2023年度教育学域・教育学学位プログラム共催FD

From "learning" outcome/trajectory to "making" outcome/trajectory:

A computational thinking perspective on school **mathematics** learning

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日時:2/26(月)14:00~15:30

場所:人間系学系棟 B523/524

言語:英語(日本語による補足説明あり)

オンライン参加申込用サイト https://forms.gle/1VxK49gie4qfA7CW8

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Abstract:

In this talk, I discuss the transformative potential of integrating computational thinking (CT) into mathematics education, advocating for a shift from hand calculation to computational problem-solving in school mathematics classrooms, which aligns with Jeannette Wing's notion of CT as universally applicable across problem-solving activities. Specifically, I offer insights into the new possibilities for mathematics learning by transitioning from "one-handed" (paper-and-pencil) to "two-handed" (computer-assisted) mathematics. I focus on the incorporation of CT in various digital mathematics activities, not limited to conventional programming. In doing so, I explore two central questions: the contribution of a CT perspective to school mathematics learning and the role of programming-rich activities in mathematical thinking and learning. I begin by discussing the theoretical and empirical foundations of the research, providing examples from the programming environment, Scratch, in contexts ranging from primary to secondary school mathematics. I conclude by suggesting implications for a computationally enhanced mathematics education and proposing a shift towards an Al-literate, data-science-driven approach as future research directions.

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