ChatGPT, our new colleague

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Keywords

Abstract

With a focus on student misuse of generative artificial intelligence, the potential benefits of this technology to education scholars may be overlooked. The rapid development of large language models, such as ChatGPT, carries the potential to improve faculty productivity, efficiency, and objectivity.

In the educational realm, preliminary data suggests AI's potential to streamline and enhance various tasks, such as writing (Barrett & Pack, 2023). AI-based chatbots have been successfully utilized to provide feedback to public health students in after-class review sessions (Lee et al., 2022). However, the feasibility of generative AI for assessing student work has not been extensively studied.

In the research domain, qualitative analysis of student assignments using large language models such as ChatGPT has shown promise in recent studies (Gamieldien et al., 2023), but researchers agree that more investigation is necessary before we employ AI tools for grading. By utilizing GhatGPT as a collaborator in our thematic analysis, we aim to add insight into its capability to participate in such an investigation.

Research Questions

We are conducting two studies in which ChatGPT serves as a colleague, one in the role of co-investigator, and one in the role of co-faculty.

In the first study, we are performing a thematic analysis of student reflections. A secondary aim of this study (the focus of this presentation) is to assess the utility of ChatGPT to act as a fourth coder for a thematic analysis.

The primary goal of our second study is to determine the feasibility and accuracy of using AI in educational assessments. This study aims to compare the effectiveness and reliability of generative AI-created assessment data with traditional faculty assessment data in evaluating undergraduate nursing assignments.

Methods

To analyze the student reflections, we are using a collaborative thematic analysis approach. We will employ ChatGPT, a natural language processing model, as a member of our collaborative team by inputting the data into a GPT and training it to identify patterns in the data and form connections between those patterns.

To measure the effectiveness of AI as an evaluator of student work, assessment criteria will be uploaded to ChatGPT4 from selected assignments. ChatGPT 4 will be prompted to score student work based on the criteria. AI-generated assessments will be compared to faculty assessments.

Impact & Findings

Our work is forthcoming, but the analysis is anticipated to be completed by May 1. We hypothesize that ChatGPT will be a useful co-collaborator in our thematic analysis. Additionally, we anticipate that AI-generated assessments will closely align with faculty assessments, allowing AI to supplement traditional assessment methods. We anticipate that there will be limits of both applications.

Diversity, Equity, & Inclusion

AI can reduce the effect of human biases by serving as a bias check. For example, by employing AI as a co-evaluator, we can minimize faculty preconceived notions about students that might impact assessment and evaluation. Similarly, by utilizing AI as a co-investigator in thematic analysis, we can remove and/or highlight subjectivity and prejudice that might be present in human investigators.

Possible Applications

We anticipate that other education scholars can improve productivity, efficiency, and objectivity by using generative AI for qualitative analysis and assessment.

Learning Objectives

1. Identify the benefits and limitations of generative AI when performing content/ thematic analysis.
2. Appraise the feasibility and accuracy of using AI to evaluate student assignments.

References

1. Gamieldien, Y., Case, J. & Katz, A. (2023). Advancing qualitative analysis: An exploration of the potential of generative AI and NLP in thematic coding. http://dx.doi.org/10.2139/ssrn.4487768
2. Lee, YF., Hwang, GJ. & Chen, PY. Impacts of an AI-based chabot on college students' after-class review, academic performance, self-efficacy, learning attitude, and motivation. Education Tech Research Dev 70, 1843–1865 (2022). https://doi.org/10.1007/s11423-022-10142-8