

Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students of Pangasinan State University – Lingayen Campus

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Abstract - This study was conducted to determine the extent of influence of using AI Chatbots in the writing skills of BSE Students of Pangasinan State University – Lingayen Campus. The time frame of the study is one (1) semester, from the period of February to June 2023. In order to distinguished the primary concern of the study, the Descriptive Method was employed using the statistical treatment of data wherein the weighted mean was used to determine the frequency and percentage distribution, also t-test was used to identify if there is a significant difference between the Reliability of AI Chatbots used by BSE Students and the Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students of Pangasinan State University – Lingayen Campus. The researchers conducted a pre-survey to determine who among the BSE Students are using AI chatbots, and the total population of students who are using AI chatbots are three hundred forty-four. The researchers used the Slovin's Formula to distinguished the total number of respondents that is one hundred eighty-five. The findings disclosed that the majority of BSE students at Pangasinan State University – Lingayen Campus are using AI chatbots. As to the AI Chatbots that were being used, majority of the respondents used Grammarly, next is Quillbot, and the ChatGPT. On the reliability of AI chatbots used by BSE students of Pangasinan State University – Lingayen Campus, students relied more on using AI chatbots to enhance their vocabulary. While on the extent of influence of using AI chatbots on the writing skills of the BSE students, Grammar and Vocabulary has the highest weighted mean because it provides students the appropriate spelling, punctuation, and capitalization, and also it provides vocabularies that are suited to their reading and understanding level. However, the statistical analysis involving independent t-test to compare t-statistic outcomes and the significant difference for a one tailed test shows that there is no significant difference between the reliability of AI chatbots used by the BSE Students and the extent of influence of using AI chatbots on the writing skills of BSE students at Pangasinan State University – Lingayen Campus.

Keywords – AI chatbots, extent of influence, BSE students, writing skills

INTRODUCTION

Technology has an enormous impact on our lives and education has no exception. It has a significant effect on both the teacher and the students. The emergence of new or modern technologies has undoubtedly influenced our lives. It opens up new opportunities for educators, students, and future teachers. The latest technological devices, such as tablets, computers, and laptops, have affected how we teach and study. Due to technological advancements, students can be more creative when doing their lessons, reports, assignments and presentations in class. Technology has also enhanced the chances for communication and collaboration. It is a vital tool

that may assist the students in improving their study habits from making it easier to develop instructional materials to providing new ways for the student to learn and communicate.

Artificial intelligence (AI) literacy is widely recognized as a new set of technological attitudes, abilities and competencies that people use AI effectively and ethically in everyday life (e.g., Burgsteiner et al., 2016; Kandlhofer et al., 2016; Long & Magerko, 2020). Therefore, a newly emerging term “AI literacy” has drawn the attention of researchers and educators to nurture the next generation to be digitally competent in AI skills and knowledge in order to be on a better footing for their future workplaces (Bawden, 2008).



As AI becomes more and more important in work settings and everyday life, researchers begin to define AI literacy based on the term 'literacy', which has been applied to define skill sets in varied disciplines (Long & Magerto, 2020; Ng et al., a, b). In the past, literacy was popularly understood as an ability to read and write (McBride, 2015). Nowadays, it has been extended to new arenas such as media, digital, information, computer and AI (Kong et al., 2021). Students who are equipped with these skills could use related technologies and computers in very advanced ways to learn new knowledge and skills with their counterparts (Bell, 2010; Griffin & Care, 2014; Larson & Miller, 2011).

Due to the fact that AI (artificial intelligence) has emerged as one of the essential technical skills in the twenty-first century, educators must integrate AI and literacy to provide students with fundamental abilities and mindsets that they need to live, learn and work in our digital world through AI-driven technologies.

Chatbots were viewed as a permanent fixture in online communication when it comes to retail and businesses. However, AI chatbots have been far different from any kinds of chatbots we usually know; this Artificial Intelligence focuses on what learners might need in their studies. According to the researchers, it began as simple programs to carry out basic conversation based on command prompts that had evolved into advanced computation systems, natural processing languages, and artificial intelligence. Chatbots could know not only to carry on a conversation with a human consumer but also facilitate the conversation and add substance to it.

Writing is one of the most important aspects of language acquisition, and educators, students and researchers ought to pay close attention to it. Writing has always been considered as an essential skill for learning the English language. Because it reinforces the grammatical structures, punctuation, and vocabulary that educators strive to teach their students. Writing is a great way to teach, inform, entertain one's behavior and educate oneself. The student's ability to write is also one of the essential skills that a student must have. Even the digital age has not reduced the need for writing. Be it emails, online chat conversations,

or website updates, all these require our writing skills.

The five macro-skills of communication, including writing, allow people to engage and convey their ideas, thoughts, and feelings in a language. Gepila (2017) believes that writing is the most challenging of the four macro skills to teach and learn. Writing skills need for a lot of work and the skillful integration of specific linguistic components like appropriate vocabulary, proper syntax, and sentence structure.

Artificial Intelligence or AI means that it is a software used by computers to mimic the aspects of human intelligence. While a chatbot is a computer program that uses artificial intelligence (AI) to understand questions and automate responses to them, simulating human conversation. AI chatbots for some students can be an easy-to-use, unbiased, 24/7 available solutions for simple educational, informative, and assistance tasks. When we say AI (Artificial intelligence) some individuals will eventually think about the tools students use to correct the errors in their written work. The study of using AI chatbots that is used by the students gives extent of influence of how AI chatbots might improve their writing skills.

In light of this, the researchers decided to conduct the study because it was essential to confirm the extent of the influence of using AI chatbots on the writing skills of the BSE students of Pangasinan State University – Lingayen Campus.

OBJECTIVES OF THE STUDY

The purpose of this study is to determine the Extent of Influence of using AI Chatbots in the Writing Skills of BSE Students of Pangasinan State University – Lingayen Campus.

Specifically, it sought to identify the: 1) Profile of the Respondents; 2) Reliability of AI Chatbots used by BSE Students of Pangasinan State University – Lingayen Campus in terms of: Grammar; Sentence Structure; Vocabularies; and Content and Organization; and 3) Extent of influence of using AI chatbots in the Writing Skills of BSE Students of Pangasinan State University – Lingayen Campus.

MATERIALS AND METHODS

The researchers made use of descriptive method in answering the problems stated for this research, it used the five point-Likert-scale.

This research study was conducted through administering an e-questionnaire using Google Forms to the different majors of the Bachelor of Secondary Education Students in Pangasinan State University – Lingayen Campus. Pangasinan State University is known for providing high-quality education. It is well-known for having administrators and faculty members who are zealous about providing exceptional community service. PSU continues to adhere to numerous quality assurance that assist to reach its academic goals in order to ensure that goals and objectives are met. Conducting a research study in this educational institution is a privilege to the field of education. The researchers used stratified random sampling.

RESULTS AND DISCUSSION

- **Profile**

The 185 respondents are from the different majors of BSE students who are enrolled at Pangasinan State University Lingayen Campus. The researchers used Stratified Random Sampling and then used the Slovin’s Formula to get the number of the respondents of the study. The 32.43% of the respondents who answered in the survey questionnaire were from the III BSE English, 12.97% of the respondents were from II BTLED, 11.35% of the respondents were from III BSE Social Studies, 8.11% of the respondents were from I BSE Social Studies, 7.57% of the respondents were from IV BTLED, 7.03% of the respondents were from II BSE Social Studies, 5.95% of the respondents were from III BSE Science, 3.78% of the respondents were from III BTLED, 3.24% of the respondents were from III BSE Filipino, 2.7% of the respondents were from II BSE English, 2.7% of the respondents were from IV BSE Social Studies, and 2.16% of the respondents were from I BSE Social Studies.

The majority of the respondents answered Grammarly in terms of the AI chatbots being used that consist of 98 and is equivalent to 52.97%, next is Quillbot that is consist of 66 and is equivalent to

35.68%, and ChatGPT that is consist of 21 and is equivalent to 11.35%.

- Reliability of AI Chatbots used by BSE Students in terms of Grammar

a. Grammar	W M	DR
1. Using AI Chatbot(s) helps me understand the correct usage of abstract nouns.	4.0 8	Agree
2. Using AI Chatbot(s) helps me understand the correct usage of the subject-verb agreement.	4.0 4	Agree
3. Using AI Chatbot(s) helps me understand the correct usage of spellings, punctuations, and capitalizations.	4.1 8	Agree
4. Using AI Chatbot(s) helps me understand the correct usage of gerunds and infinitives correctly.	4.0 1	Agree
5. Using AI Chatbot(s) helps me to check if the constructed sentence follows the rules governing how language is well-constructed.	4.1 0	Agree
OWM	4.0 8	Agree

The table shows the Reliability of AI Chatbots used by BSE Students in terms of Grammar in the different indicators. It is shown that statement number 3, “Using AI Chatbot(s) helps me understand the correct usage of spellings, punctuations, and capitalizations.”, got the highest ranking with a weighted mean of 4.18 and with a descriptive rating of Agree, based on the given data that is shown. While the lowest is, “Using AI Chatbot(s) helps me understand the correct usage of gerunds and infinitives correctly.”, with a weighted mean of 4.01, and with a descriptive rating of Agree. The overall weighted mean in the table 6 is 4.08 with a descriptive rating of Agree.

- Reliability of AI Chatbots used by BSE Students in terms of Sentence Structure

b. Sentence Structure	WM	DR
1. Using AI Chatbot(s) helps me to have an accurate, relevant, and relatively up to date information with real world application.	3.90	Agree
2. Using AI Chatbot(s) helps me to have a clear and spontaneous layout, I can easily find the information needed.	3.90	Agree
3. Using AI Chatbot(s) helps me to logically support and develop the main point when I write a paragraph.	3.96	Agree
4. Using AI Chatbot(s) helps me to improve my writing skills by providing sentences and paragraphs that are well organized.	4.12	Agree
5. Using AI Chatbot(s) helps me to have responses that is useful, appropriate, and informative.	3.99	Agree
OWM	3.97	Agree

The table shows the Reliability of AI Chatbots used by BSE Students in terms of Sentence Structure in the different indicators. It is shown that statement number 4, “Using AI Chatbot(s) helps me to improve my writing skills by providing sentences and paragraphs that are well organized.”, got the highest ranking with a weighted mean of 4.12 and with a descriptive rating of Agree, based on the given data that is shown. While the lowest is, “Using AI Chatbot(s) helps me to have an accurate, relevant, and relatively up to date information with real world application.”, and also the same with “Using AI Chatbot(s) helps me to have a clear and spontaneous layout, I can easily find the information needed.”, with a weighted mean of 3.90, and with a descriptive rating of

Agree. The overall weighted mean in the table 7 is 3.97 with a descriptive rating of Agree.

- Reliability of AI Chatbots used by BSE Students in terms of Vocabularies

c. Vocabularies	WM	DR
1. Using AI Chatbot(s) helps me to provide vocabularies that are suited to my reading and understanding level.	4.12	Agree
2. Using AI Chatbot(s) helps me to provide words that can be easily learned by identifying its parts of speech.	4.05	Agree
3. Using AI Chatbot(s) helps me to provide the correct words connected to my written work.	4.15	Agree
4. Using AI Chatbot(s) helps me to provide words that are not common and hard to understand.	4.07	Agree
5. Using AI Chatbot(s) helps me to provide appropriate vocabulary and word forms to effectively communicate with others.	4.08	Agree
OWM	4.09	Agree

The table shows the Reliability of AI Chatbots used by BSE Students in terms of Vocabularies in the different indicators. It is shown that statement number 3, “Using AI Chatbot(s) helps me to provide the correct words connected to my written work.”, got the highest ranking with a weighted mean of 4.15 and with a descriptive rating of Agree, based on the given data that is shown. While the lowest is, “Using AI Chatbot(s) helps me to provide words that can be easily learned by identifying its parts of speech.”, with a weighted mean of 4.05, and with a descriptive rating of Agree. The overall weighted mean in the table 8 is 4.09 with a descriptive rating of Agree.

- Reliability of AI Chatbots used by BSE Students in terms of Content and Organization

- Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students in terms of Grammar

d. Content and Organization	WM	DR
1. Using AI Chatbot(s) helps me to provide answers that are presented in a logical and coherent manner.	3.83	Agree
2. Using AI Chatbot(s) helps me to provide answers that are into simpler terms.	3.92	Agree
3. Using AI Chatbot(s) helps me to provide multiple perspectives on a given topic.	3.88	Agree
4. Using AI Chatbot(s) helps me to have answers that are relevant, well-organized and in a clear and logical sequence.	3.86	Agree
5. Using AI Chatbot(s) helps me to have answers that are presented with originality and in a creative and interesting way.	3.86	Agree
OWM	3.87	Agree

The table shows the Reliability of AI Chatbots used by BSE Students in terms of Content and Organization in the different indicators. It is shown that statement number 2, “Using AI Chatbot(s) helps me to provide answers that are into simpler terms.”, got the highest ranking with a weighted mean of 3.92 and with a descriptive rating of Agree, based on the given data that is shown. While the lowest is, “Using AI Chatbot(s) helps me to provide answers that are presented in a logical and coherent manner.”, with a weighted mean of 3.83, and with a descriptive rating of Agree. The overall weighted mean in the table 9 is 3.87 with a descriptive rating of Agree.

a. Grammar	WM	DR
1. The AI Chatbot(s) provides correct use of abstract nouns correctly.	3.96	Agree
2. The AI Chatbot(s) provides the correct usage of the subject-verb agreement.	3.96	Agree
3. The AI Chatbot(s) provides appropriate spellings, punctuations, and capitalizations.	4.12	Agree
4. The AI Chatbot(s) provides appropriate gerunds and infinitives correctly.	3.91	Agree
5. The AI Chatbot(s) checks if the constructed sentence follows the rules governing how language is well-constructed.	3.98	Agree
OWM	3.99	Agree

The table shows the Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students in terms of Grammar in the different indicators. It is shown that statement number 3, “The AI Chatbot(s) provides appropriate spellings, punctuations, and capitalizations.”, got the highest ranking with a weighted mean of 4.12 and with a descriptive rating of Agree, based on the given data that is shown. While the lowest is, “The AI Chatbot(s) provides appropriate gerunds and infinitives correctly.”, with a weighted mean of 3.91, and with a descriptive rating of Agree. The overall weighted mean in the table 10 is 3.99 with a descriptive rating of Agree.

- Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students in terms of Sentence Structure

b. Sentence Structure	WM	DR
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1. The AI Chatbot(s) provides accurate, relevant, and relatively up to date information with real world application.	3.84	Agree
2. The AI Chatbot(s) provides clear and spontaneous layout, I can easily find the information needed.	3.86	Agree
3. The AI Chatbot(s) can logically support and develop the main point when I write a paragraph.	3.95	Agree
4. The AI Chatbot(s) helps to improve the writing skills by providing sentences and paragraphs that are well organized.	4.02	Agree
5. The AI Chatbot(s) provides responses that is useful, appropriate, and informative.	3.99	Agree
OWM	3.93	Agree

The table shows the Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students in terms of Sentence Structure in the different indicators. It is shown that statement number 4, “The AI Chatbot(s) helps to improve the writing skills by providing sentences and paragraphs that are well organized.”, got the highest ranking with a weighted mean of 4.02 and with a descriptive rating of Agree, based on the given data that is shown. While the lowest is, “The AI Chatbot(s) provides accurate, relevant, and relatively up to date information with real world application.”, with a weighted mean of 3.84, and with a descriptive rating of Agree. The overall weighted mean in the table 11 is 3.93 with a descriptive rating of Agree.

- Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students in terms of Vocabularies

c. Vocabularies	WM	DR
1. The AI Chatbot(s) provides vocabularies	4.03	Agree

that are suited to my reading and understanding level.		
2. The AI Chatbot(s) provides words that can be easily learned by identifying its parts of speech.	3.95	Agree
3. The AI Chatbot(s) uses correct words connected to my written work.	4.03	Agree
4. The AI Chatbot(s) provides words that are not common and hard to understand.	3.91	Agree
5. The AI Chatbot(s) uses appropriate vocabulary and word forms to effectively communicate with others.	4.01	Agree
OWM	3.99	Agree

The table shows the Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students in terms of Vocabularies in the different indicators. It is shown that statement number 1, “The AI Chatbot(s) provides vocabularies that are suited to my reading and understanding level.”, and the same with statement number 3, “The AI Chatbot(s) uses correct words connected to my written work.”, got the highest ranking with a weighted mean of 4.03 and with a descriptive rating of Agree, based on the given data that is shown. While the lowest is, “The AI Chatbot(s) provides words that are not common and hard to understand.”, with a weighted mean of 3.91, and with a descriptive rating of Agree. The overall weighted mean in the table 12 is 3.99 with a descriptive rating of Agree.

- Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students in terms of Content and Organization

d. Content and Organization	WM	DR
1. The AI Chatbot(s) provides answers that	3.85	Agree

are presented in a logical and coherent manner.		
2. The AI Chatbot(s) provides answers that are into simpler terms.	3.96	Agree
3. The AI Chatbot(s) provides multiple perspectives on a given topic.	3.88	Agree
4. The AI Chatbot(s) provides answers that are relevant, well-organized and in a clear and logical sequence.	3.88	Agree
5. The AI Chatbot(s) provides answers that are presented with originality and in a creative and interesting way.	3.87	Agree
OWM	3.9	Agree

The table shows the Extent of Influence of Using AI Chatbots in the Writing Skills of BSE Students in terms of Content and Organization in the different indicators. It is shown that statement number 2, “The AI Chatbot(s) provides answers that are into simpler terms.”, got the highest ranking with a weighted mean of 3.96 and with a descriptive rating of Agree, based on the given data that is shown. While the lowest is, “The AI Chatbot(s) provides answers that are presented in a logical and coherent manner.”, with a weighted mean of 3.85, and with a descriptive rating of Agree. The overall weighted mean in the table 13 is 3.9 with a descriptive rating of Agree.

CONCLUSION AND RECOMMENDATION

The several major characteristics of AI chatbots' influenced the students' writing skills may be noticed. AI chatbots provide students with fast individualized feedback on their writings, assisting them in detecting and correcting errors in real time. When opposed to previous approaches, this rapid feedback system helps pupils to recognize their mistakes and develop their writing abilities faster.

Additionally, AI chatbots may be developed to deliver focused training and suggestions for development depending on the specific needs of the students. It can analyze text contents, grammar, vocabulary, sentence structure and make specific recommendations to improve the essay's quality. This personalized approach assists students in addressing their weaknesses and concentrating on areas that requires improvement, resulting in more effective learning outcomes.

Students benefit from continuous engagement with AI Chatbots because it creates a conducive learning environment. They can hone their writing skills in a non-judgmental setting, free of criticism or embarrassment. This encourages the students to try new things, take risks, and explore creative possibilities, which leads to increased their confidence in their writing skills.

Furthermore, the ease of use and accessibility of AI Chatbots contribute significantly to their growing influence. Students may connect with these AI Chatbots anytime and from any location, allowing for more flexible learning options. Students may practice their writing skills with self-paced instruction, supporting autonomous learning and autonomy. Finally, instructors will be able to track the students' development over time because of AI chatbots' data collecting capabilities. The teachers can discover frequent main points and plan focused interventions by examining student writing performance patterns and trends.

In conclusion, AI chatbots have a considerable influence on the students' writing skills. The ability to provide immediate feedback, provide individualized instruction, and create a supportive learning environment all leads to better writing skills and language development. AI Chatbots' effect is growing due to their convenience and accessibility. The convenience and accessibility of AI chatbots continues to increase their impact, while data-driven insights enable educators to enhance teaching practices.

- Based on the summary of findings and conclusions drawn, the following recommendations are strongly suggested:
 - 1) AI chatbot integration, the Pangasinan State University - Lingayen Campus should consider incorporating AI chatbots

into the classes for BSE scholars. This integration should be enforced across different writing courses and assignments to provide consistent support and feedback to the students.

- 2) Training and support for preceptors, the faculty members should receive training and support to effectively use AI chatbots in their teaching practice. They should be familiar with the features and functions of chatbots and trained to integrate them into their assignment plans and assessment systems.
- 3) Customization and personalization, the AI chatbots should be further developed to provide individualized feedback and suggestions to meet the specific needs and learning styles of BSE scholars. This can be achieved by integrating natural language processing capabilities and tailoring chatbot responses to each student's proficiency level.
- 4) Continuous evaluation and enhancement, regular evaluations and assessments should be conducted to measure the effectiveness of AI chatbots in improving the writing skills. Feedback from students and faculty should be collected to identify areas for improvement and upgrade the functionality of the chatbot accordingly.
- 5) Ethical considerations, in here it is important to establish programs and protocols for the ethical use of AI chatbots. Measures should be taken to ensure student privacy and data security, and chatbots should adhere to ethical norms in their content and interactions.

By implementing these recommendations, Pangasinan State University Lingayen Campus can maximize the potential of AI chatbots to enhance the writing skills of BSE scholars and create a more engaging and interactive learning environment.

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