The effects of constructing robot-based storytelling system on college students' computational thinking skill and technology comprehension

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***Abstract*—Recent college students have been observed to be motivated and engaged in acquiring information and communication technology (ICT) knowledge and skills with robots and digital media. The purpose of this study is to develop students' technology comprehension through a learning activity by constructing robot-based storytelling systems. A sample of 15 college students participated in the program. Data collected include the pre- and post- computational thinking tests (CTt) and computational thinking skill (CTs) tests for evaluating their learning effects of technology comprehension (TC) in terms of computational thinking knowledge and skills and their perceptions toward the robot-based storytelling development environment and learning activities. The results show that the learning activities were an effective approach for enhancing the students' TC as shown in the post-test. The differences between the students' CT and perceptions were also confirmed. The results revealed that the learning activities with the robot-based storytelling development environment could improve the students' TC knowledge and skills, and learning perceptions.**

***Keyword*—Technology comprehension; Computational thinking; Robot-based storytelling; Information and communication technology**

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