

Measuring the Effects of Computing in Elementary Education

Introduction

My name is Peter Rich. I am a professor of Instructional Psychology and Technology at Brigham Young University. This year, your child's school will be teaching computer programming (i.e., "computing"). I am working with your school district to study the effects learning computing has on elementary students. Your child has been selected to participate in this study because s/he will be in 4th, 5th, or 6th grade.

Procedures

Throughout the school year, your child will have the opportunity to participate in several assessments to measure: (a) problem-solving skills, (b) computational thinking, and (c) attitude toward computing. If you agree to let your child participate in this research study, the following will occur:

- Throughout the school year, your child will be asked to complete a problem-solving assessment, a computational thinking test, and a survey on his/her attitudes toward computing.
- This will take place in his/her classroom as part of the scheduled coding curriculum.
- Inasmuch as our understanding of the effect of learning computing on students is the goal of this study, your child's performance on these assessments will NOT be used in consideration of course grades or participation.

Confidentiality

Your student's personal information will remain confidential. Data will first be collected by the school district. The school district will then remove personally-identifying information and assign each response a research ID. After this process, the data will be shared with researchers for further analysis. Only authorized school district personnel will have access to the original student data. These data will be kept on password-protected school district computers. Original data will be stored for three years following the conclusion of the study and then destroyed. Anonymized data will be shared openly in BYU's scholar's archive so that it might be available for further analysis by the research community.

Risks and Benefits

The risks for participating in this study are minimal. Students may experience anxiety at having to complete assessments. Teachers will remind students that these assessments will not count against their grade, to do their best, and that their answers will help us better understand how learning to code affects their thinking. The assessments and surveys do not ask sensitive questions. While there are no direct benefits to your child for participating in this research, the results will have a greater benefit to society. Results from this study may help educators and policy-makers to better understand some of the effects of learning computing at an early age.

Compensation

There will be no compensation for participation in this research.

Questions About the Research

Please direct questions about the study to Peter Rich, PhD at 801.422.1171 or peter-rich@byu.edu. Questions about your child's rights as a study participant or to submit comments or complaints about the study should be directed to the IRB Administrator, Brigham Young University, A-285 ASB, Provo, UT 84602. Call 801.422.1461 or send emails to irb@byu.edu.

Participation

Participation in this research study is voluntary. You are free to decline to have your child participate in this research study. You may withdraw your child's participation at any point without affecting your child's grade/standing in school.

Child's name: _____

Parent/Guardian's name: _____

Parent/Guardian signature: _____

Date: _____

If you prefer that your child NOT participate in this study, mark an X in this box