Integrating advanced computing in STEM education

Creator: Dev Shrestha

Affiliation: University of Idaho

Funder: National Science Foundation (NSF)

Template: NSF-CISE: Computer and Information Science and Engineering

Grant number: NSF 19-546

Last modified: 06-26-2020

Copyright information:
The above plan creator(s) have agreed that others may use as much of the text of this plan as they would like in their own plans, and customize it as necessary. You do not need to credit the creator(s) as the source of the language used, but using any of the plan's text does not imply that the creator(s) endorse, or have any relationship to, your project or proposal.
Integrating advanced computing in STEM education

Types of data

A total of three surveys will be given to the students at separate times. The first survey will collect the basic information about students such as their first and the last name, gender, academic standing, whether or not specific classes were taken, proficiency in computer programming, preference of the programming language, knowledge of computer science skill applicable to domain specific problem, targeted application of CS skill and delivery platform and students’ willingness to take credits to learn those skills. The second survey will be similar to the first survey before a team of selected students enters into hands-on exploration provided computer solution to their chosen problem. The third survey is after the student goes through hands on exploration of how students felt about their strengths and weaknesses in understanding the concept and ease of using the language. Any personal identifiable information beyond student name will not be collected in this survey.

Data and metadata standards

The metadata such as time of survey, place of survey, institution surveying, name of the manager and overseeing the survey will be tagged with data.

Policies for access, sharing, and privacy

The student name will be used only to verify potentially duplicate data, and once that is verified and entered into the database, the participating student name will be discarded. Any other information that could lead to the identification of a specific student will not be shared with the public. The University of Idaho’s Northwest Knowledge Network’s (NKN) (www.northwestknowledge.net) service will be used for storing making anonymized data publicly available for download.

Policies for re-use, re-distribution, derivatives

The data will be shared among participating institutions for the purpose of the objectives of this proposal. The aggregated database and statistical analysis will be made freely available to the public using the University of Idaho’s Northwest Knowledge Network’s (NKN) (www.northwestknowledge.net) service. Also the relevant data will be made available as an appendix to the journal publication.

Plans for archiving and preservation

PI from each institution will have a copy of original data collected in this project. The tabulated data without any personal information will be archived and made available to public through
NKN service.

Roles and responsibilities

The PI of this project Dev Shreshta will oversee the data management in collaboration with PIs from collaborating institutions.