

LEVERAGING CHATGPT TO DEVELOP ACCREDITATION-ALIGNED QUESTIONS AND ASSESSMENTS

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Abstract: The idea behind this research is to use available Artificial Intelligence techniques to develop student assessments which are along the lines of the various types of academic accreditations of the same program. It was determined whether it is possible to use ChatGPT technology to generate a test that is suitable for ABET accreditation. A new way was suggested that would enable the linking of the verbs that were used in the construction of the test items or questions that formed the test. This advancement presents the possibility of using ChatGPT technology to create items and test their validity to measure educational outcomes. A poll was circulated in order to establish whether there are faculty members who would approve the use of ChatGPT for generating exam questions as well as the approval of assistance for the faculty in validating questions and changing them as per the standards of academic accrediting bodies. The survey was conducted among the faculty staff of various specializations in the College. Received were 100 responses which demonstrated that 80% of the respondents were in favor of the generation of complete exam questions with the aid of ChatGPT. On the other hand, 96% of the respondents voted in favor for editing and improving already existing questions.

IndexTerms – ChatGPT, AI, Bloom's Taxonomy, ABET, NAAC, SO, IS Program.

I INTRODUCTION

Instructors can take advantage of the questions requesting feature of the technology with reservations that it is within the scope of the required accreditation. As a result, the educator can instruct the application to construct inquiries based on the criteria set by the educator, provided they are within the requisite qualification standards. Moreover, it can develop questions to span across several provisions and multiple accreditations. Integrating this taxonomy into the Eastern International University School Board meeting was one of the ways I was able to explore how educators use this strategy to them. This study utilized Bloom's Taxonomy of Educational Objectives in order to relate the requirements of the ABET [2] with the formation of the ABET accreditation. There is a vast literature on the use of the concepts of mapping by using Bloom's taxonomy verbs of the same curriculum in order to enhance the quality of formulated questions targeted to assess students' knowledge [3] [4] [5]. In this study, Bloom's Taxonomy was used to cross the various areas of accreditation achieved during the course of the study. The broader connections between specific disciplinary aims and broader generalities were made through a set of observable Indicators. Instead, requirements mapping was performed on the basis of the native standard and criteria documents for accreditation bodies. Through the use of the different Levels of Knowledge Bloom's Taxonomy of verbs that indicates different levels were mapped.

There is some conformity among different academic accreditation requirements in relation to the concern of articulating verbs in questions that test students' knowledge. Therefore, accreditation can grant us some resources on verb-required questions. This is important as it allows one to be able to do question generation that is consistent with the needs of the accreditation system and more so the accreditations in a matter of minutes and without much effort from the instructor and at the same time making it easier for the reviewers to check whether the program accredited qualifies or not. The interest of the members of the faculty to use this technology to make the process of coming up with questions faster was investigated. Moreover, the extent of contentment with the relationship between the verbs of the ABET framework was also investigated. Faculty members were given a survey to gauge their level of interest in the use of ChatGPT technology for the formulation of suitable questions as per the lesson delivered and the intention of the course. Out of 100 faculty members who responded, 80% of them wanted to use the method. Also, 96% preferred to use this technology completely for help, advice, and correction of the prepared questions.

II LITERATURE REVIEW

Natural Language Processing (NLP) system has improved tremendously in recent years. However, the advent of ChatGPT (Chat Generative Pre-Trained Transformer) has once again increased interest and excitement in this technology [6]. OpenAI developed ChatGPT, which opened to the public in November 2022. ChatGPT grew so fast that it had 1 million users in five days.

ChatGPT is a large language model that displays exceptional generation and understanding abilities almost as humans speak. The attention that it was able to answer questions, sustain a dialogue and respond logically and contextually was a step forward in the development of conversational AI. Many new ideas related to this innovative AI technology [8] were break through several conversations regarding numerous applicabilities of ChatGPT and how it may increase effectiveness of users in different fields.

ChatGPT, while capable, is essentially a complex chatbot that traces back to the early stages of Long Short-Term Memory (LSTM) technology. It has been used in various areas like customer service, online shopping, healthcare, and education. In the AI

field, machine learning means that computer systems can learn from experience without specific instructions. Thanks to better processing power, more data, and improved algorithms, deep learning is now a strong predictive tool. Additionally, ChatGPT is used for evaluation purposes.

ChatGPT is a large language model that understands and generates text like humans do. Its ability to answer questions, hold conversations, and give relevant responses marks an important step in conversational AI. The first model, GPT-1, came out in 2018, followed by GPT-2 in 2019 and GPT-3 in 2020. Each update improved the model's size, training data, and language task performance. On November 30, 2022, OpenAI released a free preview of ChatGPT, increasing its estimated worth to \$29 billion.

III ABET (Accreditation Board for Engineering and Technology) & NAAC (National Assessment and Accreditation Council)

ABET has an influence on quality assurance to consider programs in applied and natural sciences, computing, engineering, and engineering technology [2]. ABET accreditation is known worldwide to guarantee that a college or university program follows the quality standards that matter to the profession its graduates prepare for. The Department of Information Systems in the Department of Computer Science at the College of Computer Science and Management, Pune puts ABET criteria into action within its undergraduate curriculum. The team used the student outcome (SO) from the Website Design and Development course (CS-363), and those outcomes helped create learning outcomes that meet NAAC requirements [1]. Teachers gauge students' learning outcomes by crafting questions with specific action verbs. These questions test students' knowledge and skills in the subject. The grades students get on each question show how well they understand different parts of the course. The College can get both national and international approval for one study program. This means a single program can earn various academic stamps of approval in different ways. Many studies suggest a link between ABET and the NAAC in India. Several published research papers have tried to back up these ideas [23] [24].

IV CHATGPT FOR GENERATING QUESTIONS

Every single class gets its own special app made with ChatGPT. We stuff the databases full of stuff from each class's content. The system learns how to whip up questions and then gets good at guessing what kind of questions work best sticking to what each accreditor says is important just like we talked about in this study. The real head-scratcher is figuring out if we can get this machine to ask stuff that's not in the book to make kids use their noodles. That's where we think deep learning and those fancy Generative AI tools could come in handy. The person in charge or the teacher decides what sorts of smarts or know-how we're looking for in any subject. So how's this thing even work?

The teacher asks the machine to come up with questions about a specific subject from the course. The machine makes questions that match the needs of the school's accreditations, like the NAAC needed by Indian University's, Colleges and ABET too. Since there's a way to compare what each accreditation wants, the machine makes questions that go with both the local and global standards. The teacher tells the app to make a bunch of questions on a certain topic and says how many and what guidelines to follow so they fit the accreditations. If needed, the machine can improve the questions using changes the teacher or any official made earlier, to ensure they're top-notch.

V QUESTIONNAIRE

Evaluators at the College of Computer Science and Management in Pune rated how cool they are with the idea of using ChatGPT tech to create exam questions for the courses they teach. Also, folks wondered if they're down to tweak and polish those questions to make sure they're top-notch and align with the tough standards for University & College accreditation. They were hit up with a couple of questions. **The first was, "Are you down with using ChatGPT tech to come up with questions for tests and exams?" The next was, "You good with ChatGPT helping out in running tests (like fixing mistakes and offering advice) keeping in line with accreditation rules and stuff?"** This survey got passed around to different peeps in the College Departments.

5.1 The Outcome

Faculty members got the survey through WhatsApp in a random way. A hundred of them sent back their thoughts. 80% wanted to make questions using this new method. 96% who figured they'd benefit from this tech said it just helps shows the way, and makes corrections when they make questions. You can see what happened in Figures 1 and 2. Fifteen percent didn't like the idea of using this method to come up with questions. On the flip side, the same 96% who didn't like it also said it backs them up and makes tweaks when they're working on creating and refining stuff.

Q.1 Are you down with using ChatGPT tech to come up with questions for tests and exams?"

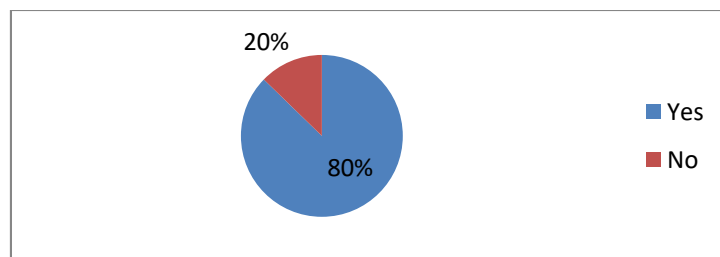


Fig 1. The percentage of acceptance of ChatGPT generates questions.

Q.2 You good with ChatGPT helping out in running tests (like fixing mistakes and offering advice) keeping in line with accreditation rules and stuff?

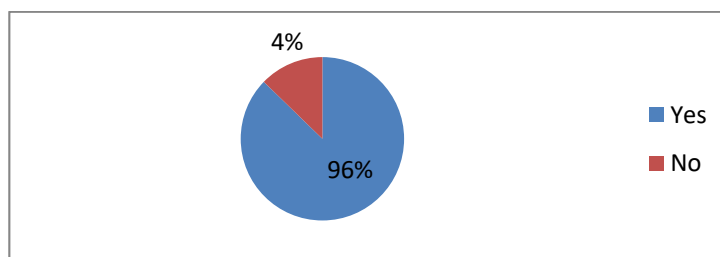


Fig 2. The percentage of acceptance of ChatGPT guides the evaluator to generate questions.

VI CONCLUSION & FUTURE WORKS

A new method of making questions was presented in a course assessment using the ChatGPT tool in this research. Also, the compliance of the questions with different academic accreditations was taken into account. A method was made in this research to deduce and the verbs related to the NAAC accreditation and the ABET accreditation to assess the student's instructional outcomes. Through this connection, we were able to find an approach for asking questions that are in harmony with the accreditations and that can engage the students in quality and efficiency effectively. Future functionalities of the app will be explained. The technology will be used more often during the creation process of questions and will be integrated into the educational process with ChatGPT technology.

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