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Pilot Study of Using ChatGPT in a First-year Programming Assignment

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Abstract

ChatGPT can be a useful aid in computer programming education, due to its cutting-edge functionality of generating program code, debugging, etc. This research focuses on both ethical considerations and the impact on student performance of using ChatGPT. To ensure students used ChatGPT ethically, guidance was provided together with a declaration form that stated that ChatGPT was used ethically by students in each phase of the assignment. Next, we collected and analysed a survey and the declarations from students, and compared student effort, time spent and performance outcomes from those who were and were not using ChatGPT. Based on the findings from the survey and the comparison of data about student efforts and learning outcomes in both 2022 and 2023, we concluded that ChatGPT provides an opportunity for first-year students to learn programming through analysis, synthesis, and evaluation. Many students still preferred the conventional way of learning programming in terms of comprehension and application. We argue that because our students in the programming course are from different academic background levels, we should continue to use both ChatGPT and conventional eLearning resources to meet different learning requirements.

Keywords: ChatGPT, first-year programming, divide-and-conquer strategy, Bloom's Taxonomy

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