Implementing socratic questioning techniques and the PIRLS framework in a gamified learning activity to enhance cognitive functioning and psychological well-being in older adults
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Purpose The population of older adults is expected to double by 2050, with the elderly projected to make up more than a third of Hong Kong's total population by 2046. Cognitive decline and loneliness are on the rise among older adults, which can have a negative impact on their health. According to Samaritan Befrienders Hong Kong, 44% of 1,080 suicides involved people aged 60 or older. This may be due to feelings of loneliness exacerbated by the recent wave of emigration leaving older family members behind. Added to this are the increasing mental health issues in young people and the older generation in Hong Kong. In light of these problems, we have developed an intergenerational reading program with generative AI to reconnect older adults and young people, aiming to strengthen bonding and understanding between the two generations. Based on this idea, we have created an intergenerational reading program involving older adults to participate in children book questions creation project using Socratic questioning. This is an active learning pedagogy that allows the learner to develop higher order thinking skills such as analysis, synthesis, and evaluation (Gouges, 2012). **Method** Before designing questions in our reading program, older adults have attended workshops to learn about The Progress in International Reading Literacy Study reading assessment framework (PIRLS) with four levels (Information Retrieval, Inferences, Interpretation & Evaluation). The generative AI would assist the question creation process. The questions generated were published and participants entered a competition "Compete with Socrates" to assess the quality of questions. 15 semi-structured interviews were conducted with older adult participants aged 60-70 individually to collect their feedback on the overall experience and the ways this program has affected them. **Results and Discussion** The data collected from the questionnaires would be utilized as the ground of our findings. Almost all participants reported a positive experience following the question generation activity. The impacts of this program on older participants were categorized into cognitive abilities, psychological well-being, and social connection. The majority of participants have expressed a high level of satisfaction with the structure and influence of this question generation activity. The program has been noted to have a positive impact on enhancing the cognitive abilities (e.g. to think more critically, solve problems creatively, and regulate their own learning). Although the program has brought about significant impact in improving the cognitive abilities and psychological well-being of participants, improvement may focus in building the social connection of participants. Afterall, social engagement is vital for combating loneliness and depression in older adults, promoting social support networks and interpersonal relationships.

References
Gouge, C. (2012). Multiple literacies in the technical editing classroom: An approach to teaching copyediting. Multiple Literacies in the Technical Editing Classroom: An Approach to Teaching, 13(2), 55.

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