A Process for Updating Computer Science Curriculum for Non-Majors

David Kaczynski and Melis Öner

Central Michigan University
Department of Computer Science
Mount Pleasant, MI 48859, USA
(kaczy1da, oner1m)@cmich.edu

ABSTRACT

Computers permeate society deeper and more thoroughly as computer science and adjacent fields progress. Students who graduate from institutions of higher education are expected to adapt to and utilize computer technologies, regardless of major. Many universities already offer computer science courses for non-majors, but little research exists on methods to continuously update existing curriculum. We propose a method for updating computer science curriculum for non-majors with IT key qualifications that teach students how to adapt to an evolving technological ecosystem. This framework addresses how to update existing course objectives and materials using feedback from metrics, such as the students' attitudes, performance on examinations, and the time to prepare course materials. Our research finds that universities with existing computer science curriculum for non-majors may be able to utilize the methods outlined in this paper to teach students skills that foster confidence in their relationships with computers in the present and future.

Keywords

computer science education, non-majors, IT key qualifications, curriculum, computers and society

1 INTRODUCTION

2 BACKGROUND AND LITERATURE REVIEW

2.1 Importance of Computer Literacy

2.2 IT Key Qualifications

2.3 Course Design Process