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# A review of development approaches for Artificial Intelligence chatbots in medical education

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[https://youtu.be/RuczGMIX0\\_s](https://youtu.be/RuczGMIX0_s)

## References

Chang, C. Y., Hwang, G. J., & Gau, M. L. (2022). Promoting students' learning achievement and self-efficacy: A mobile chatbot approach for nursing training. *British Journal of Educational Technology*, 53(1), 171-188. <https://doi.org/10.1111/bjet.13158>

Huang, W., Hew, K. F., & Gonda, D. E. (2019). Designing and evaluating three chatbot-enhanced activities for a flipped graduate course. *International Journal of Mechanical Engineering and Robotics Research*, 8(5), 813-818. <https://doi.org/10.18178/ijmerr.8.5.813-818>

Inkster, B., Sarda, S., & Subramanian, V. (2018). An empathy-driven, conversational artificial intelligence agent (Wysa) for digital mental well-being: Real-world data evaluation mixed-methods study. *JMIR mHealth and uHealth*, 6(11), e12106. <http://doi.org/10.2196/12106>

Lam, C. S. N., Li, Y. S., Chan, L. K., & See, C. (2019, November 11). *Can the A.I.natomy chatbot teach anatomy?* [Poster presentation]. 2nd Korea University International Medical Student Conference, Korea University, Seoul, Korea.

Li, C., Zhang, X., Chrysostomou, D., & Yang, H. (2022). ToD4IR: A humanised task-oriented dialogue system for industrial robots. *IEEE Access*, 10, 91631-91649. <https://doi.org/10.1109/ACCESS.2022.3202554>

Schlögl, S., Doherty, G., & Luz, S. (2015). Wizard of Oz experimentation for language technology applications: Challenges and tools. *Interacting with Computers*, 27(6), 592-615. <https://doi.org/10.1093/iwc/iwu016>

See, C., Lam, C. S. N., Li, Y. S., & Chan, L. K. (2019, May 31). *Methods for training an AI for Higher Education* [Poster presentation]. Centre for Information Technology in Education Research Symposium 2019, Faculty of Education, the University of Hong Kong, Hong Kong.

Suleman, R. M., Mizoguchi, R., & Ikeda, M. (2016). A new perspective of negotiation-based dialog to enhance metacognitive skills in the context of open learner models. *International Journal of Artificial Intelligence in Education*, 26, 1069-1115. <https://doi.org/10.1007/s40593-016-0118-8>

Kron, F. W., Fetters, M. D., Scerbo, M. W., White, C. B., Lypson, M. L., Padilla, M. A., Gliva-McConvey, G. A., Belfore II, L. A., West, T., Wallace, A.M., Guetterman, T. C., Schleicher, L. S., Kennedy, R. A., Mangrulkar, R. S., Cleary, J. F., Marsella, S. C., Becker, D. M. (2017). Using a computer simulation for teaching communication skills: A blinded multisite mixed methods randomized controlled trial. *Patient Education and Counseling*, 100(4), 748-759. <https://doi.org/10.1016/j.pec.2016.10.024>

Ward, T., Falconer, L., Frutos-Perez, M., Williams, B., Johns, J., & Harold, S. (2016). Using virtual online simulations in Second Life® to engage undergraduate psychology students with employability issues. *British Journal of Educational Technology*, 47(5), 918-931. <https://doi.org/10.1111/bjet.12307>

Weizenbaum, J. (1966). ELIZA - A computer program for the study of natural language communication between man and machine. *Communications of the ACM*, 9(1), 36-45.

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