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Experiment on How AI Can Help to Improve the Knowledge in Everyday Conversation Skills

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ABSTRACT : Objective: The aim of this experiment is to observe the impact of utilizing artificial intelligence (AI) on the depth and quality of conversations among students participating in the Go Bali program at Udayana University in Bali, with a focus on Symbolic Interactionism theory.
Methodology:

1. Participants: Select 8 students from Udayana University in Bali who are enrolled in the Go Bali program.
2. Procedure:

a. Stage 1: Initiate a one-minute conversation among the participants on a given topic.

b. Stage 2: Allow the participants to gather information and insights on the same topic using AI technology or a similar platform for a duration of three minutes.

c. Stage 3: Conduct a second one-minute conversation among the participants on the same topic, incorporating the insights gathered during Stage 2.

3. Data Collection: After the experiment, distribute a questionnaire to the participants to gauge their perception of the effectiveness of the communication during both stages of the experiment, with a focus on how Fieske‘s Communication theory influenced their interactions.

Expected Outcome: It is anticipated that utilizing AI for information gathering will enhance the depth and quality of conversations among the participants, as evidenced by their responses in the questionnaire, influenced by the principles of Fiskes Communication theory.

I. INTRODUCTION

In an increasingly digital world, artificial intelligence (AI) is playing a more significant role across various domains, including education. The integration of AI technologies into teaching and learning processes offers new opportunities for knowledge dissemination and the creation of innovative learning environments. One of the promising applications of AI in education is the use of interactive chatbots that can serve as information sources and support the learning process. This paper presents an experiment aimed at exploring the effectiveness of the AI-powered chatbot ChatGPT as an educational tool, examining its impact on knowledge acquisition and group discussion dynamics.

The experiment was designed to assess how ChatGPT could enhance students' understanding of different topics and improve the quality of their discussions. Eight students were divided into four groups, each assigned a specific topic to explore. The topics included the upcoming elections in France, the culinary highlights of Bali, the practical applications of artificial intelligence in everyday life, and the current evaluation of NVIDIA stock. The experiment began with a one-minute spontaneous discussion on each topic, followed by a three-minute research phase during which students used ChatGPT to gather information and expand their knowledge. After this research phase, the groups engaged in another one-minute discussion to reflect on their newly acquired insights and evaluate how their perspectives had shifted.

The primary objective of the experiment was to determine the effectiveness of ChatGPT as an information source for enhancing students' knowledge and to assess the quality of discussions following the interaction with the AI tool. Additionally, the experiment aimed to identify challenges encountered during the use of AI in educational settings and to develop suggestions for improving the integration of such technologies into educational processes. In the following sections, the results of the experiment are presented and analyzed to understand how AI can be used as a learning resource and to explore the potential benefits and limitations of integrating AI tools into educational contexts. The study provides insights into the role of artificial intelligence in supporting educational objectives and offers recommendations for future applications of AI technologies in learning environments.

II. RESEARCH METHODS

This will be a qualitative study. Document study, observation, and interviews were carried-out to retrieve data among 8 participants under the Go Bali program at Udayana University in Bali. The research procedure consisted of three steps: an initial one-minute conversation on a given topic, followed by a second step where participants were given three minutes to gather information with the guidance of AI technology on the same topic, after which a follow-up one-minute conversation on the same topic was made, including the information from the insights that were gathered. Finally, at the end, there were questionnaires driven by effective responses to the communication process at each of the two stages of the experiment. These questions bring into light the way in which participants perceive the depth and quality of conversations. Data analysis will be of a descriptive- interpreter approach, trying to prove the effect of AI on depth and quality in the development of everyday conversation skills among participants. This will consider the Fiske Communication Theory, which is theoretically built for such interpretation.

III. DISCUSSION

3.1 CONSTRUCTION AND IMPLEMENTATION

For an experimental research project, eight students were selected and divided into four groups of two individuals each. Each group was assigned a specific topic, including the upcoming elections in France, the culinary highlights of Bali, the practical application of artificial intelligence in everyday life, and the current evaluation of the NVIDIA stock.

The experiment began with a one-minute spontaneous discussion within each group on their assigned topic. Subsequently, the students had three minutes to expand their knowledge on the topic using artificial intelligence, represented by the ChatGPT chatbot, capable of answering questions and providing additional information. After the three minutes elapsed, the students discussed again for one minute about their newly acquired insights and how their perspectives may have changed. The focus of the experiment was to examine how effectively artificial intelligence can be used as an information source in an educational context and how this usage impacts conversations.

The final assessment by the students was conducted through a questionnaire in which they recorded their experiences and impressions. They evaluated, among other things, the usefulness of artificial intelligence for knowledge enhancement, the quality of the discussion after interacting with AI, and their overall engagement during the experiment. The results of this evaluation formed the basis for analyzing the effectiveness and potential challenges of integrating artificial intelligence into educational processes and conversations. The experiment provided insights into the capabilities of modern technology to quickly and effectively impart knowledge.

The following section evaluates the experiment to gain insights into how the use of artificial intelligence has influenced knowledge acquisition and group dynamics.

3.2 OBJECTIVE OF THE EXPERIMENT

The primary objective of the experiment was to explore how effectively the ChatGPT chatbot can be used as an information source in an educational context and to examine the impact of this interaction on knowledge acquisition and group dynamics during discussions. Specifically, the experiment aimed to investigate the extent to which ChatGPT can assist students in quickly and comprehensively gaining information about a given topic, and how these new insights affect the quality and engagement of subsequent group discussions.

At the outset of the experiment, students were divided into four groups, each assigned a specific topic. The groups began by engaging in a one-minute spontaneous discussion to assess their initial knowledge and opinions on the topic. This initial discussion served to capture the participants' starting points and existing knowledge.

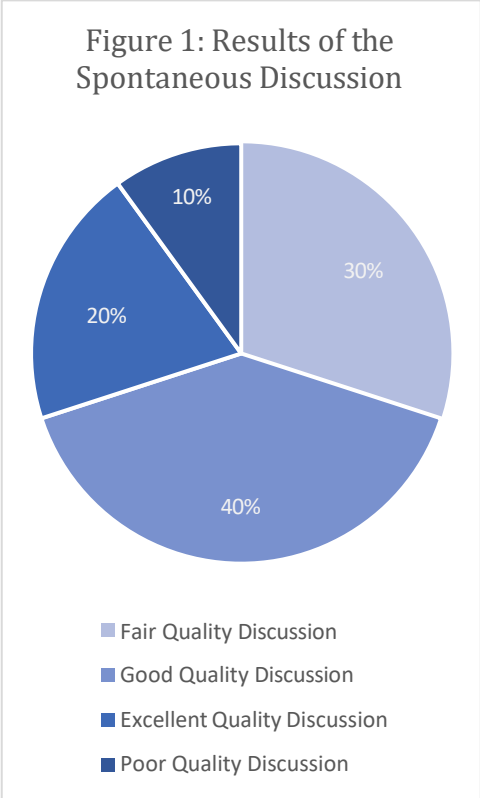
Following this, the groups were given three minutes to use ChatGPT to gather additional information about their topic. This phase was designed to test the effectiveness of ChatGPT as an information source by evaluating how well the chatbot could provide relevant, accurate, and comprehensive information that extended beyond the students' initial knowledge.

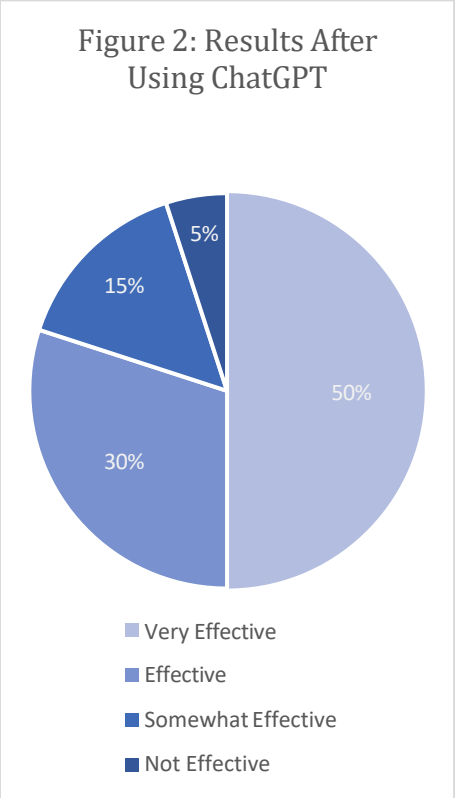
The second main objective of the experiment was to analyze the effects of the interaction with ChatGPT on group dynamics and the quality of the subsequent discussion. After the information-gathering phase, the students engaged in a one-minute discussion to share their new insights and reflect on how their perspectives might have changed due to the use of ChatGPT. This part of the experiment aimed to explore whether and how the information obtained from the chatbot influenced the discussion, increased participant engagement, and led to a deeper exploration of the topic.

In summary, the experiment sought to gain insights into how artificial intelligence, specifically ChatGPT, can support knowledge acquisition in an educational setting and what role this support plays in enhancing the quality and depth of group work and discussions.

IV. EVALUATION OF THE EXPERIMENT

The experiment was divided into two phases, each focusing on different aspects of the use of artificial intelligence. The following evaluation is divided into two main parts: the analysis of the spontaneous discussion before using ChatGPT and the assessment of the discussion after the interaction with the chatbot. This structure allows for a detailed evaluation of how the use of artificial intelligence affected students' knowledge acquisition and the dynamics of their group discussions.





i.First Part of the Conversation: Spontaneous Discussion Before Using ChatGPT

At the beginning of the experiment, each group was asked to engage in a one-minute discussion about their assigned topic without using any external information sources. This initial phase aimed to capture the starting point of the discussion and evaluate the students' prior knowledge and opinions about their topics.

During this first phase, it became apparent that there was a varied level of knowledge among the students. Some groups entered the discussion with a strong foundation of knowledge and were able to articulate detailed thoughts and ideas on their topics. In contrast, other groups started their discussions with more superficial or uncertain views. These varying levels of initial knowledge highlighted that there was a significant range of understanding among the students, setting the stage for the later information-gathering phase with ChatGPT.

The spontaneous discussions showed that while the students demonstrated a basic interest in their topics, there was also a noticeable level of uncertainty stemming from gaps in their knowledge or specific information. These initial conversations were often based on general observations rather than detailed facts or analyses. This phase thus provided a baseline for measuring the effectiveness of ChatGPT as an information source and set the expectations for the subsequent phase where students aimed to deepen their understanding.

ii.Second Part of the Conversation: Discussion After the Use of ChatGPT

In the second phase of the experiment, the groups were given three minutes to use ChatGPT to gather additional information on their topics. Following this information-gathering phase, the groups had one minute to discuss their new insights and reflect on how their perspectives might have changed as a result of their interaction with the chatbot.

This phase revealed that the use of ChatGPT had a significant impact on the quality and depth of the group discussions. The students reported that the information they received from ChatGPT greatly expanded their knowledge and allowed them to explore their topics in more detail than in the initial discussion. The access to precise and relevant information led to more engaging and insightful conversations, where students were able to delve into more complex aspects of their topics.

The reflection after the information-gathering phase showed that students found the interaction with ChatGPT to be highly beneficial. Most participants felt that the information they received either confirmed or expanded their initial views, leading to a deeper understanding of their topics. Many students noted that being able to ask specific questions and receive detailed answers helped to structure their discussions and address more nuanced aspects of the topic. This phase highlighted that ChatGPT acted as a valuable tool for enhancing the learning process by providing access to well-rounded information and fostering a more thorough examination of the subject matter.

In summary, the analysis of the second part of the conversation demonstrated that ChatGPT served as an effective tool for knowledge acquisition and for improving the quality of group discussions. Students were able to use the information gained from ChatGPT to enrich their discussions, develop more sophisticated arguments, and engage in a more meaningful exploration of their topics. The results from this phase underscored the potential of artificial intelligence as a beneficial educational resource that can support deeper learning and enhance group dynamics.

Overall, the experiment showed that ChatGPT significantly improved the students' knowledge base and the quality of their discussions. The students benefited from the chatbot's precise and relevant information, which facilitated critical reflection and a more in-depth engagement with their topics. These findings highlight the effectiveness of artificial intelligence as an educational tool and suggest that it can play a valuable role in supporting learning processes and fostering more engaging and productive group discussions.

b. CHALLENGES AND RECOMEMENDATIONS FOR IMPROVEMENT

Throughout the experiment, several challenges were identified, which offer important insights for future implementations of similar studies. These challenges, along with recommendations for improvement, are detailed below.

One of the primary challenges observed was the quality of information processing by the students. Although ChatGPT provided comprehensive and relevant information, it became evident that the students often accepted this information at face value without critically evaluating its accuracy or considering alternative viewpoints. To address this challenge in future experiments, it is essential to emphasize the development of **critical thinking skills** among students. This can be achieved by incorporating specific training sessions or guidelines that teach students how to critically assess the credibility of information and evaluate the reliability of sources. For example, pre-experiment workshops could be organized to introduce students to methods for verifying information, such as cross-referencing multiple sources or questioning the validity of the data provided by the AI. By fostering these skills, students will be better equipped to engage with the information more critically and make informed judgments.

Another significant challenge was related to time management during the information-gathering phase. The three minutes allocated for researching with ChatGPT were perceived as too short by some students, which limited their ability to fully explore their topics. To improve this aspect of the experiment in the future, it is recommended to extend the research time to allow students more opportunity to delve deeper into their topics. A possible solution could be to provide a longer research period, such as five to seven minutes, which would give students more time to ask detailed questions and gather comprehensive information. This adjustment would help ensure that

students have ample time to engage with the topic more thoroughly and enhance the overall quality of their discussions.

Technical issues also posed a challenge during the experiment. Ensuring that every student had reliable access to the ChatGPT chatbot during the research phase was crucial for the success of the experiment. In future iterations, it is important to address these technical aspects to prevent access issues that could hinder the effectiveness of the information-gathering process. This could involve checking and testing all technological setups in advance, ensuring that there are sufficient devices and internet connections for every participant, and having a technical support plan in place for troubleshooting any problems that arise during the experiment.

By addressing these challenges improving the critical evaluation of information, extending the research time, and ensuring technical reliability—the effectiveness of future experiments using ChatGPT or similar technologies can be significantly enhanced. These improvements will help create a more robust and effective framework for integrating artificial intelligence into educational settings and facilitate a more comprehensive and engaging learning experience for students.

V. CONCLUSIONS AND SUGGESTIONS

The experiment demonstrated that ChatGPT can serve as a valuable tool for knowledge acquisition and the enhancement of group discussions in an educational setting. The results confirmed that the use of ChatGPT enabled students to quickly expand their knowledge and significantly improve the quality of their discussions. Students benefited from the precise and comprehensive information provided by the chatbot, which allowed them to delve deeper into their topics and engage in more structured and meaningful discussions.

However, the experiment also revealed several areas for improvement. Notably, it became clear that there is a need to strengthen students' abilities to critically evaluate the information provided by ChatGPT. While the chatbot was effective in delivering relevant information, students sometimes accepted this information without questioning its validity or exploring alternative perspectives. Future experiments should focus on developing students' critical thinking skills, perhaps by incorporating training sessions or guidelines that teach how to assess the credibility of information and consider multiple viewpoints. For example, pre-experiment workshops could be introduced to help students learn techniques for verifying facts and evaluating sources effectively.

Another significant finding was that the three inute time limit for the research phase was often insufficient for thorough exploration of the topics. Extending the research time to five to seven minutes could provide students with more opportunities to engage deeply with their subjects and obtain more comprehensive information. This adjustment would allow students to formulate more detailed questions and gather better insights, thereby enhancing the quality of their subsequent discussions.

Technical issues also emerged as a challenge during the experiment. Ensuring that all students had reliable access to ChatGPT was crucial for the success of the research phase. Future experiments should address these technical aspects by thoroughly testing all systems in advance, ensuring adequate devices and stable internet connections for all participants, and having a support plan in place for troubleshooting any problems that arise during the experiment.

Looking ahead, there are promising opportunities for the continued development and application of ChatGPT as an educational tool. The positive impact of ChatGPT on knowledge acquisition and discussion quality suggests that there is significant potential for this technology in educational contexts. Future research could explore how AI tools like ChatGPT can be more effectively integrated into teaching and learning processes to create even more engaging and productive learning environments.

In summary, the experiment has highlighted how artificial intelligence can be leveraged to improve educational outcomes and foster meaningful discussions. The insights gained from this study, along with the proposed improvements, provide a strong foundation for future experiments and applications of AI in education. By addressing the identified challenges and exploring new approaches, we can work towards maximizing the benefits of artificial intelligence in creating innovative and effective educational experiences.

In conclusion, the experiment demonstrated that ChatGPT is a valuable resource for enhancing knowledge acquisition and discussion quality in educational settings. The positive outcomes encourage further exploration and development of AI technologies to better support learning processes and foster more engaging educational experiences for students.

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