Auyeung et al., 2012) was administered. Lawrence et al. (2004) posit that empathy has two main dimensions, namely cognitive empathy, which is the "intellectual/ imaginative apprehension of another's mental state," (p. 911), and emotional empathy, which refers to the "emotional response to...emotional response of others" (p. 911). The Filipino-translated version of this instrument loaded on these two factors.

Implementation of Face-to-Face Collaboration Activities

Three (3) collaboration activities were conducted face-to-face to test whether the students would also manifest in real life the collaboration they practice when playing MMORPGs. All the collaboration activities involved a problem to be solved or a goal to be accomplished as a team. The groups were given five minutes to plan for the strategy and ten minutes to execute the plan.

To measure the collaborative behavior of students, the rubric created by the New Tech Network (NTN, 2017) was used. This tool was created based on various characteristics of collaborative skills and behaviors, which are: (1) interpersonal communication, (2) commitment to shared success, and (3) team leadership and initiative. Five teachers were recruited as observers and assessed the participants' collaborative behavior using this point system: emerging (1 point), developing (2 points), proficient (3 points), and advanced (4 points) (NTN, 2017).

Different subject interests and abilities of students were taken into consideration in choosing the collaborative activities. One collaborative activity was the creation of the Tallest Tower, where students were asked to create the tallest tower by using only straws and masking tape provided to them. Another was the Photo Story activity, where students were tasked to create a story using five photos provided by the facilitator. The last one tested the students' ability to communicate their opinions and stand on social issues.

In the collaborative activities, three groups were formed, with five members each. In the private school, there were 15 volunteer-participants from grades 7 to 11, aged 12 to 17. The facilitator ensured that each group had members from different grade levels. In the public school, however, only 15 grade 9 students were allowed by the administration to participate since students from other grade levels had other activities during the research study. The same set of observers participated in the collaborative activity in the private school and the public school. Each of them was assigned to observe three students and rate each student using the collaboration rubric. They were also asked to write down observation notes on the students' interpersonal communication, commitment to shared success, and team leadership and initiative.

Focus Group Discussions (FGD)

Two focus group discussions (one in the private school and one in the public school) were conducted on

the same day. Twelve (12) participants from different grade levels were asked to participate. This is the maximum recommended size for a group discussion (Tynan & Drayton, 1988). The same was done for the public school students, but only grade 9 students participated in both the collaborative activities and FGDs.

Questions about reasons for playing MMORPG and its positive and negative effects on the lives of the players were prepared prior to the FGD, but follow-up questions were also asked during the discussions. Other questions asked pertained to the popularity of MMORPG among adolescents and their immersion in the virtual world. Meanwhile, questions asked during the interviews with three teachers and three parents, who were key informants in the study, were similar to the FGD questions. The interviews looked into their perspective on MMORPG players' characteristics, collaborative behavior, and empathy.

Data Analysis

Descriptive statistics were used to present the profile of high school MMORPG players in terms of age, grade level, gender, number of siblings, occupation of parents, and gaming history. Gaming habits such as average gaming hours in a day or week, place of gaming, amount of money spent on gaming, preferred MMORPGs, and reasons for gaming, were also computed in the study.

The scores in the collaborative behavior and empathy were presented along with related responses from the FGD and interviews. Answers in the FGD were used to elaborate the quantitative data gathered. The researchers also looked into the correlation between the empathy scores and collaboration scores to examine the relationship between the two. Finally, Spearman's correlation coefficient (ρ, also signified by r), was used to measure the strength and direction of relationship between ranked variables ("Spearman's Rank-Order Correlation," 2018).

Results and Discussion

The Profile of the High School MMORPG Players

The first phase of the study was a survey on the profile of high school MMORPG players in terms of sociodemographic characteristics, gaming habits, gaming motivation, school attendance, and academic performance.

Sociodemographic Characteristics

Table 2 shows a summary of the sociodemographic characteristics of high school MMORPG players. The table shows that there were MMORPG players in grade levels 7 to 11. The majority of the players (81%) were males. This gender difference in high school MMORPG players supports the research findings of Li et al. (2011) and Hoeft et al. (2008). Hoeft et al. (2008) explained that males showed greater functional connectivity and activation in their mesocorticolimbic system (sometimes called the "reward pathway") when they play computer games, compared to females. This gender difference in the neural processes during gameplay makes the nature of digital online games more appealing to males than to females. Another explanation for this gender difference is that men, generally, build more things and they tend to be drawn to owning and working on their own virtual property through MMORPGs (Guadagno et al., 2011).

Table 2

Sociodemographic Characteristics of High School MMORPG Players (n = 378)

Characteristics	Private School *n = 189*	Public School *n = 189*	Total *n = 378*	
Grade Level	f	f	f	%
7	43	65	108	29
8	46	31	77	20
9	32	62	94	25
10	30	19	49	13
11	38	11	49	13

Average Age	*M* 15 years old	*M* 14 years old		
Gender	f	f	f	%
Male	152	153	305	81
Female	37	36	73	19

Meanwhile, all adult interviewees agreed that generally, the students as of the date of interview were exposed to gaming. Interviewee 1E, an educator for almost two decades, experienced teaching in both private and public schools. According to her, millennials are knowledgeable about computers, but children from this era are not just considered as "knowledgeable" but "digital natives." She said, "these children have been raised in and with digital technology. Even if they are not allowed to play computer games at home, they still see other children at school or in their communities who are gamers."

Gaming History and Gaming Habits

Table 3 presents a summary of the dominant gaming habits of both private and public high school MMORPG players. This shows that on average, the participants started playing at the age of 10.5 years old. The main source of money that they used for playing these games was their school allowances. They spent around 91 to 93 pesos a week playing MMORPG, and an average of 4-5 hours per day, 5-6 days a week playing these games. The majority of private school gamers played at home, while the majority of public school gamers played in computer shops.

Table 3

Gaming History and Gaming Habits of High School MMORPG Players

Description	Private School	Public School
Average age of starting playing MMORPG	10 years old	11 years old
Top three MMORPGs that they play	League of Legends DOTA Dragon's Nest	League of Legends Crossfire DOTA
Top three reasons for playing MMORPG	To be entertained (74%) To bond with friends (48%) To feel pleasure from winning (35%)	To be entertained (62%) To bond with friends (36%) To find new friends/ someone to talk to (21%)
Average spending in a week	92.78 pesos	91.81 pesos
Top three sources of money spent in playing MMORPG	Allowance from parents (45%) Money from Friend/Fellow Gamer (15%) Part-time Job (3%)	Allowance from parents (61%) Money from Friend/Fellow Gamer (20%) Part-time Job (8%)
Average gaming hours in a day	5 hrs	4 hrs
Average number of times (days) in a week that they play MMORPG	6 times (days)/week	5 times (days)/week
Top three places where they play MMORPG	Own Home (68%) Computer Shop (12%) Home & Shop (11%)	Computer Shops (73%) Own Home (21%) Friend's Home (1%)

Despite having different respondents, these findings support Caramat's study (2013), which revealed that online gamers, on average, start playing between the ages of 8 and 11 years old. They play for more than 12 hours a week and their gaming hours do not decline when they reach their adolescent years. In the study of Clement (2022a) on the impact of the coronavirus on the gaming industry worldwide, it is found that people who stayed at home during the lockdown turned to video games as a source of entertainment. As a result, the video game and eSports industries experienced a boom because of the COVID-19 pandemic. There has been no study in the Philippines during and after the pandemic on this, but in a 2020 survey of 1,000 MMORPG gamers in America, the respondents reported playing three to six hours per day (Sullivan, 2020). In a survey conducted in 2021 by Clement (2022c) among 4,000 respondents from selected countries (South Korea, China, India, Vietnam, Indonesia, the United Kingdom, Germany, and the United States), it was found that 10.4% of 18 to 25-year-old online gamers played more than 20 hours per week.

During the FGD, Participant 1B explained that many gamers become so engaged in playing that sometimes they do not get enough hours of sleep. He shared, *"May pagkakataon na gabi-gabi ay puyat. Minsan 3:00 am na natutulog."* (There are instances when I sleep late every night. Sometimes I even sleep at 3:00 am.) Murphy (2012) explained that the concept of "flow" which was coined by Csikszentmihalyi (1990) may be the reason that gamers cannot seem to stop once they are already engaged in gaming. According to Csikszentmihalyi (1990), flow is the state of full immersion, wherein there is a balance of challenge and skill. In playing MMORPG, the players continue to gain new challenges and they increase their skill set as they advance to the next level. There are clear tasks, feedback, balanced and attainable goals, and concentration (Murphy, 2012). Thus, gamers feel a sense of achievement in playing MMORPG.

The common top MMORPGs that the public and the private school respondents played were *League of Legends and DOTA.* The participants of the focus group discussions explained that these games were the most popular among adolescents because of their availability in computer shops and their collaborative nature.

Participant 11A explained, "*Ito 'yung pinaka-accessible sa shops at millions na ang players dito. May mga international tournament, lalo na sa League of Legends. Parang Olympics na rin."* (These [games] are the most accessible in shops, and there are already millions of players of these. There are international tournaments, especially for League of Legends. The [tournament] feels like the Olympics.)

In both schools, most respondents played to be entertained (74% in private school and 62% in public school). Other reasons for playing MMORPG included the following: (1) to learn; (2) to bond with peers; (3) to find new friends and have someone to talk to; (4) to escape and temporarily forget personal responsibilities and problems; and (5) to win (students report that they feel happy every time they win).

On average, private school MMORPG players spent 92.78 pesos, with a standard deviation of 216.70, in playing MMORPG in a week. The measure of variation is very high since most of these students either did not spend anything at all or spent too much. Those who spent too much reported that they bought items in the virtual world. Public school players, on average, spent 91.81 pesos, which is only one peso less than what private school students spent on average. Despite the difference in socioeconomic status, players from the two schools spent almost the same amount of money on gaming. Several public school students reported that they sometimes skipped meals in order to have money to play MMORPGs.

Nearly half (45%) of the private school MMORPG players got the money that they spent playing from their school allowance. During the FGD, several gamers stated that they spent their money on weapons, accessories, and other items. The others did not need money since most of them played at home. Meanwhile, 61% of public school gamers also got the money that they spent on playing MMORPG from

their school allowance. They used the money to play online games in computer shops. While the majority of the private school MMORPG players (68%) played online games in their homes, the majority of the public school MMORPG players (73%) played in computer shops.

Participant 12A, a private school student said, *"Ginagalingan na rin ng mga [game] developers na gumawa ng games ngayon. Minsan, mapipilitan kang bumili. So totoo rin na napapagastos ako sa games. Pero [kailangan lang ng] self-discipline."* (Game developers are also innovating and updating their game designs. Sometimes, we are forced to spend. The truth is, I spend money on games. But [you just need] self-discipline.) However, while some players spent money on online gaming, others earned money. A 14-year-old student, Participant 2B, reported that he earned money from playing MMORPG when he won a bet or when he sold gaming items online.

Gaming Motivation

Table 4 shows the Dominant Gaming Motivation of High School MMORPG Players. It shows that more than half (55%) of the participants played for achievement, meaning most were mainly driven by in-game advancement, competition, and optimization of character performance. One-fourth of the participants played for immersion (26%), meaning they were interested in discovering the virtual world, and immersing themselves in the stories and characters in the game.

Table 4

Dominant Gaming Motivation of High School MMORPG Players

Dimension	Private School n = 189		Public School n = 189		TOTAL N = 378	
	f	%	*f*	%	*f*	%
Achievement	119	63%	89	47%	208	55%
Socialization	30	16%	41	22%	71	19%
Immersion	40	21%	59	31%	99	26%

Most players were motivated by mechanics of the game, competition, and advancement. Some of them said that online gaming boosted their self-confidence and self-esteem, that when their gaming status and rank were high, they became popular and respected. This could be one reason why some students became hooked on online gaming. They played to increase their rank because status in the virtual world may become parallel to status in the real world.

The responses of participants in the FGDs support these results. Some students reported that they played to be entertained and to relieve stress. Participant 4B, a 15-year old public school student said, *"Nagdadala ng labis na kasiyahan ang paglalaro ng MMORPG. Pampawala ng problema at pagod."* (Playing MMORPG brings great happiness. [It is a way to] forget problems and relieve stress.) Participant 2A, a grade 7 private school student attested to this, saying, "I play to be entertained. Playing MMORPG relieves stress." Moreover, when asked why they play MMORPG, almost all participants from the public school said that this is a good strategy *"para makatakas sa gawaing-bahay"* (to escape from household chores).

Playing MMORPG to relieve stress and to escape from household chores are also among the motivations for online gaming, cited by Caramat (2013) and Yee (2006) in their study. This is what Yee (2006) called "escapism," which falls under the "Immersion"

component. This means that some MMORPG players play online games to escape reality and avoid reality problems (Yee, 2006). Another senior high school student, 12A said, "I play for simulation. *"Yung mga horrible emotion, nilalabas ko sa game at sa iba-ibang character."* (I let out [my] horrible emotions through the game and on different characters.) Participant 13A agreed to this, saying, *"Binubuhos ko 'yung galit ko 'pag naglalaro ng MMORPG."* (I release my anger when I play MMORPG.) Again, this is another form of escapism (Yee, 2006).

On the other hand, Participant 5B, a 15-year-old student, said that she gained a lot of friends from playing MMORPG. Participant 7B added that when playing MMORPG, *"maraming kaibigan, may mga guild, maraming nakikilala"* (there are many friends, there are guilds, you meet a lot [of people]). Playing for the social aspect of the game is what Yee (2006) calls the "Social" motivation for gaming. This involves socializing and building relationships across the virtual world, supporting the quantitative data from the students' responses to the Gaming Motivation questionnaire.

Responses of high school MMORPG players in the FGD also established how MMORPG could be a platform for collaboration. All these support the research study of Voulgari and Komis (2011) who explained that collaborative interactions such as communication, coordination, and teamwork among players are integral to attaining the game's goals. Specifically, the statements of students 5B and 7B, support the account of Voulgari and Komis (2011) that these collaborative relationships may extend beyond the game through different forms of social media. McCeery et al. (2011) explained that online gamers engage in high levels of social activity. These gamers continue to be immersed in virtual reality because the game allows their character to evolve, improve abilities, and move to higher levels (Griffiths et al., 2003, as cited in Caramat, 2013).

Academic Performance

Although academic performance cannot be solely determined just by looking into the grades of the students, a student's general average still says something about how they perform at school. Table 5 shows the general average and number of absences of high school MMORPG players.

Table 5

Academic Grades and Absences Per School Year of High School MMORPG Players

Dimension	Private School n = 189	Public School n = 189	TOTAL N = 378
Academic Grades Mean	86.26	79.82	83.04
Absences Per SY Mean	3.74	12.16	7.95

Based on the data obtained from the two schools, the mean general average of those in the private school was 86.26%, while the mean average of those in the public school was 79.82%. This implies that particularly, the public school MMORPG players did not perform well in their academics. Moreover, the mean number of absences of MMORPG players from the private school is 4, while the mean number of absences of public school gamers is 12. Educators who were interviewed for this study said that they witnessed a lot of public school students failing to submit school requirements and performing poorly in school. The reasons for absences of the public school students varied. There were students, known by their peers as "addicted to gaming," who would be absent just to play in nearby computer shops. While their private school counterparts had their own computers at home (68%), most public school students (73%) rented computers in shops. The popularity of online gaming has led to the establishment of numerous computer shops, some of which are built near schools. In 2010, the Department of Education released DepEd Order no. 86, which prohibits students from going to computer shops and

other similar establishments during class hours to deter them from skipping classes. However, a case analysis conducted by Irinco and Sioco (2014), revealed that online gaming is number one on the list of reasons for absence (under community-related factors) in one public school in Quezon City.

During the COVID-19 lockdown, an increase in internet use and gaming addiction was reported by several countries (Fernandes et al., 2020). In the study of Claesdotter-Knutsson et al. (2022) among 1,501 gamers in Sweden, 16 to 39-year-old respondents reported increased gaming during the COVID-19 pandemic. Further, Fernandes et al. (2020) found that the COVID-19 outbreak had an impact on the use of the internet and psychosocial well-being of adolescents from different countries. Thus, they recommended that maladaptive coping strategies such as escapism need to be reduced. Moreover, in a study among adolescent gamers conducted by Labana et al. (2020) in the Philippines, it is found that 17.7% of adolescent participants are experiencing online game addiction.

In this study, the mean general average of 83 for 378 high school MMORPG students who participated in this study is quite low. However, many students who participated in the FGD disagreed with the belief that MMORPG players skip classes and underperform in school. Fifteen-year old 4B, a public school student, said, *"Sabi nila nagcucutting daw kami at nakakasira talaga ng pag-aaral ang gaming. Pero totoo lang 'yun sa mga adik talaga [sa game], 'yung tipong mag-aabsent para makapaglaro at di na nakakagawa ng assignment. Pero wala sa mga kakilala ko ang ganun."* (People say that we skip classes and that gaming hurts our studies. But that's only true for those who are really addicted [to the game], to the point that [they] will skip school just to play and are not able to do [their] assignments. But I don't know anyone who is like that.)

The adult interviewees in this study explained that online gaming may affect students both positively and negatively. Having taught in ten schools, both public and private, one teacher witnessed how online gaming seems to have varying effects on different groups of students. He explained, "In science high schools, all gamers that I know are gifted in many aspects. Science high school gamers usually play to escape from stressful academic demands. This is the same with private schools — many online gamers are doing well, academically. But in public schools, they have a different culture. A lot of online gamers have failing grades, and they tend to forget school responsibilities."

Interviewee 4P, a parent of a private school MMORPG player, said, "*nakita ko na parang nag-widen 'yung vocabulary ng anak ko sa gaming. Nagugulat nalang kami na may mga English words siyang sinasabi na natutunan niya raw sa mga ka-chat niya tsaka 'dun sa istorya ng laro. Kaso nga lang, as years pass by, parang lalo siya naaadik. Minsan, hindi mo na mapigil; magdamag naglalaro."* (I've seen how my son's vocabulary has widened because of gaming. We're surprised that he speaks certain English words, which he says he learns from his chatmates and from the story of the game. However, as years pass by, it seems that he's becoming more addicted. Sometimes, he can't be stopped; he plays all night.)

Playing MMORPG can indeed be a platform for language learning because of its rich storyline and interactive environment (Lee & Pass, 2014). It should be noted that there are MMORPG players who collaborate and compete with gamers in other countries; thus they use an international language such as English. Sylven and Sundqvist (2012, as cited in Lee & Pass, 2014), for instance, found that those who played MMORPG for more than five hours possessed wider second language vocabularies than non-gamers. Palmer (2010, as cited in Lee & Pass, 2014), also discovered that those who played *World of Warcraft,* a type of MMORPG, are able to develop speech acts. These speech acts range from expressing apology, request, complaint, or compliment to expressing refusal. Moreover, some players have developed the use of modal verbs by playing this game (Bryant, 2006, as cited in Lee & Pass, 2014).

Collaborative Behavior and Empathy of the MMORPG Players

The second area that this research aimed to investigate covers the characteristics of high school MMORPG players in terms of collaborative behavior and empathy.

Collaborative Behavior

Based on the report of the teacher-observers, the collaborative behavior of MMORPG players in this study is described as "proficient." Someone with proficient collaborative behavior has: (1) good interpersonal communication, (2) commitment to shared success, and (3) leadership and initiative. Table 6 shows the overall mean score of students for interpersonal communication, commitment to shared success, and team leadership and initiative.

Table 6

Overall Mean Score for the Three Collaborative Components

Collaborative Component	Private School	Public School	Total
Interpersonal Communication	2.96~3	3.18~3	3.07~3
Commitment to Shared Success	2.89~3	3.09~3	2.99~3
Team Leadership and Initiative	2.91~3	3.34~3	3.13~3

According to the notes of the teacher-observers, these students contributed to productive conversations; they respected and acknowledged the ideas of others and worked to resolve conflict. They also supported others to complete the necessary work and ensure the team's success. They were not only able to monitor the team's progress and played leadership roles, but at the same time, they also could take direction from others.

In spite of this, the educators who were interviewed in this study explained that the collaborative behavior of the MMORPG players in the virtual world was not necessarily evident in their behavior in school tasks. Some gamers were “free riders” in the school tasks and simply benefitted from their diligent classmates in group activities.
Some MMORPG players, on the other hand, were observed to have good collaborative behavior, especially those who were part of a school's organization and competing team. This may point to the fact that the collaborative behavior exhibited in the virtual world is different from the behavior in collaborative activities in the real world. Other elements come into play such as motivation in doing the activity and others that can be determined by future research.

The results may also mean that the group activities in the classroom need to be more engaging and motivating, using the elements of MMORPG such as planning strategies, coordinating, communicating, performing tasks as a team, reflecting on failures, evaluating various approaches, and developing trust among group members (Voulgari & Komis, 2011). The key-informants of the study believed that when a student received enough guidance in self-regulation in their hours of playing games and cyber safety, and trained to be collaborative, then they may be able to perform better in group tasks in the classroom.

Empathy

Empathy, as defined in this study, is the awareness and understanding of the feelings and situation of another individual. There are two types of empathy, affective empathy, which is being able to respond with suitable emotion to the affective condition or state of another, and cognitive empathy, which is being able to ascribe and deduce another person’s mental state based on one's knowledge and experiences. Table 7 shows the empathy scores of high school MMORPG players in the Adolescent Empathy Quotient Test.

Bachen et al. (2012) explained that playing simulation games lets players experience the lives of other people, and in effect, increases empathy. On the other hand, Rivers et al. (2015) explained that role-playing gamers experience higher levels of empathetic involvement. However, data obtained in this study could not validate the said claims.

Table 7

Empathy Quotient Scores of Private and Public School MMORPG Players

Empathy Quotient	Private School Mean Score	Public School Mean Score	Mean Score for Both Schools
Cognitive Empathy	10.72	6.25	8.49
Affective Empathy	7.28	7.20	7.24
Total	18	13.45	15.72

The highest possible score for cognitive empathy was 30 and for affective empathy, 34 or a total of the highest possible score of 64 for empathy. It can be seen in the table that the empathy scores of the participants were very low. The mean score for cognitive empathy of the high school MMORPG players was 8.49, while their mean score for affective empathy was 7.24.

All MMORPG gamers in this study only got 25% of the highest possible empathy quotient score. Typically, developing adolescents who answered the same empathy quotient test in the study of Baron-Cohen (2012), got a mean score of 55% of the highest possible score. To analyze the results further, the correlation between empathy and time spent on gaming was computed, but no significant correlation was found. This must be because the data was taken from the sample of MMORPG gamers. Thus, further research on the empathy of the general population of Filipino adolescents is needed. Do typically developing adolescents in the Philippines have low empathy scores, or is this true only for MMORPG gamers?

Research studies that relate video and online gaming to empathy (i.e., Fraser et al., 2012, Shin & Ahn, 2013, Turan, 2021) suggest negative results. For example, the violent nature of many online games is deemed to desensitize the players, making them less empathetic toward others (Fraser et al., 2012). Moreover, in another study on the associations between game use and empathy, Shin and Ahn (2013) found that teenagers playing video games for long hours tended to have poorer empathy. Among the three age groups (adolescents, adults, and elders) that were surveyed, it was only among adolescents that gaming turned out to be negatively associated with empathy. One possible reason for this is that playing video games does not require the players to understand other people. According to Shin and Ahn (2013), when the social brain is inactive during the stage of adolescence, it may result in the delay of social development, especially cognitive empathy. These studies, however, look into video and online games in general, and not into MMORPG, which are simultaneously massively multiplayer games and role-playing games.

Parents and teachers who were interviewed stated that they noticed many (no number was specified) MMORPG players to be seemingly apathetic about their surroundings, especially when they play the game. Some who became addicted to gaming isolated themselves and did not seem to care about others anymore. Although students who participated in the FGD refuted this notion, they were very vocal about the fact that they frequently trash-talk opposing players. Almost all MMORPG players were guilty of belittling others while playing the game, whether in person or through online chat. According to them, this verbal violence only happens when they are playing—and it is a gaming culture that exists today.

Shin and Ahn (2013), who conducted a study on game use and empathy, explained that in gaming, a player does not necessarily have to devote mental resources to perceiving or interpreting others. According to these researchers, such a phenomenon could lead to prolonged inactivity in the part of the brain that is allocated for social activities, and eventually a delayed development in the ability to socialize (cognitive empathy). In addition, since most of the respondents in this study were males, who played for competition and advancement, empathy was not activated unlike when the motivation for gaming was relationship among the females (Dereli & Aypay, 2012).

Relationship Between Empathy and Collaborative Behavior

The third and final research question in this study sought to find out whether there is a relationship between the two types of empathy (affective and cognitive) and collaborative behavior components (interpersonal communication, commitment to shared success, and team leadership and initiative) of MMORPG players. No significant relationship was found between the types of empathy and dimensions of collaborative behavior.

The result does not reflect what other studies have shown such as that of Eisenberg and Miller (1987), which explained that empathy is an important predictor of successful collaborative behavior. Rumble et al. (2010) and Allemand et al. (2015) also associated empathy and collaboration. One possible explanation for the difference in results is that the collaborative activities conducted in this study did not necessarily activate empathy. Rumble et al. (2010) mention that when individuals work with individuals who are not close to them, as in the case of the collaboration activities in this study, empathy is not activated.

Conclusion

In this study, the high school MMORPG players were mostly males, which supports previous findings that digital online games tend to be more appealing to males than females. These players began gaming at an average age of 10–11 years old, but the earliest age reported was five years old. Entertainment was their primary reason for playing MMORPG and secondarily was to bond with friends. They spent an average of 92 to 93 pesos, which was mainly taken from their allowance. They spent 4–5 hours a day playing games and 5–6 times a week.

While most of the private school gamers played in their own homes, most of the public school students played in computer shops. Thus, the public school gamers spent more on computer rentals, while the private school players spent more on additional features for their game.

The top motivation for gaming was achievement, and this achievement boosted the high school gamers' confidence and self-esteem. The high school gamers, especially the ones coming from the public school tended to have low grades and a high number of absences. While the public school students may have had varied reasons for their absences and low grades, the presence of computer shops near their school presented a problem that needed to be addressed. The blended mode of learning in private schools also posed a problem, since this made it possible for private school students to play games any time, even during classes.

The proficient collaborative behavior of the MMORPG players may be an indicator that they were able to practice and transfer their collaboration skills in the MMORPGs, but the teachers reported a continuum of gamer students who would just rely on their classmates during group activities to MMORPG players manifesting excellent collaborative behaviors as part of the school's organization and competing teams.

Both affective and cognitive empathy of the MMORPG players were low, which may be attributed to less time spent with real human beings and which could have contributed to not being able to develop social skills. No linear relationship between the gaming hours and empathy scores was found, but this could be because the sample was MMORPG players who have the tendency to spend more hours playing online games due to the collaborative nature of the MMORPG (Ng & Wiemer-Hastings, 2005). There is a need to have a broader sample to cover a wider range of gaming hours.

No significant relationship was found between empathy and collaborative behavior. This means that they could collaborate well, without necessarily needing to empathize with the people they collaborate with.

Recommendations

Because the MMORPG gamers were reported to start at an early age, parental control needs to be established by restricting access to online applications, not only games, that may be dangerous to them.

Limiting their gaming through the Premack principle where they can only play the games when they are done with their responsibilities is also a viable solution. The recommended daily exposure to computers by the World Health Organization (Pappas, 2022) is only two hours a day. Too much exposure is detrimental to developing adolescents' physical and mental health.

Such issues need to be discussed with the growing teens so that they become more mindful of their unhealthy behavior. Parental control is more difficult when the mode of learning is online because the teens then have legitimate and longer access to the internet and online gadgets. Burton (2020) stated that children in the Philippines report that their parents or caregivers restrict and monitor them instead of speaking with them about proper online behavior and teaching them appropriate digital skills.

While the students claim that their confidence and self-esteem appear to have been boosted by the achievement that they get, such confidence derived from extrinsic rewards is unstable and shallow. There is a need to develop among the learners more stable and deeper bases of confidence and self-esteem.

Playing MMORPG has both negative and positive effects on players of all ages. Collaboration may be improved by the MMORPGs, but it may also have a negative impact on the students' empathy. Future research can look further into these.

Nevertheless, collaborative skills and empathy can be developed both at home and in the classroom. Whether they are gamers or not, there is a need to develop individuals who have both collaborative and empathetic skills for them to have prosocial behaviors and become productive members of society. For instance, Wulansari et al. (2020) studied how prosocial games had a positive influence on the collaboration and teamwork skills of the participants of the study. Hussain et al. (2007) and Rivers et al. (2016), on the other hand, examined the empathy of those who play science fiction and fantasy role-playing games. Hussain et al. (2007) found that game-based training systems can improve teamwork behaviors, while Rivers et al. (2016) found that the games can increase empathy scores of the players. Wulansari et al. (2020) suggest that development and promotion of 'games for good' or 'games for change' can be done.

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About the Authors

Anne Gelene Tobias-Domagsang is a writer, author, and educator. She has been working as a Language and Literature Teacher for more than 11 years now. She holds a Bachelor's Degree in Journalism and a Master's in Educational Psychology from the University of the Philippines, Diliman. Her advocacy in language learning inspired her to author an English and Literature textbook for Junior High School and a textbook in Reading and Writing Skills for Senior High School, under Brilliant Creations Publishing. She also worked as an English and Foreign Language Coordinator at the School of St. Anthony in Quezon City, Philippines. Currently, she enjoys teaching high school students in various cities in Hokkaido Prefecture, under the Hokkaido Board of Education in Japan. Her teaching advocacy centers on purposeful learning, as she strongly believes that learning only occurs when learners clearly understand their goals. She believes that without purposeful learning, teaching is without meaning.

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