

**Intensifying the motivation and technical skills development
of senior high school through the influence of online games**

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ABSTRACT

The Philippines stands as a rising star in the wave of the global online gaming phenomenon. The country has seen more people adopting the virtual gaming world, from casual players to aspiring esports professionals. This study assessed the influence of online gaming on the technical skills development of the senior high school students of Cabangahan National High School, Cabangahan, Consolacion, Cebu for the school year 2023-2024 as a basis for an intervention plan. The design used was the descriptive-quantitative method of research with researcher-made questionnaire as the main tool for gathering the data. There were 130 participants in this study. Percentage was used in the treatment of data in terms of background information and their general academic average; the weighted mean was employed to assess the extent of influence of online gaming on technical skills development; chi-square was used to test the significant relationship between the general average grades of the respondents and the extent influence of online gaming on technical skills development. The study revealed that the overall grades of the respondents were above average. In the same manner, the general weighted mean of the respondents' extent of the influence of online gaming on technical skills development is interpreted as agree. Moreover, across all seven questions, none of the relationships were found to be statistically significant, as all p-values exceeded the threshold of 0.05. This indicated that student's grades were not significantly associated with their responses regarding the extent to which online gaming influences technical skills development. Therefore, the researcher highly recommends applying the output of this study, the learning guide.

Keywords: Master of Arts in Vocational Education, descriptive-quantitative, Cabangahan National High School, Cabangahan, Consolacion, Cebu, intensifying, cognitive development, senior high school students, intervention plan, online games.

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INTRODUCTION

In the rapidly evolving digital age, the role of teachers has expanded beyond traditional instruction. Recognizing the need for educators to effectively integrate Information and Communication Technology (ICT) into teaching and learning, UNESCO developed the ICT

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Competency Framework for Teachers (ICT-CFT). This global framework serves as a guideline for developing national and institutional standards to empower teachers with the digital knowledge, skills, and attitudes required for quality, inclusive, and future-ready education (UNESCO, 2018). In the 21st century, digital transformation has become one of the most significant forces reshaping economies, education, and everyday life. In response to this evolving landscape, the Organisation for Economic Co-operation and Development (OECD) has developed a comprehensive digital policy framework to guide member and partner countries in leveraging technology for inclusive, sustainable growth. The OECD digital policy is not a single document, but a coherent set of strategies, frameworks, and recommendations, most notably outlined in the OECD Digital Economy Outlook and the OECD Going Digital Framework (OECD, 2020; 2021).

In the Philippines context, it stands as a rising star in the wave of the global online gaming phenomenon. According to (Buenaventura, 2022), online games for senior high school students do not have much effect on their learning in important subjects such as English, science, and mathematics. Based on the research's findings, it seems that senior high school pupils who play online games still receive satisfactory grades. Most students only play online games so that they can relax and use them in a positive way. Gabrito (2023) stated that the rapid advancement of technology in recent years has brought about both advantages and disadvantages, significantly impacting various aspects of people's lives. Game-Based Learning (GBL) integrates game design elements and principles into educational settings both digital and analog to promote engagement, learning, and skill development (Chumari et al., 2024). Beyond entertainment, GBL leverages attributes like narrative, challenge, feedback, and interactivity to support deeper learning (Wouters et al., 2023).

Despite the continuous efforts of the government through the program given to the Department of Education (DepEd) by issuing a department order, entitled "Revised Guidelines on the Implementation of Department of Education Computerization Program" (DO 16, 2023), which aims to provide public schools with appropriate, quality, and equitable technologies that would enhance the teaching, learning, governance, and operation processes, practices, programs, and policies to meet the challenges of the modern age. The department, indeed, has taken another step to make education accessible to all and to accelerate the delivery of basic education facilities and services. Despite all these digital-technological related programs and functional computer rooms at school, students are still facing poor academic performance. Although, DepEd has provided a set of well-defined expectations and competencies, and teachers are trained to become competent classroom instructors.

Therefore, this study aims to assess the impact of online games on the cognitive development of senior high school students and provide technical assistance, particularly a learning guide thereafter, specifically, in Cabangahan National High School, Cabangahan, Consolacion, Cebu.

Statement of the problem

This research assessed the influence of online gaming on the technical skills development of the senior high school students of Cabangahan National High School, Cabangahan, Consolacion, Cebu for the school year 2023-2024 as a basis for a learning guide. Specifically, this answered the following questions:

1. What is the profile of the respondents in terms of gender, age, types of games, and number of hours playing online games in a day?
2. What are the general average grades of the respondents?
3. What are the respondents' responses on the extent of the influence of online gaming on technical skills development?

4. Is there a significant relationship between the general average grades of the respondents and the extent of influence of online gaming on technical skills development?
5. Based on the study's findings, what learning guide could be developed?

METHODOLOGY

This section presents the methodological process of the study, which includes the methods and design, the flow of the study, the environment of the study, the sources of data, the instrument, the data collection procedures, the data analysis, and the scoring procedures.

The study utilized the descriptive-quantitative method. This method employed an adapted questionnaire for the respondents to answer in terms of the respondents' profiles, the general average grades of the respondents, the extent of influence of online gaming on technical skills development, the significant relationship between the profile of the respondents and the extent of influence of online gaming on technical skills development, and the significant relationship between the general average grades of the respondents and the extent of influence of online gaming on technical skills development, all of which were made into a quantitative type of research.

The research involved the system models employing the Input-Process-Output (IPO) approach. The Input contained the respondents' profiles, the general average grades of the respondents, and the extent of influence of online gaming on technical skills development. The Process was a method for gathering and synthesizing variables, which included the quantitative-descriptive method, gathering of data, organization of data, and data analysis. The data gathered were tabulated, analyzed, computed, and evaluated to determine the results. The Output of this research was intended to provide the researcher with empirical data to create a learning guide that can help teachers, students, and other sectors of the community raise awareness about the impact and influence of online games on the technical skills development of students. This output included the following elements: areas of concern, objectives, strategies, persons involved, budget, source of budget, time frame, expected outcome, and actual accomplishment.

The study was conducted at Cabangahan National High School, Cabangahan, Consolacion, Cebu. This school is situated in the northeast part of Cebu Province. Cabangahan is a barangay in the municipality of Consolacion in the province of Cebu. Its population as determined by the 2020 Census is 3,053, which represented 2.06% of the total population of Consolacion. The elevation at these coordinates is estimated at 124.4 meters or 408.1 feet above mean sea level. This research environment was selected because it was accessible, convenient, and conducive to the fast conduct and collection of the data needed for the study.

The respondents of the study were the senior high school students of Cabangahan National High School, Cabangahan, Consolacion, Cebu. The researcher selected these respondents for faster and more convenient administration and survey of the research questionnaire. A purposive sampling method was applied in choosing the research respondents. The total number of respondents was 130 senior high school students, representing 100% of the respondent population, for a total frequency of 130 and a total percentage of 100.00%.

The questionnaire used in this study was adapted from related literature on cognitive skill development in gaming and motivation theories, particularly the works of Ryan and Deci (2024). The questionnaire was composed of three parts. The first part addressed the profiles of the students, consisting particularly of gender, age, types of games, and number of hours playing online games in a day. The second part addressed the general average grades of the

respondents. The third part addressed the extent of the influence of online gaming on technical skills development. The medium of instruction of the questionnaire was English.

The researcher sought permission from the public school district supervisor of Consolacion District, the school principal of Cabangahan National High School, and the recommending approval of the research adviser. After permission was given, the preliminary data gathering through the research questionnaire was administered to the respondents on hand. The researcher assisted the respondents in filling up the questionnaires.

The statistical analysis of the data in the study involved a descriptive measure applied in the presentation of data, particularly in relation to the respondents' profiles, the general average grades of the respondents, the extent of influence of online gaming on technical skills development, and the significant relationship between the general average grades of the respondents and the extent of influence of online gaming on technical skills development. The following statistical treatments were used: simple percentage computation described the profile and frequency of the respondents, including gender, age, types of games, and number of hours playing online games in a day, as well as the general weighted average grades of the respondents. The weighted mean determined the extent of the influence of online gaming on technical skills development. The chi-square was used to test the significant relationship between the general average grades of the respondents and the extent of influence of online gaming on technical skills development.

The researcher used the five-point Likert scale, which required each individual participant to respond to a series of statements in the questionnaire by indicating the extent to which online gaming influenced the technical skills development of the students. A rating of 5, corresponding to a scale range of 4.21 to 5.00 and described as Strongly Agree, indicates that the respondent demonstrates a very high level of agreement and strongly affirms the presence or influence of the stated indicator. A rating of 4, corresponding to a scale range of 3.41 to 4.20 and described as Agree, indicates that the respondent shows agreement and generally supports the presence or influence of the stated indicator. A rating of 3, corresponding to a scale range of 2.61 to 3.40 and described as Undecided, indicates that the respondent is neutral, uncertain, or has no definite opinion regarding the presence or influence of the stated indicator. A rating of 2, corresponding to a scale range of 1.81 to 2.60 and described as Disagree, indicates that the respondent demonstrates disagreement and does not support the presence or influence of the stated indicator. A rating of 1, corresponding to a scale range of 1.00 to 1.80 and described as Strongly Disagree, indicates that the respondent expresses very low agreement and strongly rejects the presence or influence of the stated indicator.

RESULTS AND DISCUSSION

This chapter presents the gathered data, analysis, and interpretation of the profile of the respondents in terms of age, gender, types of games played, and number of hours spent playing online games in a day; the general average grades of the respondents; the respondents' responses on the extent of the influence of online gaming on technical skills development; the significant relationship between the profile of the respondents and the extent of influence of online gaming on technical skills development; and the significant relationship between the general average grades of the respondents and the extent of the influence of online gaming on technical skills development. A total of 130 selected and identified senior high school students participated in the study. Data were gathered through a structured survey instrument and analyzed using frequency counts, percentages, weighted means, and chi-square tests of independence. All findings are presented in the same order as the statement of the problem and are interpreted in direct relation to the objectives of the study.

The distribution of respondents by gender shows that 79, representing 60.77%, are male, while 51, or 39.23%, are female, yielding a total of 130 senior high school student respondents. The data indicate that the majority of respondents are male, a pattern that is consistent with existing literature on gender differences in online gaming participation. Studies have consistently shown that male students tend to engage in gaming more frequently and for more competitive purposes, often gravitating toward games that prioritize achievement, high scores, and winning in multiplayer environments, while female students are more likely to prefer games that emphasize social interaction, storytelling, and creative expression such as simulation and role-playing games (Crawford and Gosling, 2004). These differing motivations and preferences are further reflected in the types of games each gender gravitates toward, with males showing a stronger inclination toward action and strategy games that require fast reflexes and quick decision-making, while females tend to favor casual, puzzle, or adventure games (Yee, 2006). Such genre preferences are relevant to the study because the type of game played influences the nature of cognitive skills developed. Action and strategy-based games have been shown to improve cognitive functions including spatial awareness, memory, problem-solving, and multitasking, and action games in particular have been linked to enhanced visual information processing, improved attention, and stronger spatial skills (Green and Bavelier, 2003; Boot, Blakely, and Simons, 2008). The predominance of male respondents in this study therefore carries implications for how the findings on technical skills development should be interpreted, as the cognitive outcomes associated with gaming may be shaped in part by gender-influenced game preferences.

The distribution of respondents by age reveals that 56, or 43.08%, are 17 years old, making this the largest age group in the study. This is followed by 51 respondents, or 39.23%, who are 16 years old, 12 respondents, or 9.23%, who are 18 years old, 7 respondents, or 5.38%, who are 19 years old, 2 respondents, or 1.54%, who are 20 years old, and 1 respondent, or 0.77%, who falls in the category of 21 years old and above. The total number of respondents is 130. The data indicate that most respondents are 16 or 17 years old, which corresponds to the typical age range of senior high school students and situates the study within a critical stage of adolescent cognitive development.

Age is a meaningful factor in shaping students' online gaming habits and the cognitive outcomes associated with gaming. Cole and Griffiths (2007) found that older adolescents tend to engage with more cognitively demanding games, such as multiplayer strategy or role-playing games that require strategic thinking and social coordination, while younger students often favor action-oriented games with simpler mechanics. Yee (2006) similarly noted that students aged 17 to 18 are more likely to gravitate toward games requiring higher levels of cognitive engagement, such as strategy games and cooperative team-based games, compared to younger students who may prefer more straightforward gameplay. These age-related differences in game preferences carry implications for cognitive development, as the demands of more complex gaming environments can stimulate a broader range of executive functions. Green and Bavelier (2003) reported that engaging in complex, multi-level decision-making games can improve working memory, inhibitory control, and cognitive flexibility, particularly among older adolescents whose cognitive processing capacities are more developed. The concentration of respondents in the 16 to 17 age range therefore suggests that the majority of students in this study are at a developmental stage where gaming may exert a meaningful, if nuanced, influence on cognitive and technical skill formation.

Types of games

The distribution of respondents by type of online game played shows that 58, or 44.62%, prefer action games, making this the most commonly played genre. Puzzle games are preferred by 26 respondents, or 20.00%, sports games by 24 respondents, or 18.46%, strategy games by 13 respondents, or 10.00%, and adventure games by 9 respondents, or 6.92%. The total number of respondents is 130. The data indicate that the majority of senior high school respondents prefer action and puzzle games, a pattern that has direct relevance to the cognitive and technical outcomes examined in this study.

The predominance of action games among the respondents is consistent with research demonstrating that this genre has among the most extensively documented effects on cognitive development. Action games require fast reflexes, sustained attention, and rapid visual-spatial processing, and have been shown to enhance functions such as attention to detail, reaction time, the ability to track multiple objects simultaneously, and spatial awareness (Green and Bavelier, 2003). Because players must make quick decisions under pressure and rapidly process visual information, action games have been associated with improvements in executive functions including decision-making and cognitive flexibility, as well as in practical skills such as reading maps, understanding geometric concepts, and real-world problem-solving (Boot et al., 2008). However, Anderson and Dill (2000) cautioned that overexposure to action-oriented games, particularly those with violent content, may increase aggression and diminish social skills, underscoring that the cognitive benefits of action gaming are contingent on moderation and the specific nature of the content.

Puzzle and strategy games, which together account for a substantial portion of the respondents' game preferences, engage a somewhat different set of cognitive functions centered on planning, resource management, critical thinking, and pattern recognition. Granic, Lobel, and Engels (2014) found that these genres improve working memory, cognitive flexibility, and planning abilities, and that the problem-solving skills developed through such games can transfer to academic tasks requiring logical reasoning. O'Leary and Williams (2011) further found that students who engage with strategy games may experience performance improvements in subjects such as mathematics and science, which demand critical thinking and long-term planning. Puzzle games, through their emphasis on spatial reasoning and pattern recognition, similarly support abilities related to mathematical and logical problem-solving. The genre distribution of the respondents in this study therefore suggests that a meaningful portion of the sample is engaged with game types that carry documented potential for enhancing the kinds of technical and cognitive skills examined in the succeeding portions of the chapter.

Number of hours playing online games in a day

The distribution of respondents by number of hours spent playing online games per day shows that 71, or 54.62%, play for 1 to 2 hours daily, which constitutes the majority of the sample. A total of 44 respondents, or 33.85%, play for 3 to 4 hours, 10 respondents, or 7.69%, play for 5 to 6 hours, 3 respondents, or 2.31%, play for 7 to 8 hours, and 2 respondents, or 1.54%, play for 9 hours or more per day. The total number of respondents is 130. The data indicate that the majority of respondents play online games for 1 to 4 hours daily, with most concentrated in the lighter 1-to-2-hour range.

The number of hours spent playing online games is a critical factor in determining the nature and direction of the cognitive effects associated with gaming. Short, structured sessions of gameplay, particularly with games that carry cognitive demands such as strategic planning

and problem-solving, have been associated with positive outcomes including improved memory, sustained attention, and enhanced critical thinking. Green and Bavelier (2003) found that action video games can improve visual processing skills and attention span, leading to faster decision-making and better hand-eye coordination even with moderate levels of play. Prensky (2001) similarly noted that students who engage with games involving problem-solving, strategic planning, and resource management often develop improved problem-solving strategies that transfer to academic tasks. However, excessive gaming has been consistently linked to negative consequences, including reduced academic performance, diminished attention in formal learning contexts, and social isolation. Lemola et al. (2015) found that excessive video gaming is associated with poor academic performance and reduced attention span in adolescents, a finding particularly relevant for the senior high school students in this study who require sustained cognitive focus for their academic responsibilities. The concentration of respondents in the 1-to-4-hour range suggests that the majority of the sample engages with online games at a frequency that may support rather than impede cognitive development, provided that the games played are of the cognitively stimulating variety and that gaming does not displace time allocated to study and rest.

General average grades of the respondents

The academic performance of the 130 senior high school respondents, as reflected in their general average grades, shows that the largest group consists of 54 students, or 41.54%, whose grades fall within the Very Satisfactory range of 85 to 89. This is followed by 41 respondents, or 31.54%, in the Satisfactory range of 80 to 84, and 27 respondents, or 20.77%, in the Outstanding range of 90 to 100. Seven respondents, representing 5.38%, fall in the Fairly Satisfactory range of 75 to 79, and 1 respondent, or 0.77%, did not meet expectations with a grade below 75. The data indicate that the majority of respondents maintain good academic standing, with more than 60% falling in the Very Satisfactory and Outstanding categories combined.

This academic profile suggests that the respondents are generally performing well in school, which is relevant to interpreting the relationship between their gaming habits and cognitive functioning. The fact that a substantial proportion of respondents who regularly engage in online gaming are achieving high or very high academic grades is consistent with research suggesting that moderate gaming, particularly of cognitively demanding genres, may not be detrimental to academic performance and may in certain cases support the development of skills relevant to academic tasks. Cameron et al. (2012) found that playing action games helps develop cognitive flexibility by encouraging rapid information processing and strategy-switching, which are transferable to academic environments requiring adaptability and problem-solving. Green and Bavelier (2003) demonstrated that action games improve visual attention by training players to focus on important stimuli while filtering out irrelevant ones, a skill directly applicable to academic reading and note-taking. Boot et al. (2008) similarly found that action games improve the ability to track objects in the visual field and process them more effectively, suggesting benefits that may support performance in visually demanding academic tasks.

Games involving puzzles, strategy, and complex problem-solving have also been shown to improve short-term and working memory. Boot et al. (2008) noted improvements in working memory and executive function among players of strategy games such as StarCraft, while spatial memory improvements have been documented among players of games such as Tetris. Granic, Lobel, and Engels (2014) emphasized that the cognitive benefits of gaming are

neither inherent nor universal but are contingent on the type of games played and the manner in which they are integrated into students' daily routines, and that cognitive flexibility enhanced by gaming allows players to adapt more quickly to new information, a skill with broad academic relevance. While the majority of respondents in this study performed satisfactorily or better academically, the small proportion with lower grades is a reminder that excessive or poorly managed gaming can reduce the time and attention available for academic study, as documented by Lemola et al. (2015).

Extent of the influence of online gaming on technical skills development

The extent of the influence of online gaming on technical skills development was assessed using seven indicators, each rated on a scale ranging from Strongly Disagree to Strongly Agree, with the range of 3.41 to 4.20 corresponding to Agree. The aggregate mean for all seven indicators was 3.78, interpreted as Agree, indicating that the respondents collectively perceive online gaming as exerting a meaningful positive influence on their technical skills development.

Among the seven indicators, the highest mean was recorded for the statement that online games help relieve stress, which yielded a mean of 4.02, interpreted as Agree. The second highest mean was obtained by the statement that playing online games requires strategic thinking and planning, with a mean of 3.95, also Agree. The statement that playing online games has improved problem-solving skills produced a mean of 3.81, Agree, while feeling a sense of achievement when playing online games yielded a mean of 3.80, Agree. The statement that playing games involves multitasking and managing multiple objectives registered a mean of 3.72, Agree. Both the statement on improved attention span and focus and the statement on improvements in memory and recall ability due to playing online games each produced a mean of 3.58, Agree.

The highest-rated indicator, reflecting the perception that online games help relieve stress, is consistent with a body of research documenting the psychological benefits of gaming for adolescents under academic and social pressure. Lemola et al. (2015) found that online gaming can serve as an effective mechanism for adolescents to temporarily disengage from the demands of school and social stress, allowing for emotional recharging and a reduction of anxiety. Valkenburg and Peter (2013) further highlighted that online games provide opportunities for social bonding, which can alleviate feelings of loneliness and reduce stress through a sense of community and belonging. Przybylski and Ryan (2009) found that games offering achievable goals and visible progress create a sense of mastery and accomplishment that counteracts feelings of helplessness, a common contributor to stress among students facing academic challenges.

The second highest-rated indicator, reflecting agreement that online games require strategic thinking and planning, aligns with extensive research on the cognitive demands of gaming. Prensky (2001) noted that role-playing games require players to think several steps ahead, prioritize objectives, manage time and resources, and set goals, all of which parallel the planning and organizational skills required in academic settings. Boot et al. (2008) demonstrated that action-based games improve rapid decision-making and cognitive flexibility, enabling players to manage multiple tasks simultaneously, while Oei and Patterson (2013) found that strategy-oriented games enhance executive functions including planning and working memory, skills directly transferable to academic project management and exam preparation.

The aggregate mean of 3.78, interpreted as Agree, confirms that the majority of respondents believe online gaming positively influences their cognitive and technical

development. Granic, Lobel, and Engels (2014) affirmed that action video games enhance visual-spatial skills and attention, benefiting real-life tasks that require multitasking and rapid decision-making, which are particularly relevant for senior high school students navigating complex academic demands. Anderson and Dill (2000) further suggested that games requiring problem-solving and planning contribute to cognitive development, while Liu (2013) noted that cognitive improvements from gaming, such as enhanced visual-spatial processing and multitasking ability, may not be directly reflected in traditional academic measures but are nonetheless valuable for broader technical competence. The aggregate mean of 3.78 thus reflects a consistent perception among respondents that online gaming, as they engage with it, represents a meaningful source of technical skill development alongside their formal academic learning.

Significant relationship between the general average grades of the respondents and the extent of the influence of online gaming on technical skills development

To determine whether there was a significant relationship between the general average grades of the respondents and the extent of the influence of online gaming on technical skills development, a chi-square test of independence was conducted for each of the seven survey questions. The results across all seven questions consistently showed no statistically significant relationship, as all p-values exceeded the threshold of 0.05.

For Question 1, the chi-square value was 13.888 with 16 degrees of freedom and a p-value of 0.607, indicating no significant relationship. For Question 2, the chi-square value was 15.203 with 12 degrees of freedom and a p-value of 0.231, also not significant. Question 3 produced a chi-square value of 22.589 with 16 degrees of freedom and a p-value of 0.125, not significant. For Question 4, which yielded the highest chi-square value of 28.806 with 16 degrees of freedom, the p-value was 0.440, still well above the 0.05 threshold and therefore not significant. Question 5 produced the lowest p-value among the seven questions at 0.069, with a chi-square value of 23.035 and 16 degrees of freedom, but this result likewise failed to meet the standard for statistical significance. For Question 6, the chi-square value was 17.248 with 16 degrees of freedom and a p-value of 0.370, not significant. For Question 7, the chi-square value was 14.299 with 16 degrees of freedom and a p-value of 0.576, also not significant. Across all seven questions, the null hypothesis of no significant relationship is retained, indicating that students' general average grades are not significantly associated with their perceptions of the extent to which online gaming influences technical skills development.

These findings are consistent with a growing body of research suggesting that the relationship between online gaming and academic performance is neither direct nor uniform. Przybylski (2014) concluded that video games can produce both positive and negative effects, but that these effects are strongly contingent on individual differences in existing cognitive skills and patterns of game engagement, making any group-level relationship between gaming perceptions and academic grades inherently difficult to establish. Ferguson (2015) similarly found in a broad meta-analysis that video games had a relatively small impact on academic performance overall, and that evidence for a consistent, significant relationship between gaming and general academic achievement remains inconclusive. While certain genres of games may improve specific cognitive functions such as attention and memory, these improvements do not necessarily translate into higher grades, which are shaped by a more complex and multifactorial interaction of personal, social, academic, and environmental variables. Radesky et al. (2015) emphasized that academic performance is more strongly related to factors such as parental guidance, sleep patterns, and participation in extracurricular

activities than to time spent on video games, underscoring the relatively limited explanatory power of gaming habits alone in predicting academic outcomes.

Kuss and Griffiths (2012) similarly concluded in a longitudinal study that while gaming can foster skills such as problem-solving and strategic thinking, there was no significant evidence linking gaming to long-term improvements in academic grades. Liu (2013) further noted that cognitive gains associated with gaming, such as enhanced visual-spatial processing or multitasking ability, do not necessarily correspond to improvements in the standardized academic domains measured by grades, including reading, writing, and mathematics. Taken together, the non-significant chi-square results across all seven questions in this study affirm that academic grade level does not determine how senior high school students perceive the cognitive and technical influence of online gaming, and that the effects of gaming on development are experienced individually and contextually rather than as a function of academic standing.

The findings presented in this chapter collectively provide a comprehensive, empirically grounded account of the profile of senior high school respondents who engage in online gaming, their academic performance, their perceptions of online gaming's influence on technical skills development, and the statistical relationships between these variables. The profile data revealed that 79 respondents, or 60.77%, are male and 51, or 39.23%, are female; that the majority are 16 to 17 years old; that action games are the most frequently played genre at 44.62%, followed by puzzle games at 20.00%; and that 71 respondents, or 54.62%, play for 1 to 2 hours daily. In terms of academic performance, 54 respondents, or 41.54%, fall in the Very Satisfactory range, and the majority of the sample maintains passing to outstanding grades. The aggregate mean for the extent of influence of online gaming on technical skills development was 3.78, interpreted as Agree, with stress relief and strategic thinking yielding the highest individual indicator means of 4.02 and 3.95 respectively. The chi-square analysis across all seven questions found no statistically significant relationship between general average grades and perceptions of online gaming's influence on technical skills development, with p-values ranging from 0.069 to 0.607, all of which exceeded the 0.05 threshold and led to the retention of the null hypothesis for each question. These findings affirm that while senior high school students broadly recognize positive influences of online gaming on their technical and cognitive development, academic grade level does not significantly predict the extent of such perceived influence, pointing to the individualized and contextually embedded nature of gaming's effects on adolescent development. The conclusions and recommendations presented in the succeeding chapter of this manuscript are grounded in the totality of the findings discussed herein.

CONCLUSION

This study investigated the influence of online gaming on the technical skills development of learners at Cabangahan National High School in Cabangahan, Consolacion, Cebu during the school year 2023-2024. Using a descriptive research design, the study involved 130 learner respondents and sought to characterize their demographic profiles, determine their general average grades, assess the extent to which online gaming influenced their technical skills development, and examine whether a significant relationship existed between academic performance and the perceived influence of online gaming. Data were gathered through a researcher-made questionnaire and analyzed using simple percentage computation, weighted mean, and chi-square test.

The profile of the respondents revealed that the majority were male, comprising 60.77 percent of the total, while female respondents accounted for 39.23 percent. In terms of age, the

largest proportion of respondents were 17 years old at 43.08 percent, followed by those aged 16 at 39.23 percent, with smaller proportions falling in the age ranges of 18, 19, 20, and 21 years and above. With respect to the types of online games played, action games were the most preferred, representing 44.62 percent of respondents, followed by puzzle games at 20.00 percent, sports games at 18.46 percent, strategy games at 10.00 percent, and adventure games at 6.92 percent. Regarding daily hours spent playing online games, the majority of respondents spent one to two hours per day at 54.62 percent, followed by those spending three to four hours at 33.85 percent, five to six hours at 7.69 percent, seven to eight hours at 2.31 percent, and nine hours or more at 1.54 percent.

In terms of academic performance, the findings showed that 41.54 percent of respondents received a very satisfactory rating, 31.54 percent were rated satisfactory, 20.77 percent were rated outstanding, 5.38 percent received a fairly satisfactory rating, and 0.77 percent did not meet expectations. These results indicate that the general academic standing of the respondents was not low, though it remained below the level of consistent outstanding performance, suggesting that there is room for meaningful academic improvement across the group.

With regard to the extent of online gaming's influence on technical skills development, respondents generally agreed that online gaming had a positive influence, as reflected in an overall weighted mean of 3.78 interpreted as agree. Among the individual items assessed, the statement that online games help relieve stress obtained the highest mean of 4.02, interpreted as agree, while the statement that playing online games requires strategic thinking and planning obtained the second highest mean of 3.95, also interpreted as agree. These findings suggest that learners perceive online gaming as a moderately positive contributor to certain aspects of technical and cognitive engagement, though this influence was neither exceptionally high nor markedly low.

The chi-square analysis conducted to examine the relationship between respondents' general average grades and their perceived extent of online gaming's influence on technical skills development yielded no statistically significant results across all seven questionnaire items, with all p-values exceeding the 0.05 threshold. This indicates that students' academic performance was not significantly associated with their responses concerning the degree to which online gaming influenced their technical skills development. The absence of a significant relationship suggests that factors other than online gaming behavior play a more determinative role in shaping academic outcomes among the respondents.

In conclusion, the general average grades of the respondents were not low but retained potential for further improvement. The extent to which online gaming influenced technical skills development was moderate, falling at a level that was neither markedly high nor low. Importantly, no significant association was found between academic performance and the perceived influence of online gaming on technical skills development, affirming that online gaming engagement, as reported by the respondents, does not directly predict or significantly affect academic achievement in this context.

Based on these findings, schools are encouraged to adopt personalized learning strategies and offer tutoring programs responsive to individual student needs, as well as to incorporate online learning platforms that adapt to varying student learning levels. Senior high school students should likewise be provided with dedicated workshops on time management, study skills, and goal setting to equip them with the tools necessary to manage their academic responsibilities more effectively alongside their leisure activities. The output of this study is further recommended for implementation as a basis for informed academic interventions at the school level.

For future research, the following areas are recommended for further investigation: exploring the role of digital tools in enhancing cognitive development and academic performance among senior high school learners; examining how e-learning platforms can foster cognitive development in senior high school students and the opportunities and challenges associated with such platforms; studying the integration of online learning platforms as a means of strengthening cognitive abilities and academic achievement at the senior high school level; and investigating the impact of gamified online learning platforms on cognitive development among senior high school students. These prospective studies will contribute to a richer and more nuanced understanding of the intersection between digital engagement and academic growth in the contemporary educational landscape.

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