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Use of Commercial Online Training to Augment Programming Language Education

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ABSTRACT

This talk describes the motivation and utilization of commercial online training in programming languages to augment student learning. Student feedback indicated that the online training courses assisted them in achieving a basic understanding of the languages.

KEYWORDS

Online Learning, Programming Language Education, Code School

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1 INTRODUCTION

Beginning in the academic year of 2016–2017, sophomore students at the United States Military Academy (USMA) majoring in computer science or information technology were required to take a new survey course of computer science and information technology topics. The survey course, designated CY355 Cyber Foundations – Computing, covers topics such as databases, web applications, networking, and cyber security. The students learn MySQL [7] and MongoDB [6] for the databases block, and they learn HTML, CSS, JavaScript, and Meteor [4] for the web applications block. Using commercially available online training could help facilitate student learning of these languages.

2 METHODOLOGY

Building and maintaining an online training course interanly was too burdensome. Thus, a commercial solution was selected. The next step was to choose an appropriate commercial online training curriculum. The curriculum selected was Code School [8] based on breadth of courses offered and course interactivity.

The required online training courses were assigned as required homework at the beginning of the semester. The students were assessed based on their successful completion of each course within the allotted time.

3 RESULTS

Sixty-seven sophomores enrolled in CY355 in the fall semester of 2016. Anecdotal evidence indicated that the SQL training was well received, but the JavaScript training was too complex much for students at their level in the computing discipline.

After the conclusion of the course, the authors surveyed the former students regarding the use of Code School. The majority (58%) of the respondents assessed Code School as being very beneficial to their learning. Also, a majority (65%) of the respondents recommended the continued use of Code School.

The students were also queried about whether to keep or get rid of specific Code School courses in CY355. The most popular courses to retain were the database courses, followed by web design and implementation, and then the JavaScript course. Students indicated that they felt that Code School was a good way to introduce the languages. Students also indicated that the time required to complete each course was not proportionate to the points assigned.

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