

**ABSTRACT**

Dissertation: Assessing Computational Thinking of College Students in the Context of a  
Computer Science Curriculum

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Computational Thinking (CT) is a set of cognitive skills for conceptualizing, modeling, and solving problems that draw on the concepts and techniques fundamental to computer science, but not necessarily enacted in formal computer programming or systems. The salience of CT as cognitive ability and pedagogical framework has been well established in the literature beyond just computer science education.

The purpose of this study is to measure the CT of college students and what factors might influence CT development before and during college. This study addresses whether CT can predict a student's readiness for a computer science (CS) program and whether CT is developed further in the program.

This study uses a cross-sectional, quantitative design with college students (n=71) to assess their performance on CT-related challenges questions from an instrument purported to measure CT. The results show that computer science (CS) students have a higher CT scores than Non-CS students and that CS student's scores increase over time in CS program.

Findings suggest CS majors choose that degree because of skills and interests associated with CT, and a CT course may help CS student's academic programs.