Project (FUTURE): Integrating CS in K-5 Education



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Background



Coding and technology literacy are increasingly used skills in all professional fields, which necessitates further

Methodology



Contribution

This research has led to the **training of** over 50 teachers in computer science and designing of 20 unique lessons that will integrate computer science into existing class units.



I have contributed to the discussion, design, and research for most of the projects.

exposure to computer science in every stage of education.

Despite the U.S. Education Department placing great value in Computer Science, elementary schools face great

difficulty in fitting even more material in their full schedules with teachers who have no prior experience in the subject.

In order to accomplish this task, creative solutions are required to adapt existing curriculum into **multifaceted lessons** that teach both computer science and the focus of the original curriculum. Additionally, teacher's who went through an education system that didn't include computer science must be trained and supported through pioneering this foreign subject and new approach to teaching.

Project {FUTURE} is collaborative research and outreach program between Marquette University and Sacred Heart University to promote these Computer Science learning opportunities in both Wisconsin and Connecticut K-5 education.

1. Discussion

Working personally with the teacher "PLC groups" to gauge key details of their selected lesson plan and translating it into something that incorporates computer science thinking.

2. Research

Using concepts from the discussion for researching related work and the considerations in designing a tool for the lesson.

3. Prototyping

Building and presenting a rough demonstration of a program or tool for the PLC groups.

4. Polishing



Future Work

The lesson plans created will be deployed into elementary schools in the upcoming school year.

A longitudinal study will be conducted to

Objective

Integrate computer science concepts and processes into elementary education through assisting a cohort of K-5 teachers in designing, building, and testing novel CS-integrated units and tools.

Taking in feedback from the teachers to guide further development of the tool as they finalize their lesson.

5. Professionalizing

Making an effort to promote accessibility, scalability, and efficiency to ensure that the final lesson produced is professional and easily adapted by any school. track the effectiveness of these lessons by analyzing the computer science enrollment and achievement of its students in future computer science prospects, including AP College Board tests.

Further workshops replicating this project will likely continue as K-5 computer science education continues to develop.

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