Learning With AI: The Impact of ChatGPT and QuillBot to Approaches to Learning (ATL) Skills of Students

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Article Info

ABSTRACT

Purpose of the study: This study aimed to determine the experiences and perspectives of students of Second Language English (ESL) or English as Foreign Language (EFL) Year 2 International Baccalaureate Diploma Programme (IB DP), on how Artificial Intelligence - powered assisted tools impact their Approaches to Learning (ATL) skills.

Methodology: This study adopted a narrative approach, an appropriate theoretical basis with Braun and Clarke's Thematic Analysis for qualitative data to uncover codes, sub themes and themes. The method used to gather data was a face-to-face Focus Group Discussion (FGD) with thirteen Year 2 IB DP students (Grade 12) participants. The FGD was recorded and transcribed.

Main Findings: The use of Artificial Intelligence tools had positive impact to a lesser extent and temporarily helpful on their thinking, research and writing skills, with highly positive effect to self-management skills but detrimental in the long term. Overall, AI tools can cause adverse effects on the users, but if it is properly integrated and correctly use with appropriate guidelines, AI tools have the potential to be beneficial for learners.

Novelty/Originality of this study: This study explores the impact of specific AI tools, ChatGPT and QuillBot, on the Approaches to Learning skills of students at an IB world school. This study focused on writing, thinking, research, and self-management skills from the perspective of students, themselves, hence, offering insights how AI tools enhance or degrade skills that could shape future educational policies.

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1. INTRODUCTION

The International Baccalaureate Diploma Programme (IB DP) is well known program for its thorough curriculum that focuses on holistic education and development of well-balanced learners for 16-19 year old students [1]. The program is recognized for its concept-driven and inquiry-based pedagogical frameworks that strengthen learners' knowledge, cognitive skills, character, and values [2]. Students are also grounded in the Approaches to Learning (ATL) framework, which includes five core skill areas: thinking, research, self-management, communication, and social skills [3]. As part of the rigorous curriculum it offers, assessments

involve massive writing which require students to write authentically reflecting their own abilities. Consequently, studies have uncovered the cognitive challenges of International Baccalaureate. According to the examples from Gan [4] and Wright and Lee [5], learners find it difficult to cope with the International Baccalaureate Diploma Programme's demands for independent, inquiry, critical thinking and writing skills. Thus, AI tools like ChatGPT and Quillbot are becoming more popular among learners because these tools offer quick, well-written English text.

Quantitative data has shown ChatGPT's popularity which garnered more than one million subscribers within the first week of its launch [6] and has reached 100 million users two months after [7], while Quillbot currently has 30,000,000 users globally, considered one of the fastest-growing writing tools available for language learners [8]. ChatGPT, an AI tool launched in November 2022 is a modernized chatbot with the ability to understand and interpret statements, answer questions, and generate responses with a huge resemblance to natural human language [9]. Likewise, Quillbot, an AI tool was launched few years earlier and has also become a popular AI-powered paraphrase and rewriting tool for English-language learners.

According to a study by Haensch et al. [10], students have a positive outlook on ChatGPT such as writing essays and other texts, providing code, and answering question. A related study by Mohammed et al. [11], also looked at students and teachers' perception on how ChatGPT impacts learning English. The findings conclude that ChatGPT mainly inspires learners to enhance their reading and writing competencies. The respondents expressed neutral opinions about the influence that ChatGPT has on the listening and speaking skills development. In conjunction, Nguyen [12] claimed in her study that Quillbot has a positive impact in the short-term paraphrasing skills of English major college students in Vietnam, but has yet to identify the long-term impact on their writing abilities. These findings emphasize the relevance of ChatGPT and Quillbot in honing key Approaches to Learning skills, particularly communication and research, by encouraging students to engage more actively with reading and writing tasks. Educators then should proactively integrate these into instruction as long as future studies and policies address the issues with urgency and clarity.

On the contrary, other studies have shown that these AI tools could lead to adverse impacts to learners. As claimed by Kasneci et al. [13] that ChatGPT simplifies the attainment of answers which can encourage laziness and downgrading of critical thinking skills while Aqilah [14] stated that negative effects of using or relying too much on Quillbot as a paraphrasing makes learners lazy and lead them to exert less effort to revise and create their own work which hinder the goal of International Baccalaureate to hone students with critical thinking skills and well-developed agency. Thus, presenting the adverse effect on the skills of the Approaches to Learning Framework.

With its pros and cons, further quantitative data have shown variation in student's preferences but a stark percentage shows usage of it. From the study of Kholis et al. [15], it shows that 44.4% of students frequently used AI tools in their academic writing tasks while 37% of students reported using it occasionally. The remaining 18.5% of students always use AI tools in their academic writing. According to the survey, the use of AI in academic writing classes was considered effective with the percentage of 33.3%. Those who chose neutral represented 33.3%, while 25.9% of students stated that AI was very effective in academic writing and the remaining 7.4% said it was not [15].

Conclusively, the ideas that have been exemplified in numerous studies conducted about Artificial Intelligence tools such as ChatGPT, Quillbot and other AI tools in the field of education previously considered the teachers and learners' perspective in general context such as K 12 and university. However, there has not been a study identified that clearly focused on the perspectives of Year 2 International Baccalaureate Diploma Programme students doing specific internal assessments, Extended Essay and Theory of Knowledge essay who are EFL or ESL learners in Indonesia - this is where the research gap lies. The lack of an in-depth qualitative study focusing on learners' experience and perspectives on how ChatGPT and Quillbot have impacted the specific category of approaches to learning skills identified by the International Baccalaureate: Thinking, Research and Self-Management Skills, remains unexplored yet.

Through this research, the recommendations of existing studies to investigate more specific context or case study of learners dealing with researches and writing tasks were dealt with. Hence, this study aimed to determine the experiences and perspectives of Year 2 English as Second Language (ESL) or English as Foreign Language (EFL) IB Diploma Programme students on how AI-powered assisted tools impact their ATL skills. Furthermore, given the rising data of students using these AI tools, it seems that these have become regular tools for learning, thus, this study proposed for an urgency from educational policymakers and schools to develop effective and detailed plans that will help AI tools such as ChatGPT and QuillBot make positive contributions to school learning objectives while building up key competencies in an urgent matter.

This study also presents a timely and meaningful contributions to the literature on artificial intelligence (AI) in education, particularly within the context of the International Baccalaureate Diploma Programme (IB DP). By focusing on how AI tools are used by English as a Second Language (ESL) and English as a Foreign Language (EFL) learners, the research fills a gap in existing studies which often overlooks how AI influence students in the context of the academe. There is also a limited understanding of students' perceptions and

acceptance of artificial intelligence tools [16]. Thus, the study also extends existing work by explicitly emphasizing the integration of Approaches to Learning (ATL) and the role of AI in education framing AI use within the IB's Approaches to Learning (ATL) framework, highlighting how these tools can both support and challenge the strengthening of students' competencies, such as critical thinking, research, and self-management.

In terms of educational practice, the study provides an avenue on how tools like ChatGPT and Quillbot are shaping students' daily learning habits. Records showing the AI tools potential to improve the teaching and learning process, integrating AI in instruction presents paramount significance [17]. While these tools can serve as scaffolds guiding students overcome language barriers and enhance fluency of their writing, the risk of replacing in depth cognitive engagement when used uncritically is strongly evident. Hence, the results of this study can support educators to be proactive in designing learning experiences that guide students to use AI tools responsibly and purposefully.

Importantly, this study offers direct insights that can inform educational policymaking. The results lead to the need for clear, context-aware policies that pay attention to the benefits and limitations of AI use in the academe. As artificial intelligence becomes increasingly relevant to teaching and learning, having a thorough and planned policy guidelines and recommendations from various sources is essential [18]. Instead of banning AI tools or relying fully on detection software, policymakers can develop frameworks that promote responsible AI integration such as by integrating digital literacy and AI into the curriculum, creating clear guidelines on acceptable use, and training teachers to model proper usage and effective assessment of AI learning strategies.

The novelty of this research is its focus on the effects that AI tools, including ChatGPT and QuillBot, will have on Approaches to Learning (ATL) skills among student-participants. This study is important as it examined how AI is integrated into the academic routine of students, providing ample insight into how these technologies transform core competencies within an international setting of education. Moreso, this research effectively links traditional educational practices with modern technological developments and has valuable implications for the design of curriculum and strategies of assistance for students within the International Baccalaureate framework. Beyond this, schools need to establish clear policies and consequences regarding academic integrity, include training in source verification and fact-checking, and promote the use of AI as a supplement rather than as a replacement for traditional research.

The results of this study are of critical importance to different stakeholders, specifically, this will create an impact to the teachers for class instructions, tasks, and assessments being given to students. The findings holds the potential to significantly impact how teachers will strengthen student engagement. Also, the outcome of the study is significant as it may provide the academic leadership team with trusted feedback on the current extent of learners' use of artificial intelligence tools, specifically ChatGPT and Quillbot. Thus, would enable them to adapt an effective measure to ensure how these AI tools can be used to effectively improve student competencies and learning outcomes. This may also serve as a reference to future researchers who would also be interested in conducting a study about the Artificial Intelligence in education. The urgency of understanding and addressing these issues cannot be overstated as it has the potential to share the future of education.

Overall, this study aimed to explore the reasons why International Baccalaureate Diploma Programme students use Chatgpt and Quillbot, as well as the impact these tools have had on their academic requirements. Moreover, this research sought to understand how Chatgpt and Quillbot influenced students' ability to meet the academic demands of the International Baccalaureate Diploma Programme curriculum. Additionally, the study examined the implications of using these tools on the students' thinking skills, research skills, self-management skills and writing skills.

2.   THE COMPREHENSIVE THEORETICAL BASIS

Today's society is indeed surrounded and influenced by digital technology [19]. With that, this study is anchored on two essential theories related to technology which started in was introduced as early as the 80s: Seymour Papert's Constructionism and Marvin Minsky's Artificial Intelligence; with support from recent studies in the field of Artificial Intelligence and Learning: [20]'s Theory on human's cognitive capabilities and [21]'s Theory on AI and learners as a collaborators.

Seymour Papert's Constructionism which highlights the value of making and manipulating objects to think has proven to be a powerful educational approach to tackle the potential of technology in numerous educational settings. Papert in 1980 described the computer and technology as a central component of constructionist learning experiences to impart way in materials unavailable to the learner. Additionally, he envisioned computers and programming languages as mediating tools that could revolutionize how children think, solve problems and construct knowledge. Additionally, Ouyang and Jiao [21] claimed how Artificial Intelligence may have a radical impact on education if the principles which it utilizes to access and gain knowledge are made available to learners to enrich his/ her learning experiences. Looking at the present circumstances in the education sector more than 40 years since Papert's study was introduced, the massive influence of technology is strongly evident. Furthermore, his theory is linked to Marvin's Minsky, the founding

father of artificial intelligence and pioneer of thinking about thinking. Minsky had made a remarkable contribution in the field of computer science and machine learning whose legacy revolves around humanity's aim to replicate or imitate how human minds works through artificial intelligence [22]. Eventually, Minsky and Papert collaborated into the 1970s and early 1980s in developing theories of intelligence and radical approaches to education that focused on teaching children to utilize technology and AI as these have a massive impact to the learning and teaching process.

Fast forward to 2018, Tuomi claimed that Artificial Intelligence have indeed various implications for human cognitive abilities development are not slight. Firstly, AI can enhance currently existing cognitive abilities. Secondly, it can accelerate the rate of cognitive development and permit the acquisition of cognitive skills which would be impossible to develop without technological advancements. For example, mechanization of physical labor enabled achievements that had been considered beyond human capabilities; similarly, mechanization of cognitive processes opens opportunities that earlier were believed unattainable. Moreover, AI will decrease the importance of some human cognitive skills or render them irrelevant [23].

With that, in 2021, a paradigm introduced by Ouyang and Jiao stated that learning takes place through the support of Artificial Intelligence where learner becomes a collaborator. The AI system manifests its controlling power to serve as a supporting tool, while the learner works as collaborator with the system to focus on the individual learning process. This is grounded upon a cognitive and social constructivism perspective of learning, which reflects the principle that learning occurs when a learner interacts with people, information, and technology in socially situated contexts [24]-[26]. Correspondingly, in this paradigm, the AI system and the learner should build active and mutual interactions to maximize the function and benefit of the learner-centered and personalized learning. In particular, it acquires the developing and individualized information of learners in an attempt to adaptively refine the student model. In turn, learners act as partners in communicating with the AI system for superior and more efficient educational results [27], [28].

3. RESEARCH METHOD

3.1. Research Design

This study is qualitative research which aims to aid researchers to know the thoughts and feelings of participants, which provides an avenue to understand the meaning that people relate to their experiences [29]. A qualitative study is open ended and follows an inductive style of questioning where data gathering such as in-depth interview and focus group discussion involves highly open-ended question to probe and generate genuine response from participants [30]. Specifically, this study is a qualitative study with narrative approach focusing on the meaning and realization of individuals attached to a specific experience by sharing his/ her story/ experience [31]. Narrative research allows for understanding, describing, and acting within the context of individual experiences and the story shared is how we make sense of the phenomenon from the lens of the participants [32].

Moreover, in narrative research, the first step is identifying a phenomenon to explore that addresses the research problem. In the context of this study, the phenomenon is the proliferation of Artificial Intelligence tools, specifically, ChatGPT and Quillbot. The second step is to purposefully select individuals from whom we can learn about the phenomenon. In this study's context, the individuals / participants refer to the selected Grade 12 / Year 2 ESL/ EFL students of the International Baccaluareate Diploma Programme who admitted that they used ChatGPT and Quillbot. The third step includes collecting the story / experience from the individuals which will be done through the Focus Group Discussion. The fourth step is retelling the inputs of the participants which will be manifested in the analysis part of the study where themes/categories will be identified based on the data gathered. The last step will be the presentation and validation of the results.

3.2. Study Site

The data gathering was conducted through a face-to-face focus group discussion (FGD) with thirteen Year 2 International Baccaluareate Diploma Programme students (Grade 12) participants at Sekolah Global Indo-Asia. The schedule of the focus group discussion was set on the second week of December after the Semester Exam of the students. The focus group discussion lasted for 2 hours. The session was recorded and transcribed.

3.3. Research Participants and Sampling Technique

The participants of this study were composed of thirteen Year 2 ESL / EFL International Baccaluareate Diploma Programme students of Sekolah Global Indo-Asia for the Academic Year 2023-2024. The sampling technique that this research used for this study was purposive sampling. The number and names of the participants were based on the initial survey conducted by the researcher to know who were the students who have used ChatGPT and Quillbot in completing their Internal Assessments in their six subjects, Extended Essay, and Theory of Knowledge Essay.

3.4. Methods of Data Gathering

The researcher gathered the data mainly from conducting a focused group discussion involving 13 participants. Before the official gathering process, the first step undertaken was a short survey with International Baccaluareate Diploma Programme students to know who have used both ChatGPT and Quillbot to ensure that the participants are fit for the study. After confirming the previously mentioned inquiries, a verbal permission was asked from the participants/students whether they are willing to be part of a research study. Afterwards, when the definite number and list of possible participants/students have been gathered, a formal letter of information and request to the students, their parents, Head of School and Principal were submitted to ask for the official permission to interview the participants for this research.

A letter was sent to the Head of School and Principal to inform them that a study will be conducted about the usage of AI generated tool with the students enrolled in the school as participants and to ask permission to interview them. After the Head of School and Principal had given their approval, an individual formal letter of invitation/request was sent to the participants and their parents regarding the research. The purpose of asking permission from the students and their parents was to ensure that both have given official consent to be part of the study voluntarily to share their experiences. Once everyone had given the confirmation to be participants for this study, the focus group discussion was scheduled. During the focus group discussion, the researcher acted as the facilitator who asked questions to gather the necessary data for this research. The whole focus group discussion session was recorded, transcribed, and analyzed.

The initial part of transcriptions contained the preliminary data about the participants' responses to the questions. The interview questions have undergone validation by two university professors who were both experts in the field of Qualitative Study from Philippine Normal University Manila. The feedback by the validators can be found at the Appendix section of this study. The validation request was sent to them on the last week of November after the proposal defense of the researcher. Their validation feedback was given a few days after and the necessary revisions were made in the interview questions by the researcher before sending the official letter of to participants and conducting the focus group discussion itself.

Afterwards, the focus group discussion recording was transcribed and the results of the study was analyzed using the Six-Phase analytical process of Braun and Clarke's Thematic Analysis. The initial themes and analysis were sent once again to the validators to review and countercheck it with the transcription of the focus group discussion conducted to ensure the consistency and relevance of the data provided. After receiving their feedback, the necessary revisions were made particularly regarding the themes to ensure consistency and connection to the dataset

3.5. Methods of Data Analysis

This study employed the Braun and Clarke's Approach to Reflexive thematic analysis is an accessible and theoretically versatile interpretative framework for the analysis of qualitative data. It allows an investigator to search for and also examine patterns or themes within a particular data set [33]. Through this approach, themes were produced by organizing codes that the researcher interprets from the data [34]. The thematic analysis of Braun and Clarke involved determining the underlying theoretical assumptions in order to identify where their analysis is situated, why the analysis was situated as it is and why this conceptualization was appropriate to answering the research question [35]. In connection with this, the study employed experiential orientation which meant understanding the data to examine how a given phenomenon may be experienced by the participants. This involved investigating the meaning connected to the phenomenon by the respondents as well as the meaning or effect of the phenomenon to them. However, although these thoughts, feelings and experiences were subjectively and inter-subjectively (re)produced, the researcher would cede to the meaning shared by the participants [36]. The flow chart shows the six-phase process is shown on the below.
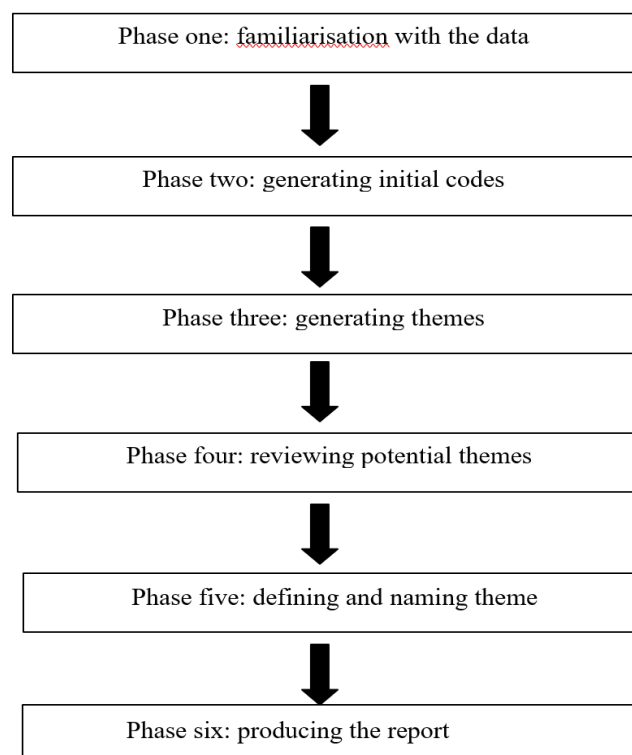
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┌─────────────────────────────────────────────────┐
│     Phase one: familiarisation with the data     │
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│     Phase two: generating initial codes           │
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│     Phase three: generating themes                │
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│     Phase four: reviewing potential themes         │
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│     Phase five: defining and naming theme          │
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│     Phase six: producing the report                │
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Figure 1: Six-Phase Analytical Process according to Braun and Clarke's Reflexive Thematic Analysis

Phase 1 or familiarization with the data, involved intensive reading and rereading of the entire dataset to gain an in-depth sense of the data collected. This is crucial for highlighting any relevant findings according to the research question. The next step, Phase 2 initial coding, identifies a first set of codes to develop brief descriptive or interpretive labels for significant information that pertains to the research question. These codes form the building blocks for themes. Thus, the researcher should proceed through the data set in a line by line manner, giving equal focus to both interesting and important data items which help the researcher to develop the themes. The codes are short, yet they contain enough detail to stand in their own right and disclose the underlying patterns that relate to the research topic [33], [37].

Phase 3, developing the themes, began after initial coding of all data items relevant to the research was completed. The focus at this stage shifted from an individual data item analysis to interpreting the dataset as a whole with regard to its meanings. The coded data were further examined to see how different codes might combine on the basis of similar meanings to form overarching themes or sub-themes. In Phase 4, Reviewing Potential Themes, the researcher was obligated to go through a recursive review of the proposed themes about both the coded data items and the complete data set [33]. In this stage, it was not uncommon to find that some of the themes elicited initially may not be appropriate interpretations of the data, or perhaps they would not answer the research question well, especially when the validators' feedback had been considered. In Phase 5, Defining and Naming the Themes, the researcher provided a detailed analysis of the thematic framework where every theme and sub-theme needed to be clearly stated in relation to both the dataset and the research question. As per Patton's [38] criteria, each theme should provide a coherent and consistent account of the data that cannot be told by other themes. Lastly, Phase 6 or producing the report involved the write up of the complete analysis which was interwoven into the entire process of the analysis [33].

4.   RESULTS AND DISCUSSION

This part presents the results of the study. For a systematic presentation, the results are divided into four sections namely: Reasons for students using ChatGPT and Quillbot; Effect of ChatGPT on the students' IB DP requirements; Effect of Quillbot on the students' IB DP requirements; and Implications of using ChatGPT and Quillbot in the students' Thinking, Research, Self- Management and Writing Skills.

4.1. Reasons of IB DP students for using ChatGPT and Quillbot

The students' responses regarding the reasons as to why they use ChatGPT can be categorized in two major themes: Brainstorming and Optimizing; while for Quillbot, there is only one major theme and that is paraphrasing. Table 1 below shows the themes and the reasons or underlying meanings.

Table 1 Reasons of IB DP students for using ChatGPT and Quillbot

Theme: Brainstorming (Chatgpt)	Theme: Optimizing (Chatgpt)	Theme: Paraphrasing (Quillbot)
Gives ideas	Speeds up production process	Resolve plagiarism issues quickly
Brainstorming	Efficiency in doing work	Can paraphrase text without doing manually
Generated ideas	Get better time management	Summary
Paraphrase		
Proofread my essays/ sentences		Making text formal
Write text		Improve academic writing
More ideas	Using perplexity as it provides us like sources and citations	Avoid AI detectors
Perplexity gives the main ideas	Use scribbr for referencing	
Use pink chat		

Based on Table 1, the participants have a common response about the reasons that led them to use ChatGPT for their requirements which encapsulates the themes of Brainstorming and Optimizing. For using ChatGPT, there were varied reasons including speeding up the work, being more efficient, looking for new ideas, paraphrasing their work, proofreading, summarizing or even writing it without doing it manually. From the abovementioned responses, it is evident that ChatGPT has been useful for the students in looking for new ideas and enhancing their writing outputs. This was confirmed by the result of a study conducted by Han et al. [39] claiming that AI-powered tools have the potential to provide students with personalized learning method, quick feedback, and generated ideas.

For Quillbot, the participants said that they were using it or they used it mainly for paraphrasing, avoiding AI detectors, resolving plagiarism issues, making their output more formal and academic level. This findings were also argued by Fitria [11] stating that Quillbot has also become a popular AI-powered paraphrase and rewriting tool for English-language learners. On the other hand, some participants said that they used other AI such as perplexity for brainstorming with sources, scribbr for referencing and pink chat as an alternative for ChatGPT.

4.2. Effect of ChatGPT to students' IB DP Requirements

The students' responses regarding the reasons as to the effects of ChatGPT to students' IB DP requirements can be categorized in one major theme which is ChatGPT contributing to the quality and completion of IB DP requirements. Table 2 below showed the reasons and its underlying meanings.

Table 2 ChatGPT contributing to the quality and completion of IB DP requirements

Theme: ChatGPT contributing to the quality and completion of IB DP requirements
Contribution of ChatGPT in students' internal assessment
Areas where in ChatGPT did not help the students
Subjects where ChatGPT and Quillbot can be used
Contribution of ChatGPT in students' external assessment
Perspective of students about the effectiveness sof chatgpt in terms of generating content
School task where ChatGPT has been useful
How ChatGPT and Quillbot improved the IB requirements

The majority of the participants have confirmed that ChatGPT aided them to finish, as well as to meet the deadlines of their requirements such as their Internal Assessments for six subjects, Extended Essay, Theory of Knowledge Essay and even some CAS reflections. Based on Table 2, it can be seen that there were several meanings that support the theme about how ChatGPT has contributed to improve the quality and completion of IB DP requirements. One participant mentioned that it helped him to breakdown the topic into subtopics to understand it better. Participants mentioned that they can use it to paraphrase their initial ideas while other

respondents stated that it helped them to explain concepts, methodology and background of study. Others claimed that they can generate and elaborate ideas, or make an outline which made their work faster and easier just like how humans do or even better. This idea was also proven by Lund [9] who claimed that chatbots such as Chatgpt and Quillbot has the ability to understand and interpret statements, respond to queries, and produce responses like natural human language. However, one student noted that there were certain subjects where ChatGPT was not very useful in looking for a specific information such as diagrams or graphs. This was confirmed by an earlier study conducted by Lo [40] who argued that AI tools lack the ability of learning new information or responses, generate incorrect responses at times which paved the way for students to engage in dishonesty.

On the other side, one participant mentioned that ChatGPT did not help him improve the quality of the work and comply with the deadline because ChatGPT cannot produce calculations which is needed for the Physics requirements. Students also mentioned several reasons that contribute to their external assessment like extended essay and theory of knowledge essay. One student claimed that it helped her to generate ideas for English Extended Essay. In addition, one participant also said that he used it to rephrase the conclusion part of his physics Extended Essay (EE) while another student shared that he used it to search for specific topics and prompts while another said that he used it to reduce the word count. This was supported by a study of Bilal et al. [41] claiming that Chatgpt helped to enhance writing proficiency and offered valuable support in improving grammar, vocabulary, and composition. Moreover, another respondent shared that it helped him to find the right explanation for diagrams, but it did not show the diagram itself as the explanation provided by ChatGPT was in words.

On the other hand, one student initially thought of using ChatGPT for calculation but it was not successful because the data were not complete and accurate. Under the meaning of perspective of students about the effectiveness of ChatGPT in terms of generating content, one student mentioned that it may not always be useful because the information cannot be used. Under school task where ChatGPT has been useful, majority agreed that this AI tool has been very useful for business assignments especially for short form answers and students said that they used it for citizenship exams especially if its project. On another note, a participant shared that it helped correct the grammar of his work while another participant claimed that the AI tool diversified his/her perspectives and humanize the works, especially for Theory of Knowledge subject. This was proven by another argument from Kostka and Tonceli [42] stating that the incorporation of ChatGPT into writing instruction show a positive influence on learners' grammar and vocabulary. One also said that it taught him to make the sentence constructions clearer especially when he wrote it to fit in all information. Furthermore one exception mentioned by participants was that ChatGPT and Quillbot may not be very effective to use in certain subjects due to its limitations such as mathematical expressions as also supported by Lo's study [40] claiming that one fundamental example of such limitation is in their ability to calculate the value of mathematical expressions.

4.3. Effect of Quillbot to students' IB DP Requirements

The students' responses regarding the reasons as to the effects of Quillbot to students' IB DP requirements can be categorized in one major theme which is Quillbot contributing to the quality and completion of IB DP requirements. Table 3 below shows the contribution to the IB DP requirmenets and its underlying meanings.

Table 3 Quillbot contributing to the quality and completion of IB DP requirements

Theme: Contribution of Quillbot in the quality and completion of requirements
Effectiveness of Quillbot in avoiding detection as AI generated content
How ChatGPT and Quillbot improved the IB requirements
Subject where chatgpt and quillbot were not useful

Participants claimed that Quillbot has been beneficial for them in certain ways although it was not extensive as how ChatGPT helped them. Moreover, one student claimed that Quillbot also has some limitations as it cannot generate other answers that require content. This was supported by a study conducted by Chui [43] arguing that though the tool is not perfect and users will still have to manually check for errors, thus, later, they have to decide if suggestions should be accepted or ignored. Thus, it is recommended that QuillBot should be used to supplement and not replace teacher feedback.

The table shows that participants expressed the contribution of Quillbot in the completion and enhancement of the students' requirements. In the context of this study, it is vital to note that the participants are second language speakers of English. Some have studied at the school since primary where English is a medium of instruction but majority have transferred only to the school in secondary, hence, the English proficiency was not at its maximum. Moreover, another essential point was these AI tools were useful in certain subjects such as Business, Citizenship and PE, while moderately useful for Computer Science, Chemistry, Economics and Theory

of Knowledge; and least useful for Math and Physics in terms of numbers as supported by Lo et al. [44] although its performance was outstanding in economics, AI tools were considered barely satisfactory in other areas such as mathematics.However, it may be helpful if one is looking for answers in text. This was supported by Wardat et al. [45] who argued that ChatGPT is known for its improved math capabilities and capacity to improve educational success through giving of basic knowledge of the subject and assistance in the study of geometry.

4.5. Implications on Thinking Skills, Research, Self-Management and Writing Skills

The students' responses regarding the reasons as to the implications of ChatGPT and Quillbot on the Approaches to Learning (ATL) Skills of students can be categorized in four major themes which are Honing students' comprehension, explanation, and organization skills; Finding information efficiently; Improving short term time management with less stress; Summarizing and Abridging ideas. Table 4 on the next page showed the reasons and its underlying meanings.

Table 4: Enhancing the students' ATL (Approaches to Learning) skills

Theme: Honing students' comprehension, explanation, and organization skills	Theme: Finding information efficiently	Theme: Improving short term time management with less stress	Theme: Summarizing and Abridging ideas
Effectiveness of AI tool in developing students' critical thinking skills	Perspective of students about the effectiveness of ChatGPT in generating content	How ChatGPT helped students in complying with deadlines	Whether AI tools enhance their writing skills
	Areas where other AI helped the students in their requirements	Students admitting that being late is also their own fault	Whether AI tools enhance their referencing skills / knowledge
	How ChatGPT helped students to find information	Whether AI tools helped students to manage themselves overall	
		Students feeling emotional guilt using AI	

4.5.1. Implications to Thinking Skills

Based on Table 4, it can be seen that there were two meanings that were unique to honing students' comprehension, explanation, and organization skills. These were how students use the information from ChatGP) and effectiveness of AI tool in terms of developing students' critical thinking skills. Responses were mainly about breaking down ideas in order to understand the topic further, explain complex topics and methodology into simple words and to form better structure. It was also mentioned that it helped the student to summarize ideas while another stated that it helped her to paraphrase. This findings were also highlighted by Wardat et al. [45] claiming that ChatGPT supports researchers in doing literature reviews by promptly determining relevant papers, summarizing findings, and suggesting other areas.

Despite the previously mentioned benefits claimed by some students, they also find ChatGPT to not be always helpful as it may also produce junk or useless information in the context of the topic they are searching for due to outdated information. This was proven by Rahman at al. [46] who argued that this tool seems insufficient in the long run because ChatGPT can be unreliable in fully grasping the fundamental ideas behind specific concepts. Since ChatGPT can only generate information that was produced until early 2022 and anything after that are not yet reflected in the AI, recent information that they needed were not provided. Aside from that, there were instances when information was generic and not pertaining to a more specialized topic needed.

4.5.2. Implications on Self-Management Skills

There are five codes and meanings from the transcript that were focused on improving the short-term time management with less stress. These were how ChatGPT helped students in complying with deadlines, students admitting that being late is also their own fault, and how Quillbot helped students in complying with deadlines. These showed how these AI tools can also affect the self-management of students. The following statements from participants support the theme. On another note, responses such as whether AI tools helped students to manage themselves overall and students feeling emotional guilt using AI, also showed that using ChatGPT and Quillbot also has adverse effect on the students' self-management skills. This was confined by Giray et al. [47] concluding that through ChatGPT, researchers can enter keywords or questions, and the tool will generate a list of relevant papers, therefore allowing them to save time and effort. This, ChatGPT helps to streamline the editing and academic writing process.

On the other hand, respondents also claimed that the AI tools did not really help them to sustain and develop time and self-management for the long term because when gadgets are not readily available, they might not be able to generate their own ideas, thus, becoming technology reliant. Furthermore, students were also tempted to use AI for small tasks by simply copy pasting it. This was earlier strengthed by a study from Famaye et al. [48] arguing that AI systems diminish students' aptitude for independent, analytical, and imaginative thinking due to dependency. Nevertheless, others believed that it helped them at certain points in the short term by allowing them to finish task earlier and faster, hence, submit ahead of time.

4.5.3. Implications on Research Skills

In terms of research skills, participants have stated that it helped them to find the answers they need but these are limited as some information cannot be produced by ChatGPT, hence, they had to use other AI tools to find the answers they need. The responses to this were under the menainf of perspective of students about the effectiveness of ChatGPT in terms of generating content, areas where other AI helped the students in their requirements and how chatgpt helped students to find information, which can be seen in Table 4.

On the other hand, one participant claimed that there are instances where he still preferred to follow the instructions and advice of his teacher instead of looking for answers in ChatGPT. For the set of questions under research skills, one thing that came up was students' resourcefulness and strategies in finding other AI tools which complements ChatGPT and Quillbot such as Perplexity, Pink chat and Scribbr. These other AI tools have become complementary to ChatGPT and Quillbot since both AI could not provide all the support that the participants were looking for or if there is, it is sometimes inaccurate. This was supported by Dwivedi et al. [49]. For instance, the outcomes might lead to factual information and fabricated content, blocking the line between reality and misinformation, resulting to perpetuating false or inaccurate information.

Hence, in terms of researching skills, to find ways on how to navigate and simplified their works, students' resourcefulness in finding other tools have been evident, but not quite about investigation and drawing inference. Nevertheless, there was still one student who stated that he still relied on the teacher's feedback to revise, hence he used less of the AI. Overall, in terms of research, ChatGPT has become useful as a search engine for students while Quillbot was not useful for researches.

4.5.4. Implications on Writing Skills

In terms of writing, participants claimed that it helped them to temporarily improve their writing outputs because the AI tools generated it for them. However, in the long run, these did not help them strengthen their skills especially if they became reliant on it to write for them. There were two meanings that were unique to summarizing and abridging ideas' theme that pertains to the impact on the participants' writing skills. These were whether AI tools enhance their writing skills and whether AI tools enhance their referencing skills / knowledge.

Additionally, participants also claimed that the writing output produced by ChatGPT and Quillbot does not have references which is part of the writing submissions that they need. They were also aware that being able to write references completely and correctly is an important writing skill that they have to learn to avoid plagiarism and disinformation. This was supported by Giray et al. [47] arguing that disinformation could be disseminated through false publications without proper references misleading the learning community. Hence, they either use other AI tools or learn manually how to use it.

In conclusion, even though the AI tools have been useful for them, it can be concluded that it did not fully help them in referencing as ChatGPT and Quillbot did not provide sources and referencing format for them. Hence, they were inclined to find alternative AI tools for referencing.

Overall, the common themes that came up here was summarizing, improvement in grammar, better quality of paraphrasing and conciseness of ideas generated. These were beneficial in most of their internal assessments in their six subjects particularly those that involved writing and less calculations. This is corroborated by Gödde et al. [50] and Vargas-Murillo et al., [51] arguing that ChatGPT is also proficient in communication and writing and it articulates ideas clearly. Additionally, their writing skills in terms of completing their long writing requirements such as Extended essay and Theory of Knowledge were accomplished with more ease as they were able to meet the word count by making ideas more concise through ChatGPT and Quillbot.

On the contrary, despite most of the good things that the AI tools have contributed to the students, its adverse effect could not be denied as admitted by the students/ participants themselves. This was supported by Iskender [52] concluding that an unfortunate outcome of overreliance on ChatGPT could lead to poor creativity and originality. The students' responses regarding how ChatGPT and Quillbot degenerates their ATL skills can be categorized in three major themes which are procrastinating, thinking basic and relying on technology.

Table 5 below shows the how AI tools degenerated the students ATL (Approaches to Learning) skills and its underlying meanings. Table 6 has five meanings that encapsulates the theme and sub themes. These are Areas where ChatGPT did not help the students, Areas where other AI helped the students in their requirements,

Areas where Quillbot were not useful, whether AI tools enhance their writing skills and students' perspective on how the AI tools can negatively affect their ATL skills.

Table 5: Degenerating the students ATL (Approaches to Learning) skills

Sub theme: Procrastinating	Sub theme: Thinking basic	Sub theme: Relying on technology
Areas where ChatGPT did not help the students		
Areas where other AI helped the students in their requirements		
Areas where Quillbot were not useful		
Whether AI tools enhance their writing skills		
Students' perspective on how the AI tools can negatively affect their ATL skills		

The participants admitted that despite them finding it beneficial to use ChatGPT and Quillbot, they were also aware of the harm that it can bring such as leading them to become lazy and procrastinate more as well as dependent. This was confirmed by a study from Vargas-Murillo et al. [51] and Zhang and Tur [53] who further noted that students who over-rely on ChatGPT to finish school tasks may develop a dependency that weakens their productivity and intellectual growth. This only shows that successful integration of technology in education is still a problem faced by teachers and schools [54].

Overall, ChatGPT and Quillbot poses risks for the development of the Approaches to Learning Skills of students. Based on the aforementioned review of the meanings under each initial identified theme, it can be concluded that the themes are relevant and connected to the research question and main objective of this study, hence, the seven identified themes: Brainstorming; Optimizing; Paraphrasing; ChatGPT contributing to the quality and completion of IB DP requirements; Quillbot contributing to the quality and completion of IB DP requirements; Enhancing the students' ATL (Approaches to Learning) skills and Degenerating the students ATL (Approaches to Learning) skills were finalized and used for the abovementioned results and discussion.

It is also important to note that the limitations of this study. This includes limiting the participants to selected students who are only studying the International Bacalurreate Diploma Programme and who confirmed that they have been using Chatgpt and Quillbot. This does not include all International Bacalurreate Diploma Programme students of the school. Moreover, this study does not involve statistical / nuemrical data about the frequency of students' usage of chatgpt and quillbot, neither the length of time of their experience using it. This study is purely qualitative, focusing on their shared experience through FGD and not survey. Additionally, the participants did not have the same level of knowledge and experience with ChatGPT which could affect their point of view regarding its prospects and risks. Furthermore, this study also utilized online Focus Group Discussion and not individual interviews questionnaire or survey, hence acknowledging the possible downsides compared to doing an in-person interview or providing questionnaire or survey forms.

Based on the result of this study, some recommendatios for future research include conducting a study focusing on the impact of other Artificial Intelligence tools mentioned such as Perplexity, Pink chat and Scribbr to specific learning skills of Second Language speakers of English. Research focusing on schools that fully integrated Artificial Intelligence in their school system as well as teaching and learning process to investigate how the AI tools were implemented is also advised to be dones. Furthermore, future research on possible action plans that can be taken by academic institutions to maximize the benefits of AI while at the same time minimizing its adverse effects on students will also be helpful in the future.

5. CONCLUSION

The main reasons for using ChatGPT is to efficiently write formal and academic writing. In terms of effects, ChatGPT contributed to the improvement of the quality and completion of requirements while Quillbot enhanced students' compliance with academic and formal writing.As for the implications, generally, ChatGPT aided them to enhancing their thinking skills but maybe detrimental for the analytical part in the long run. As for Quillbot, it did not create a positive impact to their thinking skills as the AI tool simply generate the information. Nevertheless, it helped them in self- management. For research, Chatgpt has indeed made a positive impact in quickly finding initial ideas. However, the positive impact is also limited as it did not provide them the references or pertinent resources to support the claims shared by ChatGPT. On a positive note, this has also pushed them to look for alternative AI tools as ChatGPT does not give the relevant and specialized ideas. Likewise, Quillbot did not help to strengthen research skills. The clear positive impact of ChatGPT and Quillbot for the participants were mostly improving their self management, focusing on compliance with deadline, thus lessened their stress about work completion. Both ChatGPT and Quillbot have made their written requirements better in terms of producing a more academic and formal writing for them. However, it did not create a good impact in the long run as they become too reliant. Hence, the impact was even detrimental for their writing skills as without the AI tools, participants claimed unable to write and generate their own academic writing output.

Therefore, among all the Approaches to Learning (ATL) Skills of IB DP students, it was their self-management skills which has been positively impacted by ChatGPT and Quillbot, positive impact is to a lesser extent on their thinking and research skills while there was a limited and temporary positive effect to their writing skills, but mainly it brought adverse or negative impact.

Hence, this study recommends to conduct future studies about AI companies' partnerships with schools in integrating Artificial Intelligence in the school system. Additionally, a review or revisit of the existing curriculum can be done on how AI tools can be embedded in its content to hone the digital skills of learners while developing their critical thinking skills and establishing individoualized writing plans. Furthermore, schools are recommended to establish clear policies regarding academic integrity and promote the use of AI as a supplement rather than as a replacement for traditional research. Lastly, schools can conduct workshops on research ethics with the use of AI and use AI-driven feedback mechanisms in support of student learning and critical thinking.

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