

Accepted Manuscript

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PII: S0360-1315(18)30185-4

DOI: [10.1016/j.compedu.2018.07.010](https://doi.org/10.1016/j.compedu.2018.07.010)

Reference: CAE 3406

To appear in: *Computers & Education*

Received Date: 21 August 2017

Revised Date: 3 July 2018

Accepted Date: 8 July 2018

Please cite this article as: Chou C.-Y., Lai K.R., Chao P.-Y., Tseng S.-F. & Liao T.-Y., A negotiation-based adaptive learning system for regulating help-seeking behaviors, *Computers & Education* (2018), doi: 10.1016/j.compedu.2018.07.010.

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A Negotiation-based Adaptive Learning System for Regulating Help-seeking Behaviors

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Abstract

Help-seeking is an important aspect of self-regulated learning (SRL), but students may have ineffective help-seeking behaviors. For example, some students are unaware of their need to seek help, and some often seek executive help merely to obtain the correct answer. This study proposes a negotiation-based adaptive learning system with a help-seeking negotiation mechanism to form the co-regulation of help-seeking between a student and the system. The system provides external feedback on SRL as scaffolding for help-seeking by prompting students to seek help or even actively offering help when they need it and reminding students not to seek too much help. An experiment was conducted with student participants divided into control and experimental groups. Students in the control group were allowed to seek help at will, whereas the help-seeking of students in the experimental group was regulated by the system. The results indicated that the students in the experimental group had better help-seeking behaviors (a higher ratio of steps solved by themselves and a lower ratio of steps solved with executive help) than the students in the control group.

Keywords: evaluation of CAL systems, intelligent tutoring systems, interactive learning environments

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