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Knowledge, Attitude, and Practices Towards Chatgpt of Senior High School Mathematics Learners

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ABSTRACT

This research examined the knowledge, attitudes, and practices (KAP) of senior high school students on the utilization of ChatGPT, showing that there are substantial differences depending on sex, academic strand, and academic performance. The results indicate that female students are more cautious when it comes to ethical issues and proper use of ChatGPT, while male students are comparatively less careful. Among scholarly strands, Humanities and Social Sciences (HUMSS) learners were more aware and utilized ChatGPT, especially because they constantly worked on writing and communication activities. On the other hand, STEM and TVL learners exhibited lower familiarity and utilization, perhaps because of differences in their curriculum or low perceived applicability. High-achieving students displayed a more critical and restrained usage, whereas low-performing students displayed greater reliance on ChatGPT, frequently substituting it for conventional search engines such as Google. These trends indicate a heterogeneous and uneven profile of AI literacy among the students. The findings reinforce the necessity for strand-specific and performance-sensitive strategies for digital learning, underscoring the significance of customized AI integration, ethical education, and digital citizenship. The results also form the basis for the creation of a ChatGPT guidebook for math students to promote effective and ethical use of the tool among diverse learner profiles.

Keywords – Chat GPT, Artificial Intelligence, Education, Knowledge, Attitude, Practices.

INTRODUCTION

Artificial Intelligence (AI) is now an evolutionary force across much of society, transforming sectors that enable education and learning, inform decision-making, and define individuals' engagements with technology. For education, AI introduces new prospects to enrich learning environments, personalize teaching, and enhance administrative operations. Effective implementation of AI in schools is, however, dependent on understanding the attitudes and perceptions of stakeholders, most importantly students. According to International Business Machines Corporation (IBM), Artificial intelligence, or AI, is a term referring to technology that enables computers and machines to learn and simulate human intelligence and problem-solving abilities. By itself or when integrated with other technologies (e.g., sensors, geolocation, robotics) AI can execute tasks which would otherwise need human intelligence or intervention. Digital assistants, GPS navigation, self-driving cars, and generative AI tools (such as Open AI's Chat GPT) are only a few examples of AI dominating the news and our daily lives.

The rapid development of artificial intelligence (AI) technologies has revolutionized the education system, with potential opportunities and challenges for students and teachers alike. One of the most prominent AI tools is ChatGPT, an OpenAI language model with the ability to create human-like text and aid in a range of academic work. Although the tool is becoming increasingly popular among students, its actual influence—especially in specific subjects such as mathematics—is not yet adequately researched. The study will investigate the knowledge, attitude, and practices (KAP) of senior high school mathematics students about ChatGPT to gain insights into the influence of such AI tools on learning behavior and academic performance. Mathematics is typically regarded as one of the most challenging subjects in senior high school. Students

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typically experience problem-solving, abstract thinking, and logical thinking as challenging. Therefore, the majority seek outside help, such as online help, to improve their understanding of mathematics. ChatGPT, being able to explain, solve problems, and provide step-by-step instructions, is becoming more and more a students' first choice. Nevertheless, how students comprehend (knowledge), perceive (attitude), and utilize (practices) this tool can be quite diverse. Such a variation emphasizes exploring how students are engaging with ChatGPT for mathematics education.

METHODS

The study used descriptive-comparative design to assess the knowledge, attitudes, and practices (KAP) of Grade 11 mathematics learners towards ChatGPT and to compare the variables based on their profiles. Descriptive statistics such as frequency, percentage, and mean were used in presenting data, while inferential statistics such as t-tests and ANOVA were used to test significant differences between groups. The subjects were 275 Grade 11 students from four public schools in Alicia, Isabela who are currently suing ChatGPT, selected through a pre-survey identifying ChatGPT users. The main data-gathering instrument was a validated questionnaire, adapted from Robledo et al. (2023), and pilot testing confirmed its reliability with a Cronbach's alpha of 0.929. Data collection was accomplished by securing the necessary clearances from Schools Division Office and personally distributing the questionnaires among chosen students. Statistical analysis involved descriptive statistics in presenting the data and inferential tests in determining significant differences in KAP across sex, strand, and grades in mathematics at first quarter.

RESULTS AND DISCUSSION

The study results give an in-depth analysis of students' profiles, knowledge, attitudes, and practices toward ChatGPT and how these vary by sex, academic strand, and academic performance. The demographic profile showed that female students outnumbered male students slightly, with most students enrolled in the STEM strand followed closely by HUMSS. Most students performed well in General Mathematics, with nearly three-quarters attaining a Very Satisfactory or Outstanding grade, indicative of high overall academic achievement among the respondents.

In terms of knowledge of ChatGPT, students demonstrated a high level of awareness, with a grand mean score of 3.86. They all agreed that ChatGPT is AI-powered, can generate human-like responses, and can be applied to facilitate academic tasks such as essay writing and transitioning to online learning environments. Agreement was most on ChatGPT's ability to generate essays and articles, followed by doubt on whether it is commercial or not, showing a lack of information on its paid and free versions.

The students also demonstrated a predominantly positive attitude towards ChatGPT, reflected by the grand mean of 3.84. They recognized its functionality for question answering and learning support but also expressed ethical awareness, agreeing that the utilization of ChatGPT should be controlled and supervised. Female students specifically expressed stronger agreement with regulation and education on correct use. These findings reflect a coexistence between excitement about the tool and ethical consideration for its impact.

At the practices, students reported use of ChatGPT positively, with a grand mean of 3.77. They used it considerably in generating preliminary ideas regarding subjects, demonstrating a strategic pattern of its use during learning. However, neutrality in response to potentially unethical application, like the utilization of paraphrasing tools to conceal AI usage, reveals that ethical concerns remain. Strand variations in study and performance also revealed that HUMSS students knew more about and were likely to use ChatGPT to a large degree than regular search engines such as Google Search. The lower-performing students used ChatGPT more, suggesting that it is used as a compensatory learning tool.

CONCLUSIONS

Students Have a Overall High Degree of Knowledge About ChatGPT. Most students showed a good grasp of ChatGPT's functions, particularly in creating human-like answers and helping with academic work like essay writing. The high mean scores indicate a high level of awareness of its use as an educational tool. There is still

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some confusion regarding its availability and commercial status, which suggests the need for better guidance on its terms of use.

Positive Attitude Coupled with Ethical Awareness. Students overall had a positive opinion of ChatGPT, appreciating its potential for learning and academic assistance. Nevertheless, they also showed apprehension regarding its ethical considerations. Significantly, most concurred that the use of ChatGPT needs to be controlled, and students must be taught about the dangers of excessive dependency. This equilibrium indicates that although students appreciate the instrument, they are also aware of prudent and ethical use.

ChatGPT is Used as a Supplementary Learning Tool. Practically, students had mainly indicated using ChatGPT as a research starting point or to come up with initial ideas. This suggests they are not entirely reliant on the tool but instead incorporate it into their general learning process. Some ethical uncertainty was reported when applying paraphrasing tools, and that could be an indicator of knowledge gaps regarding academic integrity when applying AI-generated content.

Differences Depend on Strand and Performance. Differences were seen in terms of knowledge, attitude, and practices between strands and performance levels, the research discovered. Students in HUMSS were more likely to use and familiarize themselves with ChatGPT, particularly over Google Search, the research learned. Lower-performing students were also found to be more likely to depend on ChatGPT, indicating it acts as a compensatory learning tool.

RECOMMENDATIONS

Based on the conclusion above, the following recommendations are suggested:

For Students: Students are encouraged to utilize ChatGPT as a enrichment for learning and not as a source of information or a means of malicious completion of academic tasks. They should be taught to critically assess AI-generated content and give proper citation, taking into account the fallibility of such applications. Digital literacy and ethical use of AI integration in student education is essential to create responsibility and sound judgment in utilization of new technologies.

For Teachers: Educators should be provided with professional development and workshops on how to implement AI tools like ChatGPT in a managed and pedagogically appropriate manner in their teaching. Educators should also develop guidebook that promote critical thinking and creativity to reduce the potential for AI misuse.

For School Administrators: School leaders must establish institutional policies that identify acceptable and unacceptable uses of AI tools in the academic curriculum. These policies must be communicated to all stakeholders clearly and updated periodically to reflect technological advancements. Schools must also invest in AI literacy training programs and integrate lessons on ethical use of technology into the curriculum so that students are prepared to meet an ever-changing digital future.

For Parents: Parents should sit down with their children to discuss the proper use of technology, including AI-powered tools like ChatGPT. If parents are aware of how such tools work and the advantages and disadvantages of using such tools, parents can monitor and advise their children's use of such platforms at home. Parental monitoring and involvement can help in an important way to determine ethical behavior among students' online activities.

For Future Researchers: Additional research is suggested to examine the long-term effects of the use of AI tools in schools, including how it affects student learning, academic honesty, and teacher pedagogy. Future research can also examine the development of school-based AI literacy initiatives and their success. Comparative analyses of regulated versus unregulated AI use across different learning contexts would be highly beneficial to inform policy and practice.

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