

Development of Progressme: pre-clinic chatbot, a medical student's personal learning assistant



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Background

Technology-enhanced learning is now common practice in the field of medical education, chatbot technology is one of the examples of its use. This study describes the development of Progressme: pre-clinic chatbot to enhance Medical Students' Professional Competencies & Digital intelligence Quotient (MSPC&DQ).

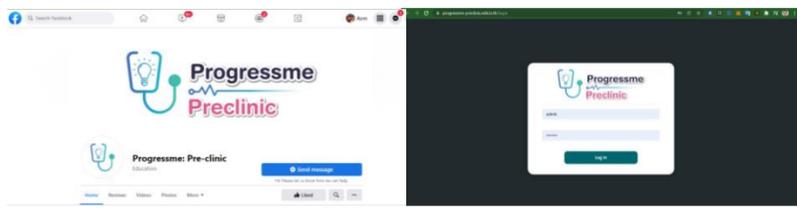


Figure 1. Screen capture showing the Progressme: pre-clinic chatbot on Facebook Page & website



Figure 2. Guideline for using the Progressme: pre-clinic chatbot

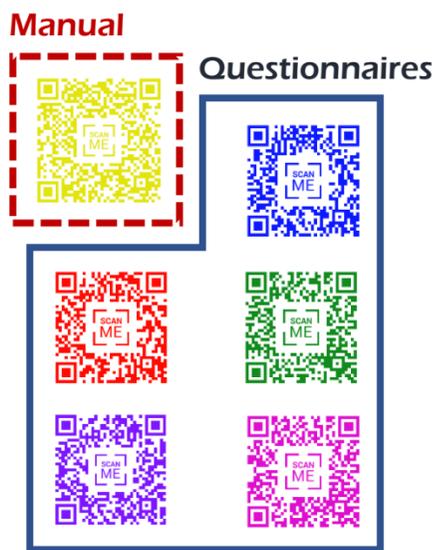


Figure 3. QR codes for user manual and the questionnaires that were used in this study

Summary of Work

There are 4 phases in the development of the chatbot. 1st, to examine the conditions of teaching and learning management with the use of the chatbot to develop the MSPC&DQ. The qualitative data was obtained from conducting interview with 20 experts in the field of educational technology and medical education. Moreover, the quantitative data was obtained using a questionnaire responded by 451 medical students. Exploratory factor analysis was used to develop a model based on related theories. 2nd, a chatbot prototype was developed. 3rd, implementation of the chatbot with the sample group of 50 students. 4th, a presentation of the results of the study was evaluated by 9 experts in the field of educational technology.

Take home message

Progressme: pre-clinic chatbot could be used as a student's personal learning assistant or an instructor's teaching assistant, to personalize teaching and optimize learning outcomes.

Results

The quantitative and qualitative data were used to evaluate the student learning outcomes, including before and after scores of students using the chatbot and the student self-reflection regarding the use of the chatbot to develop the MSPC&DQ, respectively. It was found that after completing the lessons, students' level of MSPC&DQ were higher than before completing the lesson at the statistical significance level of 0.05.

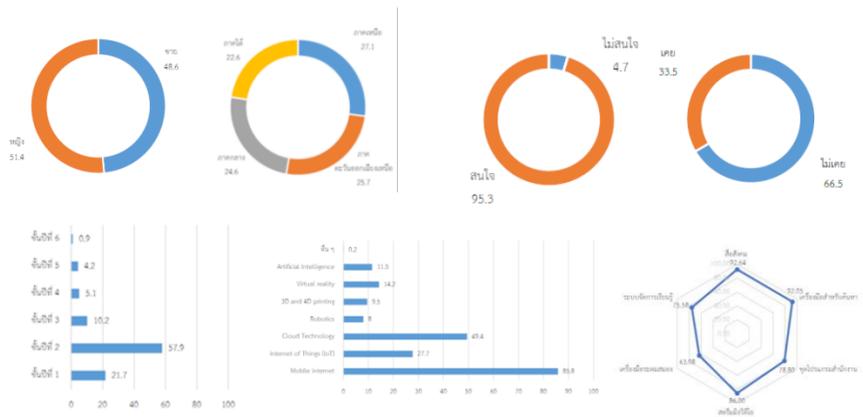


Figure 4. Selected results from the questionnaires (student perspective)

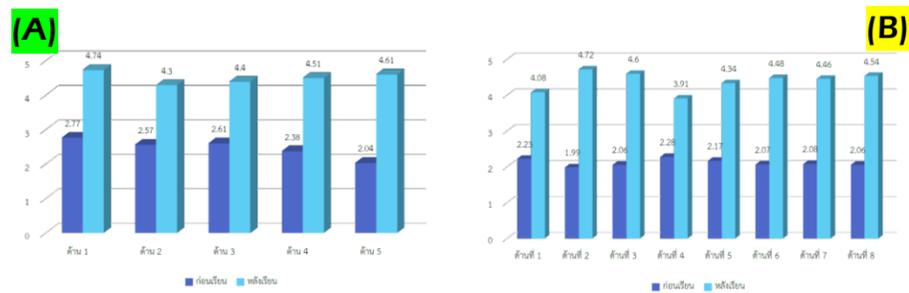


Figure 5. Results from the questionnaires – before & after intervention (A) professional competencies; (B) digital intelligence

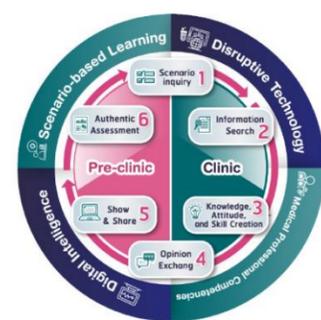


Figure 6. An instructional model for scenario-based learning innovation in a disruptive technology era to enhance MSPC&DQ.

Discussion & Conclusion

The use of the chatbot could promote the MSPC&DQ. It can be concluded that there were 4 key elements for the design of the chatbot in a disruptive technology era to enhance medical students' professional competencies and digital intelligence. The elements were (1) scenario-based learning, (2) disruptive technology, (3) medical students' professional competencies, and (4) digital intelligence. Moreover, there were 6 practical steps of learning: (1) scenario inquiry, (2) information search, (3) knowledge, attitude, and skill creation, (4) opinion exchange, (5) show & share, and (6) authentic assessment.