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The Utilization of ChatGPT and Its Effect on the Academic Performance of the BSEd Mathematics

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ABSTRACT

This study examined the utilization of ChatGPT and its effect on the academic performance of Bachelor of Secondary Education major in Mathematics (BSEd Math) students of Colegio de Santa Rita de San Carlos, Incorporated. It specifically aimed to determine the extent of ChatGPT utilization in terms of frequency of use, purpose of use, and support services, and to examine whether there is a significant relationship between ChatGPT utilization and students' academic performance. Aquantitative descriptive-correlational research design was employed. The respondents were 76BSEd Math students from first year to fourth year, selected through stratified sampling from a population of 94 students. Data were gathered using a researcher- made survey questionnaire with a 4-point Likert scale, while academic performance was measured using the students' General Weighted Average (GWA) for the first semester. The findings revealed that students occasionally utilized ChatGPT as a supplementary tool for understanding mathematical concepts, clarifying solutions, and assisting in problem-solving. The students generally obtained Very Satisfactory to Outstanding academic performance. However, statistical analysis revealed a very weak positive correlation between ChatGPT utilization and academic performance, and no significant relationship was found between the variables. It is concluded that ChatGPT serves only as a supplementary academic support tool and does not significantly affect the academic performance of BSEd Math students.

Keywords: *ChatGPT, Mathematics, BSEd, Academic Performance*

INTRODUCTION

In the 21st-century learning era, students are now exposed to various digital tools that influence how knowledge is acquired, processed, and applied. Apart from being digitally competent, future educators in the field of Mathematics have to learn critical thinking, problem-solving skills, and digital literacy. Education has become interactive and easily accessible after the development of AI systems like ChatGPT that give students instant answers and academic help whenever and wherever needed. With all the aforementioned discussion, though, it is not yet clear whether the use of those technologies is beneficial to academic performance or is merely an "easy wayout" for the academic task. Internationally, AI technologies such as ChatGPT have attracted attention in the educational context because of their personal and immediate response capacity. Kasneci et al. (2023) mentioned

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that ChatGPT's contribution to the learning process is both through tutoring and explanations, despite concerns around academic honesty and over-dependence on this technology. Similarly, Dwivedi et al. (2023) argued that generative AI can contribute to education by increasing access to information, while its real influence lies in student use patterns.

According to the OECD (2023), digital tools may enhance students' performance and participation, but reduce their ability to learn independently if not used wisely. There has been an increased usage of technology in education throughout the years, especially in the higher education institutions of the Philippines. Currently, students tend to make use of digital tools and applications of AI to assist their studies, particularly on subjects that students have a problem with, like Mathematics. However, the question arises as to whether too much dependency on using these technologies may cause harm to their analytical and mathematical problem-solving abilities (UNESCO, 2023; OECD, 2023). A recent debate in higher education revealed that while technology enables wider access to resources, the role of guided and disciplined usage is what ensures that the critical thinking skills of students remain a priority (Alcober & Dela Cruz, 2022). Meanwhile, as Colegio de Santa Rita of San Carlos, Incorporated is gradually utilizing ChatGPT in education, BSEd Mathematics is also slow in implementing Artificial Intelligence, as it is in almost every student activity in academics, which includes understanding topics, performing Math activities, and completing requirements. However, there is little available research to determine if ChatGPTis really beneficial to a student's academic performance or if it can lead to over- dependence and a lack of self-sufficient learning skills.

This study aimed to determine how often BSEd Math students use ChatGPT and whether it is correlated with their academic performance. Knowing the importance of understanding concepts and problem-solving in Mathematics, this study will assess whether artificial intelligence like ChatGPT is helping or affecting the performance of the students. The results of this study could give useful information for educators to know the effectiveness of the use of these tools. Although many studies involve the use of AI in education, there is minimal research that deals specifically with how ChatGPT is related to the academic performance in terms of General Weighted Average (GWA) of BSEd Mathematics in the Philippines institutions. However, the existing literature involves the general use of AI in education and did not specify discipline-specific research and localized studies; therefore, this study aimed to identify the relation of the usage of ChatGPT with the students' academic performance in Mathematics education.

Research Questions

This study aims to assess the relationship between the utilization of ChatGPT and the academic performance of BSEd Math students at Colegio de Santa Rita de San Carlos, Incorporated. Specifically, this study seeks to answer the following questions:

1. What is the extent of the utilization of ChatGPT among BSEd Math students at Colegio de Santa Rita de San Carlos, Incorporated, in terms of;
a.) Frequency of use;
b.) Purpose of use;
c.) Support services
2. What is the level of academic performance of BSEd Math students in terms of;
a.) GWA of Final Grades in the First Semester
3. Is there a significant relationship between the utilization of ChatGPT and the academic performance of BSEd Math students?

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Literature Review

Utilization of ChatGPT as an Academic Learning Support Tool

The impact of technology on how students access learning resources is important. ChatGPT is a form of generative artificial intelligence that has the capability of providing learners with instant feedback, tailored responses, and guiding them through processes. Learning activities within particular contexts can be enhanced by the use of new educational technologies, which have been supported by empirical evidence. They can foster motivation, collaborative, and self-directed learning (Holmes et al., 2022). Caratiquit (2023) noted that ChatGPT was trying to determine if it assists with improving academic performance by increasing motivation to learn.

The findings indicate that it positively motivates learners to get involved in school activities and positively impacts learning. Participants appreciated and reported being more motivated to learn and to tackle difficult questions because support was readily available, and there was enhanced supervision. Thus, the ChatGPT instructional tool encouraged learners to participate and achieve success. Surveys were conducted to analyze students' attitudes and classroom practices toward ChatGPT in Asian educational systems, extending previous studies. Findings indicated a positive attitude toward ChatGPT, as many students acknowledged its utility in their learning process, enhancement of school tasks, and conceptual organization. However, issues of overuse, accuracy, and academic honesty were also recognized by the researchers, which may have posed a danger.

As the paper suggests, the value in using artificial intelligence tools in schools can be realized when their use is understood to have limitations and applied conscientiously. Collectively, the results propose an optimistic view that ChatGPT can be a valuable means of improving the quality of learning (Heard, 2025). Additionally, the current literature demonstrates that AI-supported tools like ChatGPT can positively affect students' autonomous learning and academic participation. In Social Sciences & Humanities Open (2025), this systematic review portrays that ChatGPT can contribute to providing more access to good-quality resources that can support and expand knowledge on a certain problem, as well as help students in academic writing tasks. Based on this AI-enhanced system, the authors argue that providers are obliged to provide regulations and clear guidelines pertaining to the ethical use and functioning of ChatGPT, in particular in the context of college students majoring in Mathematics, as digital learning arenas are rapid lyre-profiling teachers' classroom procedures. In this regard, the literature confirms that ChatGPT is an effective academic learning tool when implemented with well- structured interventions and critical considerations

Academic Performance in Mathematics

Mathematical achievement among students is most commonly assessed through General Weighted Average (GWA), which is a function of their understanding of mathematical concepts and problem-solving skills. These variables are influenced by a combination of study habits, intelligence, and the learning environment. In most educational systems today, another important factor is technology, which can improve students' academic achievements (UNESCO, 2023). Research from different countries shows that educational technology and AI help students improve their math skills through personalized instruction and Realtime feedback, and help with problem-solving. Kasneci et al. (2023) and OECD (2022) state that through AI, students learn actively and develop their mathematical thinking.

Moreover, it should be mentioned that the potential of ChatGPT and similar AI tools as digital tutors and learning assistants has only recently started being explored (Gill et al., 2023). In the Philippines, students' problems with studying math stem from in sufficient understanding of math concepts and the rigidity of traditional learning method. In the Philippines' tertiary educational institutions, the adoption of digital learning technologies and AI applications is becoming omnipresent.

These technologies may be perceived as academic aids that assist learners in achieving more optimal outcomes in the study of mathematics and in the elevation of their GWA (CHED, 2022; UNESCO, 2023). There exists variation in the GWA of BSEd Mathematics students at Colegiode Santa Rita de San Carlos, Inc. Some students have started utilizing AI apps such as ChatGPT to review lessons, answer math-related questions, and

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understand difficult concepts. However, studies have shown that there are no empirical studies conducted in the local context on the impacts of ChatGPT on students' academic performance (Zheng, 2023).

Research Methodology

This study will utilize a quantitative descriptive-correlational research design to assess the utilization of ChatGPT and its relationship with the academic performance of BSEd Math students at Colegio de Santa Rita de San Carlos, Inc. The descriptive component of the study will determine the extent to which students utilize ChatGPT as a learning tool in Mathematics. Specifically, the utilization of ChatGPT will be examined in terms of frequency of use, purpose of use, and support services.

This part of the study aims to provide a clear description of how students integrate ChatGPT into their mathematics learning. On the other hand, the correlational component will examine whether there is a significant relationship between the utilization of ChatGPT and the academic performance of the students. Academic performance will be measured using the students' General Weighted Average (GWA) for the first semester. The researchers will analyze whether the level of ChatGPT utilization is related to the students' academic performance This research design is appropriate because it allows the researchers to describe ChatGPT utilization and examine its relationship with academic performance without manipulating any variables.

Respondents

The college students from Colegio de Santa Rita de San Carlos, Inc., specifically the Bachelor of Secondary Education Major in Mathematics, are the respondents of the study. From these, the researchers will have the total population sampling where 76 students out of 94 students of BSEd Mathematics in Colegio De Santa Rita de San Carlos, Inc. will be the respondents of the study. For the pilot testing of the research, the education students from Central Philippine State University (CPSU) will be the respondents; the researcher aims to have at least 25to30 respondents for pilot testing.

The respondents are selected through the use of stratified sampling, where there are 10 students from Math 1, 22 students fromMath2, 26 students from Math 3, and 18 students from Math 4, distributed proportionally across year levels and survey groups. Additionally, the population of the mathematics major consists of 12 students from Math 1, 27 students from Math 2, 32 students from Math 3, and 23 students from Math 4. Moreover, the participants for pilot testing will not be used for the final survey to avoid potential biases; thus, for the data collection, the students who were off-site will be receiving the survey through online forms, while the students on-site will be given the survey questionnaire in person.

Research Instrument

This study uses a researcher-made questionnaire as the main research instrument. The questionnaire was made to gather data for the study entitled "The Utilization of ChatGPT and Its Effect on the Academic Performance of the BSEDMath Students of CSR". It aims to examine how the use of ChatGPT affects the academic performance of BSEd Math students of CSR based on their General Weighted Average (GWA) of final grades in the first semester. The questionnaire is composed of two parts. The first part collects information on the respondents' demographic profile, such as their name (optional) and year level.

The purpose is to classify the respondents according to their academic status and to allow the researchers to describe the characteristics of the sample population and compare responses across different year levels. The second part consists of the Research Questions of the study. This part seeks to measure the level of ChatGPT usage among college students majoring in Mathematics. It evaluates the frequency of use, the purpose of use for which ChatGPT was utilized, and support services. The statements included in this part also aim to determine how ChatGPT may affect students' academic performance in Mathematics based on their General Weighted Average (GWA) of final grades in the first semester. All of the college students will utilize a 4-point Likert scale, with the following values: 4 – Always, 3 – Sometimes, 2 – Rarely, and 1 – Never.

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The Higher scores indicate frequent use of ChatGPT and a stronger perceived impact on academic performance in Mathematics. By examining the responses gathered in this part, the researchers can determine whether ChatGPT has a positive, negative, or neutral influence on the academic performance of college students majoring in Mathematics.

Data Collection Procedure

The researchers will ask permission from the Dean of College and the assigned teachers to conduct the study and collect data from college students majoring in Mathematics at Colegio de Santa Rita de San Carlos, Incorporated. TheDean of the College, assigned teachers, and the identified respondents receive written consent explaining the goals of the study and how they can participate. Upon verification of the research questionnaire and approval from the school authorities, the researchers will proceed with the data collection. The respondents will answer the research questionnaires or surveys prepared by the researchers. The collected data will then be organized and explained using suitable statistical tools. The respondents will be assured that all collected data will remain confidential and that no information related to their identities will be publicly disclosed.

RESULTS AND DISCUSSIONS

This chapter presents the findings and discussion of the study based on the data collected from the BSEd Math Students at Colegio de Santa Rita de San Carlos, Inc. It includes the presentation, analysis and interpretation of responses gathered from survey questionnaires administered to 76 respondents. The results are arranged according to the specific research questions of the study, covering the frequency of use, the purpose of use, supported services, the General Weighted Average (GWA) of final grades in the first semester, and the significant relationship between the Utilization of ChatGPT and the academic performance of the students. Each result is further examined and supported by relevant literature and studies to provide meaningful implications and interpretation for Mathematics Education.

Extent of the Utilization of ChatGPT among BSED Math Students at Colegio de Santa Rita de San Carlos, Incorporated, in terms of:

Frequency Use among BSEd Mathematics students at Colegio de Santa Rita de San Carlos, Incorporated, in terms of frequency of use. The item “I often use ChatGPT for learning mathematics” obtained the highest weighted mean value of 2.43, with a standard deviation of 0.50, Andis interpreted as Satisfactory. This indicates that respondents frequently use ChatGPT as a learning aid in mathematics.

Meanwhile, the item “When completing mathematics assignments, I commonly use ChatGPT as a tool” garnered the lowest weighted mean value of 2.04, with a standard deviation of 0.41, and is likewise interpreted as Satisfactory.

This suggests that although ChatGPT is utilized, it is less commonly used specifically for completing assignments. Overall, the weighted mean for this indicator is 2.22, with a standard deviation of 1.26, interpreted as Satisfactory. This implies that respondents moderately utilize ChatGPT in supporting their mathematics learning. The finding aligns with Onal et al. (2025), who reported that higher education students use ChatGPT moderately or occasionally for specific tasks like comprehension and assistance rather than constant dependency. The findings imply that ChatGPT is not yet a regular tool among most respondents, but it’s still utilized when needed for academic purposes.

Students may use ChatGPT for understanding lessons, analyzing concepts, answering assignments, and solving mathematical problems whenever they encounter difficulties. Moreover, the relatively lower utilization for assignments and the overall “Satisfactory” rating suggest that students do not fully depend on ChatGPT as their primary learning source. This supports the observations of Wang & Fan (2025), who found the wide variability in how often students use ChatGPT, often leaning toward selective or occasional use rather than constant engagement.

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The results may also imply that students still prefer traditional learning sources such as teachers, textbooks, classmates, and personal analysis, as reflected in the moderate level of usage. At the same time, the data indicate that students recognize the usefulness of ChatGPT as a supplementary tool that can provide quick explanations and guidance when needed. Therefore, the findings suggest that ChatGPT is effective as an additional support system in mathematics education because it offers accessible and immediate assistance. However, it remains secondary to conventional teaching methods and is used by students only when necessary.

Purpose of Use

The extent of ChatGPT utilization among BSEd Mathematics students at Colegio de Santa Rita de San Carlos, Incorporated, in terms of its purpose. The statement "I use ChatGPT to improve my understanding of mathematical concepts "recorded the highest weighted mean of 2.72 with a standard deviation of 0.54, interpreted as Very Satisfactory. These results suggest that students mainly rely on ChatGPT to strengthen their conceptual understanding of mathematics.

On the other hand, the statement "I employ ChatGPT to verify my answers toa given mathematical problem" and "I use ChatGPT to practice mathematical exercises" both obtained the lowest weighted mean value of 2.43, with standard deviations of 0.52 and 0.51, respectively, and are interpreted as Satisfactory. This indicates that students use ChatGPT less frequently for checking answers and practicing compared to conceptual learning and guidance. The overall weighted mean for this indicator is 2.53, with a standard deviation of 1.44, interpreted as Very Satisfactory. This implies that ChatGPT is widely used for various academic purposes, particularly in understanding concepts, clarifying challenging steps, and assisting in problem-solving.

The findings reveal that students generally demonstrate a high level of ChatGPT utilization for academic purposes, as reflected in the overall Very Satisfactory rating. The results highlight that students primarily utilize ChatGPT to improve their understanding of mathematical concepts, clarify difficult steps, and guide them in solving complex problems. This indicates that ChatGPT serves as an effective academic support tool, particularly in enhancing conceptual understanding and problem-solving skills. This aligns with the study of Ashraf et al. (2025), which found that students primarily use ChatGPT to clarify difficult topics and confirm answers rather than to replace the learning process entirely.

This supports the role of ChatGPT as a supplementary academic tool rather than a primary source of instruction. Furthermore, the presence of lower mean values in areas such as verifying answers and practicing exercises implies that some students still prefer to complete tasks independently and use ChatGPT only when necessary. This reflects a balanced use of the tool, where students integrate it into their learning process without overdependence.

This observation is supported by Suwahyu et al. (2025), who reported that ChatGPT's compatibility and task support contribute to student performance, as it is mainly used for understanding content and assisting in task completion rather than replacing instruction. Similarly, Onal et al. (2025) found that students use ChatGPT for specific academic purposes such as comprehension, brainstorming, and clarification, even if they do not use it all the time, highlighting its role in purposeful and selective learning.

The overall results indicate that ChatGPT serves a supportive function among BSEd Mathematics student. It is mainly used as a tool for understanding concepts, guiding problem-solving, verifying answers, and practicing skills. It highlights the necessity of students using technology in conjunction with their own work and skills in thinking critically to fully understand and apply the mathematical concepts.

Support Services

The utilization of ChatGPT among BSEd Mathematics students at Colegio de Santa Rita de San Carlos, Incorporated, in terms of Support services. The item "I receive a step-by-step explanation from ChatGPT." obtained the highest weighted mean value of 2.72, with a standard deviation of 0.59, and is interpreted as Very Satisfactory. This indicates that respondents place high value on comprehensive and guided explanations when studying mathematics.

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Meanwhile, the item "I get worked-out examples from ChatGPT." garnered the lowest weighted mean value of 2.46, with a standard deviation of 0.51, and is likewise interpreted as Satisfactory. This indicates that although ChatGPT is useful, worked-out examples are an underutilized support service. Overall, the weighted mean for this indicator is 2.59, with a standard deviation of 1.47, interpreted as Very Satisfactory. This implies that respondents moderately utilize ChatGPT in supporting their mathematics learning. This is supported by the study of Kasnecci et al. (2023), which highlights that ChatGPT is somewhat effective in delivering step-by-step methods and explanations as resulted in the study with the highest mean (Very Satisfactory). This study confirms that the guided explanations provided by ChatGPT helps to improve the understanding of the students in complex subjects specifically in Mathematics.

Moreover, another study by Zhai (2023) stated that students tend to use ChatGPT more for clarification and explanation rather than practice-based learning, such as asking for practice tasks and to provide for more examples. This corresponds to the results where worked-out examples got the lowest weighted mean, indicating that it is infrequently used. The overall results indicate that ChatGPT supports learners by giving hints and explanations but not all features are maximized by students. It is mainly used as a tool for step-by-step explanation, feedback, and alternative strategies. It highlights that students must learn to maximize the utilization of ChatGPT for better support service that the said Artificial Intelligence could provide.

Level of Academic Performance of BSED Math Students based onthe General Weighted Average (GWA) of Final Grades in the First Semester.

The General Weighted Average (GWA) of final grades of BSEd Mathematics students at Colegio de Santa Rita de San Carlos, Incorporated, during the first semester, categorized by year level. The results reveal that the 3rdyear and 4th year obtained the highest weighted mean value of 3.5, with a standard deviation of 0.75 for the 3rd year and 0.7 for the 4th year, and is interpreted as Outstanding. This indicates that most of the respondents got an Outstanding and Very Satisfactory grade in mathematics.

Meanwhile, the 1st year students garnered the lowest weighted mean value of 2.9, with a standard deviation of 0.63, and this is interpreted as Very Satisfactory. This suggests that although some got outstanding and a very satisfactory grade, there are still some students who got a grade of 90-80. Overall, the weighted mean for this indicator is 3.39, with a standard deviation of 0.73, interpreted as Outstanding. This implies that respondents moderately utilize ChatGPT in supporting their mathematics learning. This result is also supported by the study of Zhai (2023), this study shows and explains that ChatGPT can enhance academic performance by providing any help that the student would ask such as Explanation, checking of answers, and providing more examples and practice tasks. This supports the result where students (especially 3rd year and 4th year) received an outstanding GWA. Additionally, Firdaus et al. (2023) mentioned in their study that AI tools have a positive impact on students' grade, but its effectiveness varies depending on the experiences and familiarity of the student.

This Match the result wherein 1st year students attained lower GWA, possibly due to less experience in using ChatGPT. The overall result shows that ChatGPT contributes to improving academic performance and higher grades. However, it is also indicated that ChatGPT benefits the more experienced individual. This highlights that ChatGPT is an effective academic support tool when used effectively and when students do not only rely on it.

Significant Relationship between the Utilization of ChatGPT and the Academic Performance of BSED Math Students.

The significant relationship among these variables. The analysis and computation of Pearson r produced a correlation value of 0.077 with degrees of freedom. This is identified as a very low or weak correlation. As can be seen, the p- value of 0.923 is greater than the significance level of 0.05 (p-value >0.05), indicating that there is no significant relationship between the use of ChatGPT and academic performance. The result indicates the acceptance of the hypothesis.

The finding was supported by Casio (2024), who stated that while students frequently perceived ChatGPT as helpful, their actual level of utilization demonstrated no statistically significant relationship with their academic

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performance. Correspondingly, in a meta-analysis of empirical studies conducted between 2022 and 2025, Sun and Zhou (2024) reported that outcomes varied considerably across different settings and disciplines, with several studies showing little to no significant relationship between ChatGPT and academic achievement measures. This supports the viewpoint that the relationship between the use of ChatGPT and actual academic performance can be weak or non-significant, depending on context and implementation (Ashraf et al., 2025).

Summary of Findings

1. Extent of the Utilization of ChatGPT among BSED Math Students at Colegio de Santa Rita de San Carlos, Incorporated, in terms of;

A. Frequency of use in terms of frequency of use, the findings revealed that the majority of responders fall under Rarely (45.79%), followed by Sometimes (33.16%), Never (17.63%), and Always (3.42%). This states that ChatGPT is not frequently utilized by the students and is generally accessed only when necessary.

This is supported by Table 2A, which shows an overall weighted mean of 2.2with a standard deviation of 1.26, interpreted as Satisfactory. This implies that respondents moderately utilize ChatGPT in supporting their mathematics learning, but not on a regular or intensive basis.

B. Purpose of use with regard to the purpose of use, the highest percentage is under Sometimes (42.89%), followed by Rarely (30.26%), Always (12.63%), and Never (11.84%). This signifies that students use ChatGPT in a moderate and situational manner, particularly for understanding mathematical concepts, clarifying steps, and solving problems. This is reflected in Table 2B, which shows an overall weighted mean of 2.53with a standard deviation of 1.44, interpreted as Very Satisfactory. This indicates ChatGPT is widely used for academic purposes, especially in improving conceptual understanding and assisting in problem-solving.

C. Support Services When it comes to support services, the majority of responses fall under Sometimes (45.26%), followed by Rarely (30.26%), Always (12.63%), and Never (11.84%). This indicates that ChatGPT is primarily used as a supplementary academic support tool, assisting when needed rather than consistently relied upon. Overall, the results imply that ChatGPT is used occasionally and not on regular basis by BSEd Mathematics students.

2. Level of Academic Performance of BSED Math Students in terms of; General Weighted Average (GWA) of Final Grades in the First Semester The findings revealed that the majority of students obtained Very Satisfactory (39 students) and Outstanding (34 students) ratings in their GWA of final grades during the first semester, while only a few fell under Satisfactory (2 students) and Fairly Satisfactory (1 student). The computed overall mean GWA of 3.39 for the first semester, interpreted as Outstanding, indicates that the students generally demonstrate a high level of academic performance. 3. Significant Relationship between the Utilization of ChatGPT and the Academic Performance of BSED Math Students The results showed a Pearson r value of 0.077, indicating a Very Weak Negative Correlation between ChatGPT utilization and academic performance. Furthermore, the computed p-value of 0.923 is greater than the 0.05 level of significance, which means that the relationship is not statistically significant. Therefore, the null hypothesis is accepted, indicating that there is no significant relationship between the utilization of ChatGPT and the academic performance of the students.

The Proposed ChatGPT-Integrated Mathematics Support Framework

The proposed ChatGPT-Integrated Mathematics Support Framework is anchored on the findings of the study, which revealed that ChatGPT is only occasionally utilized by BSEd Math students and shows no significant relationship with their academic performance. These results indicate a need for a more structured and guided approach in integrating ChatGPT into Mathematics learning.

The framework positions ChatGPT as a supplementary academic tool that supports and does not replace traditional learning methods such as teacher instruction, textbooks, and independent problem-solving. It aims to promote the responsible and purposeful use of ChatGPT to enhance understanding of students, provide additional explanations, and support their overall learning process. Overall, the framework seeks to ensure a balanced integration of technology and traditional instruction by guiding students to use ChatGPT effectively and ethically, which will strengthen their critical thinking and engagement in Mathematics learning. In line with this, a seminar

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on the proper etiquette of using ChatGPT in learning Mathematics will be proposed as its primary intervention strategy and to further operationalize the framework.

Seminar on the Proper Etiquette of Using ChatGPT in Learning Mathematics

Based on the findings, ChatGPT is employed by the students as a support tool, "Sometimes" or "Rarely", and its utilization illustrates no significant relationship with the academic performance of the BSEd Math students at Colegiode Santa Rita de San Carlos, Incorporated. To maximize the academic excellence of the students while maintaining academic integrity, the researcher proposes a Seminar on the Proper Etiquette of using ChatGPT in Learning Mathematics Framework. This framework recognizes that students will still depend on the traditional way of learning, such as textbooks, teachers, and research, while ChatGPT is presented as a supporting aid that enhances the learning process.

The Seminar on the Proper Etiquette of using ChatGPT in Learning Mathematics Framework will assist students in solving mathematical problems, allowing them to try first on their own, then utilize ChatGPT to check and verify their answers, while examining other possible solutions that provide a step-by-step process that is easy to understand. This process will benefit students to attain immediate feedback, develop critical thinking, and uphold digital citizenship. With the guided supervision of the teacher, the objective of the framework is to strengthen students' confidence in learning mathematics and intellectual honesty.

Ultimately, the framework aims to enhance the overall learning experience of the students through the combination of both human and ChatGPT support. By using ChatGPT thoughtfully, students can receive clearer processes, explanations, and assistance. Although there is no significant relationship between the use of ChatGPT and students 'academic performance, the framework suggests that with the correct integration of ChatGPT as an academic tool, students can be well prepared, confident, and active in learning mathematics.

CONCLUSION

Based on the indicated findings, the following conclusions are drawn:

1. The frequency of use of ChatGPT is generally low. The majority of the BSEd Math students employ ChatGPT when necessary, indicating that it is not part of their study routine. Students view ChatGPT as a supplementary tool rather than a primary source of learning.
2. The purpose of using ChatGPT is moderate, falling to Sometimes or Rarely. Students use the supplementary tool mainly for conceptual understanding, verifying solutions, and step-by-step guidance in solving mathematical problems. This shows that ChatGPT is an educational tool that does not replace the traditional way of learning.
3. ChatGPT is a useful tool that provides pedagogical support to students. However, these support services are utilized occasionally. This implies that while ChatGPT can assist, students prefer to rely strongly on teachers, textbooks, and their own critical thinking
4. The General Weighted Average (GWA) of the BSEd Math Students is excellent. The students' academic performance achieved Very Satisfactory to Outstanding ratings, showing that students maintain their grades regardless of their dependency on ChatGPT.
5. The results showed that there is no significant relationship between the utilization of ChatGPT and the academic performance of the BSEd Math students. The computed Pearson r value of 0.077 indicates a Very Weak Negative Correlation, and the p-value of 0.923 is greater than the level of significance, which illustrates that the use of ChatGPT does not strongly influence the General Weighted Average (GWA) of students. Therefore, the null hypothesis is accepted.

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Recommendations

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

School Administrators

It is recommended that the study's outcome encourage the school administrators to support the proper integration of ChatGPT in Mathematics students. This can also assist them in evaluating the effectiveness of using ChatGPT as a learning support tool.

Mathematics Teachers

It is suggested that teachers should give clear instructions on how to utilize ChatGPT efficiently and ethically. It is also possible to create some standards/rules on how the teacher should allow the utilization of ChatGPT, what are the appropriate ways to explain mathematical concepts, how step-by-step solutions of math problems should be obtained, and how to check solutions. This is supposed to be an aid and not to reduce the number of students' thinking and hard work.

Students

It is recommended that students make active learning strategies and only use ChatGPT as a learning resource to supplement their understanding of the mathematical concept, which may prevent the students from becoming overly reliant on ChatGPT. When it comes to critical thinking, analytical thinking, and problem-solving ability should be from the learning process. Also, ChatGPT maybe utilized only to clarify and review difficult topics and verify their answers, and students must be responsible for the proper utilization of ChatGPT in their academic performance.

Future Researchers

Based on the results, it is recommended to conduct further studies on the utilization of ChatGPT and its effect on the academic performance of BSEd Mathematics students, which also include additional variables, a larger scope of students, and different academic contexts in order to increase its validity and generalizability.

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