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Research Article

An In-Depth Analysis of Instructors' Perceptions of Utilizing ChatGPT in Developing Courses and Learning Materials

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Abstract
This sequential explanatory research design study determined the instructors' level of perceptions and efficiency in using ChatGPT as an educational tool for developing courses and learning materials. It also investigated the challenges and limitations that instructors have encountered while utilizing this tool. The study involved 138 respondents, and the five participants were from regular campuses of a state university in Central Luzon who had immersed themselves in the utilization of ChatGPT. The samples of the study signify that they were actively engaged in exploring and integrating AI tools, particularly ChatGPT, in teaching pedagogy. The instruments used in this study were researcher-made questionnaires. The quantitative tool involved indicators of the perceptions of instructors on the usefulness, ease of use, attitudes, impact, and efficiency of the tool in identifying learning, performance, and assessment outcomes. The qualitative instrument was about the difficulties, authenticity and reliability issues, ethical issues and concerns, technical limitations, and strategies to improve the ChatGPT-generated content. The results showed that ChatGPT is a beneficial educational tool; it is user-friendly, especially for seasoned faculty with different levels of technological expertise. However, it was also revealed that ChatGPT does not enhance the critical and analytical thinking of the instructors as they innovate diverse course learning materials. Furthermore, the findings showed that instructors must be responsible users and critically evaluate the generated outputs because they may be inaccurate, vague, or outdated. Its technical limitations affect coherence, complexity, and the context itself. The study recommends conducting training on AI integration in education as it can negatively impact the educational system, productivity, and economic stability.

Keywords: AI Integration, ChatGPT, Instructors, Outcomes, Perceptions

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1. INTRODUCTION

Artificial Intelligence (AI) is one of the manifestations of the rapidly evolving technological advancement, especially its use in assisting instructors and learners to deal with real-world problems and how to enhance the teaching and learning outcomes and competencies. It is said that in the 21st century, educational institutions must be prepared for the inevitable changes and demands since the utilization of AI is already part of the educational landscape.

According to Chen et al. (2020), AI is extensively adopted in the field of education, given the different features that it could offer to ease the burden and reduce the workloads of teachers. It has various forms, such as computer-related technologies, online learning systems, and the use of robots that are humanoids and web-based chatbots that can ultimately perform with or without the assistance of the instructors. However, different opinions and perspectives are coming from educators about the advantages and disadvantages of using AI, particularly ChatGPT. Critics from the education sector and organizations have opened opportunities for debates about whether they will welcome and integrate AI into the curriculum or will just encourage educational stakeholders, particularly the teachers and students, to use it as a basis or guide in the conceptualization of ideas. In the study of Ejjami (2024), the use of AI can improve the

engagement and academic achievement of students through the aid of individualized learning algorithms and with contextualized and appropriate enriching learning content. With adaptive assessment technologies, real-time feedback, and interventions, it can improve the intended learning outcomes. On the contrary, it was also found that there are issues to be considered, such as data privacy, biases in terms of algorithms, and equal accessibility.

As per the study of Liu et al. (2023), it was found that scholars have eagerly decided to integrate Generative Artificial Intelligence (GAI) into education, specifically ChatGPT, since it provides individualized learning experiences to learners. The downside of this is related to academic integrity, honesty, and the delay in the development of the critical and analytical thinking of the students because of too much dependence on the tool. Although it allows the students to discover and generate ideas without the direct or actual supervision of the teachers, it still conditions the minds of the learners to rely on the generated information of AI. In the study of Dempere et al. (2023), it is mentioned that ChatGPT can assist by providing a comprehensive summary and enhancing the discussion of the results of the research. Moreover, it is beneficial in terms of giving automated grading, effectively streamlining the enrollment process, fully equipping student services, teaching-learning enhancements, increasing student retention, and enhancing human-computer interaction. Just like other studies, it is also revealed that it has specific concerns, such as plagiarism, job displacement, online security, a gap in digital literacy, bias, misuse, AI-induced anxiety, misinformation, privacy breaches, accessibility issues, and limited human interaction. In connection with this, since ChatGPT is a relatively new technology, its application and integration in education are still being explored, especially regarding its accuracy, authenticity, validity, reliability, and applicability to teaching pedagogy.

In the study of Al-khresheh (2024), there are noticeable concerns about language fidelity, the possibility of suppression, and high reliance on the tool. It is suggested that there must be professional development and capability training for teachers about the integration of ChatGPT and other AI tools into the curriculum. It is also important that students have orientation and workshops about the proper way of utilizing the tool to avoid any potential risks in terms of the credibility and reliability of any academic-related outputs and outcomes. As per the study of ElSayary (2024), educators have a good impression of using ChatGPT in preparing lesson plans, teaching, and learning processes, and it guides them in terms of assessment and feedback. Also, it shows that ChatGPT enhances the students' learning outcomes, engagement, and motivation, and its impact on teaching practices. On the other hand, teachers' extreme challenges involve bias and accuracy of information, and that it has lack of human interaction.

In the study of Iqbal et al. (2022), instructors have negative perceptions and attitudes toward using ChatGPT as an educational and learning tool. It was revealed that students usually cheat and plagiarize their work. The good thing about it is that it eases the development of lesson plans, learning materials, and assessment tasks. To have a successful, effective, and efficient use of this kind of AI, it was suggested that faculty members must have rigid training and a series of orientations about the pros and cons. As per the study of Valova et al. (2024), it is good that educators are using ChatGPT since it can systematize information about a certain topic, which results in saving time and effort. Just like other studies, it was found that students can learn inaccurate, false, and malicious information, especially if they no longer validate the authenticity and reliability of the entire data provided by the tool. Also, the alarming thing about it is that students are usually relying on and believing everything that is being generated. Therefore, mentorship and effective strategies with the integration of ChatGPT shall be initiated by teachers to ensure an integral and responsible educational experience. While ChatGPT is beneficial both for teachers and students, it is expected and crucial for educators to have the necessary and appropriate skills to effectively use this tool in designing courses and learning materials (Mikeladze, 2023). According to the study of Fauzi et al. (2023), ChatGPT has a significant contribution in enhancing the productivity of students. This only implies that this tool is efficient, especially if teachers identify the learning, performance, and assessment outcomes that are aligned with the interests, needs, and readiness of the students.

In general, the utilization of ChatGPT as an educational tool can make the workloads of teachers more manageable, and it can save them time in developing courses and learning materials. With this kind of AI, educators can construct strategies for differentiated instruction or comprehensive explanations for complex concepts, which enables a relevant and responsive approach to course development, resulting in continuous improvement. On the other hand, instructors must also be more cautious to mitigate possible

risks relative to accuracy, ethical considerations, and reliability. Indeed, if not properly used, it could reduce opportunities for original, relevant, and innovative course content creation.

This study determined the instructors' level of perceptions and efficiency in using ChatGPT as an educational tool for developing courses and learning materials. It also investigated the challenges and limitations that instructors have encountered while utilizing this tool. The study's results and findings revealed new approaches to leveraging ChatGPT to enhance teaching and learning, contributing to a more efficient and innovative educational experience.

Specifically, it aims to answer the following questions:

1. How may the level of perceptions of the instructors in utilizing ChatGPT as an educational tool in developing courses and learning materials be described in terms of:
   1.1. usefulness:
   1.2. ease of use:
   1.3. attitudes; and
   1.4. impact on the course and learning materials development?
2. How may the level of efficiency of utilizing ChatGPT as an educational tool in developing courses and learning materials be described in terms of:
   2.1. identifying learning outcomes;
   2.2. identifying performance outcomes;
   2.3. identifying assessment outcomes; and
   2.4. developing of course and learning materials?
3. What challenges and limitations have instructors encountered in utilizing ChatGPT as an educational tool in developing courses and learning materials?
4. Based on the results and findings of the study, what implications may be developed?

This study is anchored with the Technology Acceptance Model (TAM) developed by Davis (1989, as cited in Silva, 2015), which emphasizes the technology acceptance of the user, and this applies to ChatGPT. This theory examined factors like perceived usefulness and ease of use, which may impact instructors' attitudes toward ChatGPT as a tool in developing courses and learning materials following its efficiency in identifying learning, performance, and assessment outcomes. Also, this model influenced the formulation of the objectives and instruments and guided the researcher in the conceptualization of the interpretation of the results and findings of the study. Through the TAM model, the researcher was able to come up with recommendations and implications that could further emphasize the need to integrate ChatGPT in the educational landscape.

In addition, TAM could also explore the gaps between the perceptions of the instructors and their willingness to adopt ChatGPT in educational contexts, as determined by its level of efficiency. Moreover, if instructors have encountered challenges and limitations such as inaccurate responses, limited knowledge content, and confusing outputs, these experiences can develop negative impressions about the tool. Therefore, implications from the results and findings may be developed to further improve the quality of the course and learning materials and to reconsider whether ChatGPT should be integrated into the teaching pedagogy, specifically for designing and developing instructional materials.

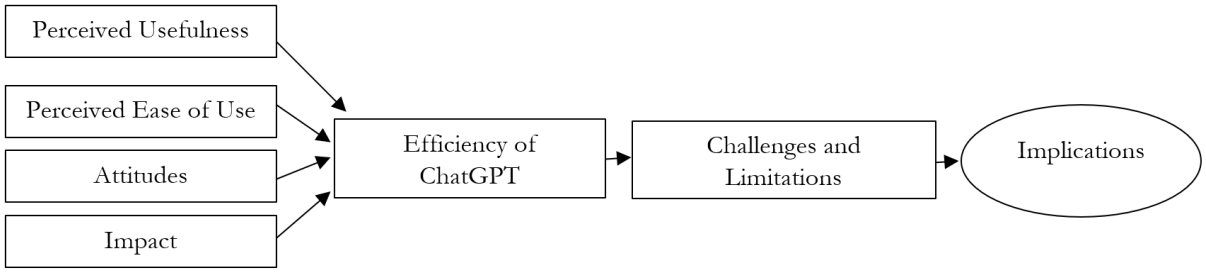

Figure 1. Schematic Diagram of the Study

2. METHODS

2.1. Research Design

This study employed the sequential-explanatory design, where the quantitative data were collected and analyzed first, prior to the qualitative interviews, to further elaborate, explain, and support the quantitative findings. The qualitative data can capture the breadth and depth of the insights, interpretations, experiences, challenges, and limitations that instructors have faced with ChatGPT as an instructional aid for designing courses and learning materials. This research design follows two phases where the qualitative data will be gathered, analyzed, and interpreted based on the results of the quantitative data (Creswell & Creswell, 2018).

2.2. Key Informants

The key informants of this study were the faculty who are presently teaching on regular campuses of one (1) state university in Central Luzon and who have immersed themselves in the utilization of ChatGPT as an educational tool in developing courses and learning materials. For the quantitative phase, the respondents were chosen using a convenience sampling technique due to ease of access and proximity to the researcher. There were 138 respondents who ensured adequate representation and adequate power. For the qualitative phase, the five participants were selected using the purposive sampling technique following this set of criteria: a) must have immersed themselves in utilizing ChatGPT as an educational tool; b) must have immersed themselves with various AI tools applied in education; c) with at least very satisfactory or outstanding performance rating; and d) presented papers in national or international conferences. There were five participants to ensure the richness of the data, and since the researcher had already reached the point of data saturation.

2.3. Research Instruments

This study utilized researcher-made survey questionnaires that were conceptualized and developed based on the related literature, published studies, learning outcomes, and the suggestions of the validators, who are experts in language, ICT, and educational management. Their inputs were incorporated into the finalized research tool. For the quantitative part, it consists of a 40-item survey questionnaire consisting of five indicators or items per construct relevant to the perceptions of instructors on the usefulness, ease of use, attitudes, and impact on the course and learning materials development of ChatGPT as an educational tool. In addition, it involved indicators that are about the level of efficiency of ChatGPT, which include questions about the time saved, quality of materials developed, and overall effectiveness in identifying learning, performance, and assessment outcomes, and in the development of courses and learning materials. A 15-sample size was used for pilot testing the questionnaire, which can assist in finding possible problems and improving its relevance and clarity. The computed value for Cronbach's Alpha was 0.94, with an internal consistency of excellent. For the qualitative part, the interview questionnaire was constructed based on the results of the quantitative data, which consists of five open-ended questions. In order to ensure that the questionnaire develops into a vital instrument for obtaining thorough and significant data on the integration of ChatGPT in education, the researcher accommodated the suggestions and willingly made revisions.

2.4. Procedures

The researcher followed the systematic process of collecting data and administering the questionnaire. With the approval of the concerned university officials, the data gathering took place following the prepared action plan. In the quantitative phase, the survey questionnaire was administered to the respondents of the study through Google Forms to determine the perceived usefulness, ease of use, attitudes, and impact of utilizing ChatGPT as an instructional tool for designing courses and learning materials. Also, they were asked about the level of efficiency of ChatGPT in identifying the learning, performance, and assessment outcomes, and the overall development of the learning materials. Once the

data was collected, the researcher analyzed the level of perceptions of the instructors with regard to the utilization of ChatGPT and the level of efficiency of the tool.

Based on the results of the quantitative data, the researcher conducted a semi-structured interview with the chosen participants of the study regarding the challenges and limitations that they encountered in using ChatGPT for courses and learning materials design and development. An in-depth interview was conducted via Face-to-Face, Google Meet, Zoom Meeting, or Messenger, depending on the preferences of the participants. The collected qualitative data were transcribed verbatim and analyzed using coding and thematic analysis. The themes that were coded and developed were validated by research and language experts to ensure reliability. Lastly, the results and findings of the study were used as a basis for developing implications and offering insights for enhancing the quality and reliability of ChatGPT-generated course materials.

2.5. Data Analysis

The quantitative data were analyzed using the 4-point Likert scale (Table 1), mean, and standard deviation. On the other hand, to identify patterns and themes, a thematic analysis of the qualitative data was used. The codes and themes were generated through a series of content analyses. After carefully transcribing the interviews, the data were read repeatedly in order to determine the substantial and meaningful statements, which the researcher assigned corresponding initial codes. The similar codes were clustered to generate categories, wherein overarching themes emerged to avoid redundancy or repetition. The codes and themes were reviewed, interpreted, and validated with the help of research and qualitative experts to ensure accuracy and reliability.

Table 1. 4-Point Likert Scale

Scale	Mean Range	Descriptive Interpretation
4	3.26-4.00	Strongly Agree
3	2.51-3.25	Agree
2	1.76-2.50	Disagree
1	1.00-1.75	Strongly Disagree

3. RESULTS

Table 2 presents the data on the level of perceptions of the instructors in utilizing ChatGPT as an educational tool in developing courses and learning materials in terms of usefulness.

Table 2. Level of Perceptions of the Instructors in Utilizing ChatGPT as an Educational Tool in Developing Courses and Learning Materials in terms of Usefulness

Indicators	Weighted Mean	Std. Dev.	Descriptive Interpretation
ChatGPT as an educational tool provides information that is accessible to effectively develop courses and learning materials.	3.91	0.29	Strongly Agree
ChatGPT helps me as an instructor to construct well-structured, relevant, and high-quality instructional materials.	3.86	0.35	Strongly Agree
Using ChatGPT enhances my ability to think critically and analytically with regard to innovating diverse course learning materials.	2.22	0.98	Disagree
The tool provides real-time feedback and valuable suggestions that I can use to come up with structured courses and learning materials.	3.88	0.33	Strongly Agree
ChatGPT reduces the time for preparing the course learning materials since it helps me align the course content with the curriculum.	3.93	0.26	Strongly Agree
Total	3.47	0.44	Strongly Agree

Note: 4.00-3.26 – Strongly Agree 3.25-2.51 – Agree 2.50-1.76 – Disagree 1.75-1.00 – Strongly Disagree

As shown in Table 2, the highest calculated mean value is 3.93, with a standard deviation of 0.26, which indicates that the respondents strongly agree that ChatGPT reduces the time for preparing the course learning materials since it helps them align the course content with the curriculum. On the other hand, the lowest mean score is 2.22 with a standard deviation of 0.98, which indicates that the respondents disagree

that using ChatGPT enhances their ability to think critically and analytically with regard to innovating diverse course learning materials. The general mean score of 3.47, with a standard deviation of 0.44, implies that the instructors strongly agree that ChatGPT is a useful educational tool in developing courses and learning materials. This only means that the instructors have realized that ChatGPT is beneficial for them, and it could help them to maximize their time in doing other instructional and administrative functions.

Table 3 presents the data on the level of perceptions of the instructors in utilizing ChatGPT as an educational tool in developing courses and learning materials in terms of ease of use.

Table 3. Level of Perceptions of the Instructors in Utilizing ChatGPT as an Educational Tool in Developing Courses and Learning Materials in terms of Ease of Use

Indicators	Weighted Mean	Std. Dev.	Descriptive Interpretation
ChatGPT is accessible for providing reliable information for academic purposes.	2.16	0.39	Disagree
ChatGPT as an educational tool is convenient for reviewing, revising, and enhancing course and learning materials.	2.47	0.97	Disagree
The tool is user-friendly for instructors, especially for seasoned faculty with different levels of technological expertise.	3.87	0.34	Strongly Agree
ChatGPT provides reliable, authentic, and research-based content that is beneficial in developing courses and learning materials.	1.85	0.36	Disagree
ChatGPT assists instructors in streamlining the process of researching content that can be used in finalizing courses and learning materials.	1.83	0.38	Disagree
Total	2.44	0.49	Disagree

Note: 4.00-3.26 – Strongly Agree 3.25-2.51 – Agree 2.50-1.76 – Disagree 1.75-1.00 – Strongly Disagree

As indicated in Table 3, the indicator that has the highest mean score is 3.87 with a standard deviation of 0.34, which means that the respondents strongly agree that the tool is user-friendly for instructors, especially for seasoned faculty with different levels of technological expertise. However, the lowest mean value is 1.83 with a standard deviation of 0.38, which implies that the respondents disagree that ChatGPT assists instructors in streamlining the process of researching content that can be used in finalizing courses and learning materials. The general weighted mean of 2.44 with a standard deviation of 0.49 indicates that the instructors disagree that ChatGPT lacks ease of use as an educational tool in developing courses and learning materials. The results imply that the instructors can present highly significant implications for learning, teaching, and professional development with the aid of ChatGPT. In the field of education, the tool can support differentiated instruction, foster learner engagement and collaboration, assist in the generation of content, and offer feedback mechanisms that are in real-time and suited to the needs of the learners. Though the tool is user-friendly, it is still important to note that users need to equip themselves with digital literacy skills and competencies to ensure that the AI-generated outputs are beneficial, relevant, and meet the interests and suit the learners' abilities.

Table 4. Level of Perceptions of the Instructors in Utilizing ChatGPT as an Educational Tool in Developing Courses and Learning Materials in terms of Attitudes

Indicators	Weighted Mean	Std. Dev.	Descriptive Interpretation
I feel confident in utilizing ChatGPT as an educational tool in developing courses and learning materials.	1.66	0.48	Strongly Disagree
I believe that ChatGPT helps me become more effective and efficient as an instructor as I construct innovative teaching and learning materials.	1.38	0.49	Strongly Disagree
I trust that ChatGPT provides accurate data, which makes it easy for me to construct course materials.	1.39	0.49	Strongly Disagree
I am willing to explore the features of ChatGPT to further improve my performance as an instructor in developing instructional materials and strategies.	3.91	0.28	Strongly Agree
I usually consider the ethical aspects and issues related to AI-generated information.	3.87	0.34	Strongly Agree
Total	2.44	0.42	Disagree

Note: 4.00-3.26 – Strongly Agree 3.25-2.51 – Agree 2.50-1.76 – Disagree 1.75-1.00 – Strongly Disagree

Table 4 presents the data on the level of perceptions of the instructors in utilizing ChatGPT as an educational tool in developing courses and learning materials in terms of attitudes. As reflected in Table 4, the indicator that has the highest mean score is 3.91, with a standard deviation of 0.28, which means that the respondents strongly agree that they are willing to explore the features of ChatGPT to further improve their performance as instructors in developing instructional materials and strategies. On the other hand, the lowest mean score is 1.38 with a standard deviation of 0.49, which implies that the respondents strongly disagree that ChatGPT helps them become more effective and efficient as instructors as they construct innovative teaching and learning materials. In general, the overall mean score is 2.44 with a standard deviation of 0.42, with a descriptive interpretation of disagree. Furthermore, the instructors are not as confident, effective, and efficient as they used ChatGPT as an educational tool since it has existing issues with reliability and accuracy.

Table 5 presents the data on the level of perceptions of the instructors in utilizing ChatGPT as an educational tool in developing courses and learning materials in terms of impact.

Table 5. Level of Perceptions of the Instructors in Utilizing ChatGPT as an Educational Tool in Developing Courses and Learning Materials in terms of Impact

Indicators	Weighted Mean	Std. Dev.	Descriptive Interpretation
ChatGPT enables me to create more innovative and engaging courses and learning materials.	3.93	0.26	Strongly Agree
ChatGPT allows me to promote a more student-centered approach to instructional materials.	3.91	0.29	Strongly Agree
ChatGPT provides an avenue for instructors to integrate artificial intelligence and human intelligence into education, specifically in constructing instructional materials.	3.92	0.27	Strongly Agree
The tool assists me in addressing difficulties in conceptualizing and developing course materials.	3.86	0.35	Strongly Agree
The use of ChatGPT enables instructors to become familiar and comfortable with the utilization of artificial intelligence in conceptualizing teaching materials.	3.93	0.26	Strongly Agree
Total	3.91	0.29	Strongly Agree

Note: 4.00-3.26 – Strongly Agree 3.25-2.51 – Agree 2.50-1.76 – Disagree 1.75-1.00 – Strongly Disagree

As shown in Table 5, the indicators that have the highest calculated mean score are 3.93, with a standard deviation of 0.26, which means that the respondents strongly agree that ChatGPT enables them to create more innovative and engaging courses and learning materials, as well as enabling them to become familiar and comfortable with the utilization of artificial intelligence in conceptualizing teaching materials. On the other hand, the lowest mean score is 3.86 with a standard deviation of 0.35, which indicates that the respondents strongly agree that ChatGPT assists them in addressing difficulties in conceptualizing and developing course materials. The general mean score of 3.91, with a standard deviation of 0.29, implies that the instructors strongly agree that ChatGPT is useful as an educational tool in developing courses and learning materials in terms of impact.

The results suggest that the instructors perceive ChatGPT as a highly beneficial and valuable tool in conceptualizing and constructing courses and learning materials, especially in choosing appropriate learning, performance, and assessment outcomes. With the utilization of ChatGPT as an educational tool, instructors can able to produce impactful and equitable learning materials that can equip more students to explore the learning content of the course. In addition, the results show that ChatGPT has the potential to serve as a support tool in higher education. Furthermore, learning institutions may therefore consider integrating digital and AI literacy into the curriculum and instruction to ensure that the students, instructors, and even the management can take advantage of this present trend. Provided that ethical considerations are institutionalized to avoid any conflicts and potential risks within the academic community.

Table 6 shows the data on the level of efficiency of utilizing ChatGPT as an educational tool in developing courses and learning materials in terms of identifying learning outcomes.

Table 6. Level of Efficiency of Utilizing ChatGPT as an Educational Tool in Developing Courses and Learning Materials in terms of Identifying Learning Outcomes

Indicators	Weighted Mean	Std. Dev.	Descriptive Interpretation
ChatGPT is efficient in identifying specific learning outcomes based on the course content to develop course teaching materials.	3.88	0.33	Strongly Agree
ChatGPT establishes that learning outcomes are aligned with the program outcomes and curriculum standards to efficiently produce outcome-based learning materials.	3.93	0.26	Strongly Agree
ChatGPT determines well-structured and attainable learning outcomes that result in relevant instructional materials.	3.88	0.33	Strongly Agree
ChatGPT finds contextualized learning outcomes to produce courses and learning materials based on students' interests, needs, and readiness.	3.86	0.35	Strongly Agree
ChatGPT suggests appropriate courses and learning materials that are suitable for attaining learning outcomes.	3.86	0.35	Strongly Agree
Total	3.88	0.32	Strongly Agree

Note: 4.00-3.26 – Strongly Agree 3.25-2.51 – Agree 2.50-1.76 – Disagree 1.75-1.00 – Strongly Disagree

As reflected in Table 6, the indicator that has the highest mean score is 3.93, with a standard deviation of 0.26, indicating that the respondents strongly agree that the tool establishes learning outcomes that are aligned with the program outcomes and curriculum standards to efficiently produce outcome-based learning materials. Meanwhile, the lowest calculated mean score is 3.86, with a standard deviation of 0.35, which means that the respondents strongly agree that ChatGPT suggests appropriate courses and learning materials that are suitable for attaining learning outcomes, and the tool finds contextualized learning outcomes to produce courses and learning materials based on the student's interests, needs, and readiness. In general, the overall mean score is 3.88, with a standard deviation of 0.32, indicating that the instructors strongly agree that ChatGPT is a useful educational tool in developing courses and learning materials in terms of identifying learning outcomes.

Table 7 presents the data on the level of efficiency of utilizing ChatGPT as an educational tool in developing courses and learning materials in terms of identifying performance outcomes.

Table 7. Level of Efficiency of Utilizing ChatGPT as an Educational Tool in Developing Courses and Learning Materials in terms of Identifying Performance Outcomes

Indicators	Weighted Mean	Std. Dev.	Descriptive Interpretation
ChatGPT identifies authentic assessment criteria that are aligned with performance outcomes to develop innovative learning materials.	3.90	0.30	Strongly Agree
ChatGPT generates problem-based and project-based course materials that are beneficial in enriching students' skills.	3.70	0.46	Strongly Agree
ChatGPT offers feedback mechanisms concerning the results of the performance of the students to further improve the development of instructional materials.	3.87	0.34	Strongly Agree
ChatGPT addresses differentiated instruction in developing courses and teaching materials that meet the diverse expectations of learners to produce authentic performance outcomes.	3.07	0.64	Agree
ChatGPT assists instructors in identifying practical applications of the course standards.	3.77	0.42	Strongly Agree
Total	3.66	0.43	Strongly Agree

Note: 4.00-3.26 – Strongly Agree 3.25-2.51 – Agree 2.50-1.76 – Disagree 1.75-1.00 – Strongly Disagree

As indicated in Table 7, the indicator that has the highest mean score is 3.90, with a standard deviation of 0.30, which indicates that the respondents strongly agree that ChatGPT identifies authentic assessment criteria that are aligned with performance outcomes to develop innovative learning materials. On the other hand, the lowest calculated mean score is 3.07, with a standard deviation of 0.64, which shows that the respondents agree that the tool addresses differentiated instruction in developing courses and teaching materials that meet the diverse expectations of learners to produce authentic performance

outcomes. Furthermore, the table above shows that the general mean calculated is 3.66, with a standard deviation of 0.43, indicating that instructors strongly agree that ChatGPT is a useful educational tool in developing courses and learning materials in terms of identifying performance outcomes.

The results indicate that, in terms of enhancing the curriculum through the assessment outcomes, specifically in aligning the course and learning materials with authentic assessment criteria, instructors perceive that ChatGPT is a valuable tool that can enable them to identify relevant and innovative assessment outcomes contributing to the attainment and creation of outcome-based learning and meaningful experiences. Hence, through the proper training and integrative application, ChatGPT can serve its purpose as a strategic support and educational tool towards the reinforcement and enhancement of outcome-based education in general.

Table 8 reflects the data on the level of efficiency of utilizing ChatGPT as an educational tool in developing courses and learning materials in terms of identifying assessment outcomes.

Table 8. Level of Efficiency of Utilizing ChatGPT as an Educational Tool in Developing Courses and Learning Materials in terms of Identifying Assessment Outcomes

Indicators	Weighted Mean	Std. Dev.	Descriptive Interpretation
ChatGPT offers an alternative way of assessing students' learning outcomes to meet the requirements for more inclusive and student-oriented learning materials.	3.80	0.40	Strongly Agree
ChatGPT ensures that the course contents are aligned with the assessment objectives in order to construct contextualized course and learning materials.	2.56	0.50	Agree
ChatGPT generates traditional and authentic assessment tools that address the need for more comprehensive teaching materials.	3.91	0.28	Strongly Agree
ChatGPT as an educational tool enhances the assessment outcomes through the use of AI-generated interpreted data for improving course materials.	3.96	0.20	Strongly Agree
ChatGPT identifies assessment outcomes for more well-structured lecture notes, course syllabi, and instructional materials.	3.96	0.19	Strongly Agree
Total	3.64	0.31	Strongly Agree

Note: 4.00-3.26 – Strongly Agree 3.25-2.51 – Agree 2.50-1.76 – Disagree 1.75-1.00 – Strongly Disagree

As shown in Table 8, the highest calculated mean value is 3.96, with a standard deviation of 0.19, which means that the respondents strongly agree that the tool identifies assessment outcomes for more well-structured lecture notes, course syllabi, and instructional materials. However, the lowest mean score is 2.56, with a standard deviation of 0.50, which states that the respondents agree that ChatGPT ensures that the course contents are aligned with the assessment objectives in order to construct contextualized course and learning materials. The general mean score of 3.64, with a standard deviation of 0.31, shows that the instructors strongly agree that ChatGPT is useful as an educational tool in developing courses and learning materials in terms of identifying assessment outcomes.

Table 9 displays the data on the level of efficiency of utilizing ChatGPT as an educational tool in developing courses and learning materials. As reflected in Table 9, the highest mean score is 3.91, with a standard deviation of 0.28, which indicates that the respondents strongly agree that ChatGPT creates course syllabi and course outlines based on the provided learning objectives and course requirements by the instructor, the respondents also strongly agree that the tool enhances the construction of engaging learning materials to accommodate the diverse needs of students with varying levels of learning styles. Additionally, the instructors strongly agree that ChatGPT constructs relevant and appropriate course and learning materials that apply to students with special needs. On the other hand, the lowest calculated mean score is 3.87, with a standard deviation of 0.34, which shows that the respondents strongly agree that ChatGPT reduces the time spent by instructors in drafting, enhancing, and formatting course learning materials. Moreover, the general mean calculated is 3.90, with a standard deviation of 0.30, indicating that the instructors strongly agree that ChatGPT is a useful educational tool in developing courses and learning materials.

Table 9. Level of Efficiency of Utilizing ChatGPT as an Educational Tool in Developing Courses and Learning Materials

Indicators	Weighted Mean	Std. Dev.	Descriptive Interpretation
ChatGPT creates course syllabi and course outlines based on the provided learning objectives and course requirements by the instructor.	3.91	0.28	Strongly Agree
ChatGPT enhances the construction of engaging learning materials through the use of real-life examples and real-world applications.	3.91	0.28	Strongly Agree
ChatGPT is a good educational tool for developing learning materials to accommodate the diverse needs of students with varying levels of learning styles.	3.90	0.30	Strongly Agree
ChatGPT reduces the time spent by instructors in drafting, enhancing, and formatting course learning materials.	3.87	0.34	Strongly Agree
ChatGPT constructs relevant and appropriate course and learning materials that apply to students with special needs.	3.91	0.28	Strongly Agree
Total	3.90	0.30	Strongly Agree

Note: 4.00-3.26 – Strongly Agree 3.25-2.51 – Agree 2.50-1.76 – Disagree 1.75-1.00 – Strongly Disagree

The findings for the problems presented were from the responses of the participants. In this study, five (5) themes were formulated with their corresponding sub-themes about the ChatGPT Patterns, Accuracy, and Efficiency; Responsible Use of ChatGPT; Ethical Considerations and Practices in ChatGPT; Developing Skills and Navigating Limitations in ChatGPT; and Enhancing ChatGPT Content and Ensuring Student-Centeredness.

Theme 1: ChatGPT Patterns, Accuracy, and Efficiency

In this developing world, one of the rising and well-known AI tools is ChatGPT. Organizing or summarizing information, igniting one's creativity through sparking ideas for the user, and even assisting the user with their everyday tasks are known to be some of the uses of this tool. According to Rahman & Watanobe (2023), ChatGPT offers opportunities for learners and instructors, such as in providing personalized feedback, technological accessibility, engaging conversations, lesson preparation, assessment, and a better way to teach and explore complex ideas. However, challenges and difficulties concerning the usage of the tool are inevitable. This leads to the development of these three (3) sub-themes, namely: ChatGPT Convenience and Efficiency; Determining ChatGPT Patterns; and ChatGPT Accuracy and Reliability.

Sub-theme 1: ChatGPT Convenience and Efficiency. ChatGPT is known for its convenience and efficiency in terms of usage. This is also supported by the participants as they have shown evident recognition of the tool's convenience, appropriate prompts and commands, concise lesson concepts, and usefulness in finding and summarizing information. These are shown in the following transcripts:

> *"I do not have any difficulty in utilizing ChatGPT for my learning materials." (IP1).*
>
> *"I have proven that using the right commands and prompts can generate good materials." (IP1)*
>
> *"ChatGPT helps me to do work more easily by summarizing the main point of the lesson." (IP5)*
>
> *"Overall, it is a very helpful tool in finding and summarizing information." (IP4)*

Sub-theme 2: Determining ChatGPT Patterns. In terms of the tool's pattern, the participants noticed the repetition of words, word patterns, and recognizable patterns, which are shown in the following transcripts:

> *"When I use this tool, I notice that some words tend to repeat." (IP2)*
>
> *"There are certain word patterns that it generates, which make it clear that the text was produced by ChatGPT, especially if the prompts are not well-structured." (IP2)*
>
> *"This leads to responses that follow recognizable patterns." (IP2)*

Sub-theme 3: ChatGPT Accuracy and Reliability. One of the concerning issues of ChatGPT is its accuracy and reliability. The participants have shown their concerns in terms of reliability and accuracy issues, errors, and lack of credibility, verifying generated results, and incorrect, vague, and outdated information. These are evident in the following transcripts:

> *"One major challenge is ensuring the reliability and accuracy of the information." (IP3)*
>
> *"Some AI-generated content may contain errors or lack credibility." (IP3)*
>
> *"This is why it's essential to double-check data from trusted sources before using it in course materials." (IP3)*
>
> *"However, just like what its disclaimer states, there is information that is incorrect, vague, and outdated." (IP4)*

Theme 2: Responsible Use of ChatGPT

The integration of ChatGPT in the realms of education poses significant momentum due to several reasons, such as its potential to enhance teaching, provide support to students' learning, and streamline academic tasks. However, instructors need to understand that the tool for educational purposes must also be used as a technological assistant in generating content. According to Halaweh (2023), it is important to note that users need to understand the disparity between text generation and idea generation. In-text generation involves the correct language usage, paraphrasing, and editing. On the other hand, the idea generation focuses on the development of original concepts, summarizing information, and dealing with critical judgments. In this study, instructors must have a balance in the use of the tool, provide clear prompts, review, validate, and verify the generated responses. With these, they will make them become responsible users of ChatGPT as an educational tool.

Sub-theme 1: Balancing ChatGPT Dependence. As a transformative tool that enhances productivity and communication, the rapid rise of ChatGPT has seen a rapid rise. However, concerns are emerging regarding addiction to using it. The participants showed concern in terms of the responsible use of ChatGPT, which is shown in the following manuscript:

> *"I mainly use ChatGPT in developing analytical rubrics, project/activity guidelines, and survey questionnaires." (IP1)*
>
> *"Personally, I don't fully base my learning materials on AI tools." (IP4)*

Sub-theme 2: Effective ChatGPT Prompting. ChatGPT can provide users with fine-tuned responses and behavior. Its flexibility makes it a valuable tool for a wide range of uses. Furthermore, ChatGPT is an effective and efficient tool that is well-suited for applications that require real-time interactions that benefit its users. These are shown in the following transcripts:

> *"I focus on crafting the right prompts." (IP2)*
>
> *"I always give ChatGPT background information, intended learning outcomes, target audience/students, and any specific areas that I want to be covered." (IP5)*

Sub-theme 3: Reviewing ChatGPT Responses. The participants noted that reviewing generated results, paraphrasing words, and being selective in generated concepts helped them ensure the quality of ChatGPT. This is shown in the following transcripts:

> *"I make sure that I read them carefully to see if they are aligned with my course outcome." (IP1)*
>
> *"I try not to rely solely on the information given by copying and pasting entire texts." (IP2)*
>
> *"I also make sure to rephrase sentences and find alternative wording." (IP2)*
>
> *"Selective about the concepts and ideas I choose." (IP2)*

Sub-theme 4: Validating ChatGPT-generated Content. It is important to validate the results of ChatGPT-generated content to ensure its accuracy and reliability. This is shown in the strategies that

instructors use in validating the content of ChatGPT, namely: comparing with existing literature, fact-checking results, cross-checking using traditional materials, and comparing AI-generated content with legitimate references. This is evident in the following transcripts:

> *"I also compare them with existing materials on the internet to see if I missed some aspects." (IP1)*
>
> *"I verify it by fact-checking with other reliable sources." (IP3)*
>
> *"I still cross-checked them using traditional materials such as books and textbooks that are published by scholars." (IP4)*
>
> *"Comparing AI-generated content with legitimate references helps confirm its accuracy." (IP3)*
>
> *"I also do fact-checking on the other sources/websites." (IP5)*

Sub-theme 5: Verifying ChatGPT Accuracy. Instructors must verify the accuracy of the generated ideas and information to ensure the reliability of the data. This is also supported by the participants, as they have shown evident recognition of the tool's convenience. These are shown in the following transcripts:

> *"For it is common knowledge that no matter how efficient these tools are, they are still not error-proof." (IP4)*
>
> *"ChatGPT can sometimes generate inaccurate or misleading information." (IP5)*

Theme 3: Ethical Considerations and Practices in ChatGPT

The integration of ChatGPT as an educational tool is now embedded in learning institutions, which is why ethical considerations become more highly significant, especially in addressing ethical concerns such as data privacy, biases, plagiarism issues, and risks. According to Huallpa (2023), the participants perceived the integration of ChatGPT as moderately accessible, which can bring positive social attitudes. They recognized that the users value responsible utilization of the tool for personalized educational opportunities. This leads to the development of the sub-themes, namely: ChatGPT Ethical Considerations, Addressing Plagiarism Issues, and Cross-referencing for Accuracy.

Sub-theme 1: ChatGPT Ethical Considerations. ChatGPT is capable of giving inaccurate, absurd, or unethical answers. Some examples include the reliability and quality of data, biases in terms of the generated learning outcomes, accuracy of the content, and plagiarism issues. This is also supported by the participants, as they showed evident recognition of the tool's convenience. These are shown in the following transcripts:

> *"I have never encountered any ethical issues in my experience of using ChatGPT for my learning materials." (IP1)*
>
> *"There are possible potential risks and issues, but so far, I haven't encountered any issues." (IP2)*
>
> *"I prevent plagiarism by making sure the content is original and properly cited." (IP3)*
>
> *"For bias, I review and edit the content to ensure fairness and neutrality." (IP3)*
>
> *"I review the generated content for potential biases, and I make necessary edits to ensure fairness and inclusivity for all learners." (IP5)*

Sub-theme 2: Addressing Plagiarism Issues. Academic integrity includes a diverse range of unfair practices, including plagiarism. In terms of the tool's pattern, the participants noticed addressing plagiarism issues, which are shown in the following transcript:

> *"For research, however, I have seen that ChatGPT has some plagiarism issues." (IP1)*

Sub-theme 3: Cross-referencing for Accuracy. Good cross-referencing allows readers to quickly contextualize the material being used in the work that needs to be accomplished, which can significantly add value and functionality. The participants showed concern in terms of cross-referencing for accuracy, which is shown in the following manuscript.

> *"I consider diverse perspectives and use a variety of sources to create balanced learning materials." (IP5)*

Theme 4: Developing Skills and Navigating Limitations in ChatGPT

As previously discussed, ChatGPT may have various limitations; however, it can still able to help researchers to produce an accurate, systematic, and informative paper (Zhai, 2022). In connection with this study, the study shows that the participants have encountered technical limitations, limited accessibility, and unreliable information, which necessitated the development of critical, analytical, and digital skills.

Sub-theme 1: ChatGPT Skills Development. There are certain concerns regarding the potential influence of the AI tool on the development of students' ability to think critically and analytically, especially as they evaluate the generated information. On one hand, ChatGPT could be a valuable tool to enhance critical thinking skills, as it allows the holistic development of students. These are evident in the following transcripts:

"I believe that utilizing ChatGPT is a skill that needs to be developed." (IP1)

"ChatGPT operates on clear instructions as it navigates its database." (IP1)

Sub-theme 2: ChatGPT Technical Limitations. The technical limitations of ChatGPT include its inability to cater to complex conversational scenarios, its dependence on the information to be generated, and the biases that it can perpetuate. This is also supported by the participants, as they showed evident recognition of the tool's convenience. These are shown in the following transcripts:

"As such, fine-tuning the instructions to generate the right content is usually a challenge, especially when the content is highly specialized." (IP1)

"One challenge is maintaining context and consistency." (IP2)

"Since ChatGPT only remembers the previous conversation, this can impact the coherence of longer or more complex documents." (IP2)

"Additionally, formatting elements like tables, footnotes, and outlines often require manual adjustments and modifications." (IP2)

"Also, some content may be too general and require further refinement." (IP3)

Sub-theme 3: ChatGPT Limited Accessibility. The use of ChatGPT in higher educational institutions has raised certain issues with regard to accessibility and inclusivity. This is also supported by the participants shown in the following transcripts:

"ChatGPT does not have real-time updates and may lack the latest information." (IP3)

"It does not have access to exclusive academic resources or materials." (IP3)

"There's also risk of originality issues, as ChatGPT does not copy the text verbatim from sources, necessitating verification." (IP2)

Sub-theme 4: ChatGPT Unreliable Information. ChatGPT, powered by large language models, has found widespread use but is unreliable. This is also supported by the participants shown in the following transcripts:

"The credibility of the information gathered using AI tools and whether their credibility is extended to the present time." (IP4)

"ChatGPT can sometimes generate incorrect information." (IP5)

"I always compare the information from ChatGPT with the information from the other website." (IP5)

Theme 5: Enhancing ChatGPT Content and Ensuring Student-Centeredness

In integrating ChatGPT-generated content, it is essential to ensure that the content fits the learning goals. The participants shared their experiences and strategies for improving and enhancing ChatGPT-generated content before incorporating it into the learning and instructional materials. These strategies

include: Refining ChatGPT Content; ChatGPT Content Validation; Student-centeredness in ChatGPT; and Effective ChatGPT Prompting.

Sub-theme 1: Refining ChatGPT Content. As Artificial Intelligence (AI) has rapidly evolved and is trending in recent years, its trained systems have led to different applications in various disciplines, such as health care and education. Considering the issue of generating incorrect, inaccurate, or fake information in accuracy, the respondents noted that they have various strategies to ensure the accuracy of the generated content of ChatGPT. This includes reviewing generated results, rephrasing and rewording, replacement of biased words, and appropriateness and refinement of language. These are evident in the following transcripts:

> *"I do not use my ChatGPT-generated learning materials as is." (IP1)*
>
> *"I rephrase and reword to avoid common patterns in ChatGPT's answers." (IP2)*
>
> *"I replace biased language with more inclusive and neutral terminology." (IP5)*
>
> *"I refine the language to ensure it is clear, concise, and appropriate for my target students." (IP5)*

Sub-theme 2: ChatGPT Content Validation. In terms of content validation, the instructors noted that cross-checking using traditional material, comparing with existing literature, and supporting AI-generated content with legitimate sources are considered before incorporating ChatGPT-generated content into their learning materials. These are shown in the following transcripts:

> *"I cross-checked the information gathered through AI tools using traditional materials such as books and textbooks" (IP4)*
>
> *"I try to compare these materials with the ones existing online to get a better perspective." (IP1)*
>
> *"It's the fact-checking and supplementing AI-generated content with legit sources." (IP3)*

Sub-theme 3: Student-centeredness in ChatGPT. In this modern era, education is focused on being student-centered. Hence, this must also be considered in terms of integrating ChatGPT-generated content. According to the following transcript, the reflection based on the level of students makes the instructors more prepared to deliver the lesson.

> *"I make sure that, before editing them, I have reflected upon the level of my students, the course learning outcomes, or the time frame of the activities." (IP1)*

Sub-theme 4: Effective ChatGPT Prompting. The respondents noted that to get an effective ChatGPT prompt, they should use clear instructions for more specific responses. This is reflected in the following transcript:

> *"I use clear prompts and questions to get more specific responses." (IP2)*

4. DISCUSSION

Among the 138 respondents and five participants, it showed that most instructors were aged 25 to 45 years, with 35% from ages 25-30 years, 40% from ages 31-37 years, and 25% from ages 38-45 years. These data provide a balanced distribution of novice and experienced educators. As to the gender distribution, 83 were females, and 60 were males, who are actively engaged in exploring and integrating AI-driven teaching tools. In terms of the teaching experience, the majority of the samples had 5 to 20 years of service in the academe, indicating that the respondents and participants have sufficient pedagogical knowledge and expertise while adapting to the integration of AI in teaching pedagogy. Lastly, their subject specializations encompass education, humanities, social sciences, and STEM disciplines, all of whom are interested in integrating ChatGPT in developing courses and learning materials.

Both the quantitative and qualitative data emerged through a mixed-methods approach design to ensure a comprehensive and substantial understanding of instructors' perceptions of utilizing ChatGPT in

developing courses and learning materials. For the quantitative part, the instructors' perceptions were numerically and statistically analyzed in order to identify the patterns and trends and to quantify and compare responses across demographic groups. For the qualitative part, the data emerged from the results of the quantitative data analysis. Through this, it allowed the participants to share, elaborate, and discuss their experiences, challenges, and ethical considerations when integrating ChatGPT into course and learning materials development. In general, the two forms of data provide a deep understanding of the implications of ChatGPT use in constructing, developing, and innovating educational courses and materials.

According to AlAfnan et al. (2023), ChatGPT is a beneficial learning tool as instructors integrate this technology in the classrooms, which can also provide learners with opportunities to explore and analyze contextualized examples with the assistance of the said tool. In the study conducted by Bello et al. (2024), as to the usefulness and perceived use of ChatGPT, the learners also found that the technological tool is generally positive and impactful to them. As per the study of Alibrahim (2024), it was found that ChatGPT has some limitations when it comes to deep understanding, and it has a limited ability to solve and simplify complex problems. This only shows that the instructors who are using the tool must ensure the accuracy of the AI-generated information and content. In the study of Dempere et al. (2023), ChatGPT provides beneficial functions, especially in research, grading systems, and enhancing human-computer interaction. In addition, the tool can also be utilized in streamlining the enrollment process, improving the delivery of quality student services, and enhancing teaching innovations and approaches. This also means that ChatGPT, as an educational tool, is impactful in the field of education. According to Hakiki et al. (2023), the result of their experimental study showed that ChatGPT has a positive effect on learners' achievements and can also enhance student learning outcomes. According to Osman et al. (2024), ChatGPT can enhance the performance of learners in higher education through the implementation of initiatives and strategies that will improve the effectiveness, quality, and outcomes of students' educational experiences. According to Kolade (2023), ChatGPT can generate authentic and high-quality content from distinct personal accounts. Moreover, it requires manual editing and verification since it is not reliable for generating multiple original pieces of content from one user, as it struggles with referencing. According to Elbanna & Armstrong (2024), ChatGPT can effectively be integrated in educational settings to enhance the learning experiences of learners, which can result in increased efficiency and productivity, leading towards adaptive learning.

4.1. Integrated Data Analysis

Firstly, the instructors noted that ChatGPT, as an educational tool, is beneficial as it reduces their time and efforts in preparing accessible, well-structured, relevant, and high-quality instructional materials. In addition, the instructors believed that the tool is user-friendly, especially for the seasoned faculty who are having difficulty navigating the ICT. This is supported by the qualitative data provided by the participants, as they did not encounter any difficulty in utilizing the tool as long as they gave the right commands and prompts to generate good materials. In addition, it is believed that the AI tool helps find and summarize information. According to Husaeni et al. (2025), the impactful and sustainable effect of the implementation of AI in teaching pedagogy is evidently seen in various aspects, such as in learning strategies, the relationship between computational skills and other skills, educational media, and the like. This only indicates that AI, as one of the platforms and tools, must be given importance, as it supports the development of education, which can result in the improvement of learning quality that positively impacts learning experiences across the globe.

Secondly, the quantitative data revealed that ChatGPT does not provide reliable information and is not convenient for reviewing, revising, and enhancing course and learning materials. These results are aligned with the qualitative data since the participants also encountered challenges in ensuring the reliability and accuracy of the information. Some ChatGPT-generated content may contain errors or a lack of credibility. There is information that is incorrect, vague, and outdated. In connection with the study of Yan (2025), it shows that AI is beneficial in terms of its efficiency, personalization, and automation. However, it poses biases and privacy risks among its users. Therefore, ChatGPT users should cross-check and evaluate the AI-generated information using other references and materials to ensure accurate, reliable, and valid data.

Thirdly, as per the quantitative data, the instructors emphasized that they do not feel confident in utilizing ChatGPT as an educational tool in developing courses and learning materials. Also, it does not make them more effective and efficient in constructing innovative teaching and instructional materials. Moreover, they do not trust that ChatGPT provides accurate data that will make it easy for them to construct course materials. These quantitative data corroborate the qualitative data; participants viewed that they should not fully base their learning materials on this AI tool, as it can sometimes generate inaccurate or misleading information. It does not have real-time updates and may lack the latest information, which can also affect its accessibility to exclusive academic resources or materials. According to Marić and Petković (2024), it is a must that AI users should usually consider the potential risks that the tool can provide. Aside from the opportunities that it can bring for purpose of the creation of digital content, security of personal information, prevention of all potential abuses, and others, AI users should need to prioritize and remember the limitations and what artificial intelligence can still offer.

Fourthly, the quantitative data suggest that the instructors are willing to explore the features of ChatGPT to further improve their performance as instructors in developing courses and learning materials. In addition to this, they usually consider the ethical aspects and issues related to AI-generated information. These are supported by the qualitative data provided by the participants. It is believed that there are potential risks and issues, but so far, they have not encountered any issues. However, for research purposes, they have seen that ChatGPT has some plagiarism issues. In connection with this, they consider diverse perspectives and use a variety of sources to create balanced learning materials. As to the impact of ChatGPT as an educational tool, it enables instructors to create more innovative and engaging course materials; promote a more student-centered approach; and integrate artificial intelligence with human intelligence. These are related to the participants' responses as they noted that ChatGPT helps them to become more inclusive in terms of using neutral terminology, and they refine the language to ensure clarity, conciseness, and appropriateness for the target or concerned students. In relation to the study of Ignjatović (2024), it shows that AI technologies in education should be equitable, pedagogy-driven, and human-centered in accordance with the designed regulatory frameworks, following the highest level of ethical considerations and principles, human rights-based, and pedagogical standards.

Lastly, the quantitative data revealed that ChatGPT, as an educational tool, is efficient in identifying specific learning outcomes based on the learning outcomes and curriculum standards. The AI tool also suggests appropriate courses and learning materials that are suitable for attaining learning outcomes. It can identify authentic assessment criteria, generate problem-based and project-based outcomes, and offer feedback mechanisms that also address differentiated instruction. Moreover, it offers an alternative way of assessing students' learning outcomes, ensuring that the assessment objectives are comprehensive and constructively contextualized. These quantitative results are aligned with the qualitative data since the participants noted that before editing the final form of the instructional material, they usually reflect on the level of their students. The ChatGPT-generated contents undergo cross-checking by comparing it with traditional materials such as books, textbooks, and other sources or websites. In summary, ChatGPT is a skill that needs to be developed, as noted by one of the participants. It requires critical and analytical thinking with logical reasoning skills since most content is subject to further refinement and validation processes. These results and findings corroborate the study of Li et al. (2025), which indicates that the integration of AI tools inside the classroom is exponentially growing, given that AI technologies are presently implemented in educational settings. With this, it is important to take into consideration the need for allocation of necessary funds for investment in digital infrastructure, specifically to underdeveloped and developing regions.

5. CONCLUSION

The results of the study revealed that ChatGPT, as an educational tool in terms of its usefulness, is beneficial for instructors, especially when developing courses and learning materials, since it provides information that is accessible, well-structured, and relevant, and provides real-time feedback. However, it also showed that ChatGPT does not enhance the critical and analytical thinking of the instructors as they innovate diverse course learning materials. As to the ChatGPT ease of use, it was found that it does not provide reliable and authentic information, and research-based content for academic purposes, and is not convenient for reviewing, revising, and enhancing instructional materials. On the contrary, the tool is user-

friendly, especially for seasoned faculty with different levels of technological expertise. Moreover, instructors do not feel that they are confident in the ChatGPT-generated information because of its reliability issues. With this, they often consider the ethical aspects and issues of it. The integration of ChatGPT in education enables instructors to address difficulties in conceptualizing and developing course materials. The good thing about the tool it suggests learning outcomes based on the provided course content, students' interests, needs, and readiness, and it offers feedback mechanisms concerning the results of the performance of the students. It also addresses differentiated instruction to meet the diverse expectations of learners to produce authentic performance outcomes. With regard to the assessment outcomes, it offers alternative ways of assessing the students, which are applicable for both traditional and authentic assessments. Furthermore, it reduces the time instructors need to spend, leading to more productive performance. Instead of dedicating most of their time to drafting, developing, enhancing, and formatting course learning materials, they can use ChatGPT as an educational tool to save time, effort, energy, and resources.

The findings of the study showed that ChatGPT is convenient and efficient in terms of its usage. With the appropriate prompts and commands, it can able to generate good learning materials. In connection with this, patterns, accuracy, and efficiency are present, which is why instructors should be cautious about the information being generated since it can be treated as incorrect, vague, and outdated. Having said this, they need to review, evaluate, assess, and validate the responses being provided. The study also revealed that instructors should be responsible users of the tool, ensuring the balance and avoiding too much dependence. As to the ethical considerations and practices in using ChatGPT, instructors should carefully address plagiarism issues, biases, and data privacy, and they must conduct cross-referencing for accuracy. Moreover, ChatGPT requires the necessary skills that need to be developed. With its technical limitations, it cannot have complex conversational scenarios, it has prevailing challenges in maintaining context and consistency, and it can impact the coherence of longer or more complex documents. In general, ChatGPT can enhance content that ensures student-centeredness. The instructors have various strategies as they utilize the AI tool, such as reviewing generated results, rephrasing and rewording, replacing biased words, and appropriateness and refinement of language. Before they incorporate the generated content into their learning materials, they usually compare it with existing literature and reliable references.

Additionally, this study provided valuable insights while considering several limitations, such as the sample size, participant demographics, and self-reported perceptions, among others. With these considerations, this study restricts the generalizability of the findings to a larger sample of population sample. The self-reported perceptions may also introduce bias because the participants' responses may be limited based on their exposure and lack of experience in using ChatGPT. Furthermore, for a more comprehensive understanding of ChatGPT as an educational tool, future research should use longitudinal or observational methods and include larger and more diverse samples from across demographic information, such as age, gender, teaching experience, field of specialization, educational attainment, and the like.

There must be a series of training, workshops, and orientation about the integration of Artificial Intelligence in education. Educators in higher education institutions may develop training modules focused on AI literacy that emphasize critical evaluation of AI-generated content. Other researchers may also consider exploring the AI-based frameworks for curriculum integration while ensuring the academic integrity of the developed learning materials. In addition, the educational institutions, in collaboration with non-government organizations and local government units, must promote programs, projects, and activities that will make the instructors responsible users of AI tools. Moreover, there must be a policy development regarding the ethical guidelines and promotion of digital literacy among the faculty to enhance their utilization of the AI tools such as ChatGPT. With the cited results and findings, an AI-driven policy recommendation is necessary for institutional planning, curricular decisions, and AI integration in education. If this is not addressed accordingly and is not prioritized by educational stakeholders and government authorities, it will lead to the continuous deterioration of our educational system, leading to unproductive citizens, resulting in an unstable economy.

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Research Ethics. To protect the rights and welfare of the respondents and the participants, this study complied with the ethical guidelines. They were given clear information about the goals, methods, possible dangers, and advantages of the study. Throughout the study, informed consent and strong confidentiality measures were sought. All personally identifiable information gathered was kept private and safe. Anytime they chose to stop participating, there were no repercussions. To protect the integrity and dignity of every participant, the study complies with accepted ethical standards.

Data Availability Statement. All data can be obtained from the corresponding author.

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