Study designs with ChatGPT in an introductory statistics classroom

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Abstract

Can ChatGPT be a "new" tool in our statistics toolbox when teaching introductory statistics? An old-school toolbox consisted of a textbook, notes, and a calculator. In addition to the old-school tools, an up-to-date toolbox includes an electronic/open-source textbook, software, applets, and videos. Can we add ChatGPT to our toolbox? Learning how to use ChatGPT in a safe way is "moving forward". Understanding different study designs with the help of ChatGPT is the objective of our activity. To explore experimental designs, we propose a series of guided prompts such as *"What is a study design?", " What is a randomized experimental design (RED)?", "What is confounding?", "What is the difference between control and experimental groups?", "List the advantages of RED", "Provide a real-world application of a RED study in the business industry. Summarize in one paragraph. Explain what the experimental groups and potential confounding variables are.".* The skeleton of this activity follows the scheme: lecture; pre-test; ChatGPT session; post-test. It is designed for teaching introductory statistics to students with diverse backgrounds at research institutions, community colleges, four-year institutions, and AP-statistics students in classes with no more than 35 students. I will be testing this in the upcoming academic year.

References

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