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Pedagogical Use of Chat GPT to Enrich the Teaching and Learning Activities of a Python Coding Course in a Prosocial Context

Project Number: 6000833

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Grant Type: TDG

Abstract:

Chat GPT stirred up the whole world. Its enormous information transformation capacity may make it a resourceful learning partner for students. However, its remarkable intelligence also tempts students to cheat on their assignments. But, a clear cut-off of Chat GPT in education may not be a good idea. Contrarily, we should carefully prepare students to adapt to learning with Chat GPT, benefiting students' competitiveness and development.

It is noteworthy that Chat GPT can support students' learning or ruin it. Therefore, this study foresees a pedagogical reform induced by Chat GPT to begin. Human teachers should take the lead in using Chat GPT to enhance teaching and learning effectiveness while preventing Chat GPT abuse. As a starting point, this study will revisit the traditional curriculum design and teaching and learning strategies of a Python coding course, i.e., CB2240. Particularly, this study will enrich the teaching and learning activities, i.e., pre-class (flipped) and in-class tutorial exercises, by incorporating Chat GPT as a learning tool. At the same time, instructors of the Python coding course will also make clear to students the consequences of abuse of Chat GPT and education integrity by all means as precautionary measures.

To further encourage the ethical and responsible use of Chat GPT in the Python coding course, this study also proposes that a prosocial learning context should be provided. The Hong Kong pet healthcare industry is selected to provide the Python coding course with a prosocial context to engage students and arouse their caring and ethical attitudes. The Hong Kong pet healthcare industry is worth our attention for three reasons.

- First, the Hong Kong Government has strategically highlighted pet owners' roles and responsibilities to enhance animal welfare.
- Second, Hong Kong pet owner demand for pet healthcare services has pushed the industry to undergo a professionalization and humanization movement.
- Third, City University of Hong Kong also pledges to be Asia's pre-eminent body advancing veterinary clinical science and safeguarding animal welfare.



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Having this prosocial context, students will be taught to create computational solutions that can contribute to the enhancement of animal welfare and the sustainable development of the industry, making the Python coding course more motivating, engaging, and meaningful than the traditional one.

More specifically, a running case regarding the challenges of the Hong Kong pet healthcare industry will be developed. A series of related pre-class (flipped) and in-class tutorial exercises will be designed and created to encompass students' Chat GPT-aided self-learning on drilling practical knowledge and skills, e.g., application, analysis, and evaluation of Python programs. The designated learning outcomes of the Python coding course and the pedagogical use of Chat GPT will be guided by Bloom's Taxonomy and discussed in the proposal.

The outcomes and findings of this study are expected to offer insights into the pedagogy of coding education in different subject areas.