

Chapter 3

Creating Open Educational Resources as Renewable Assessment Activities for Computer Science Education: Enhancing Intrinsic Motivation Through Co-Creation

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ABSTRACT

In recent years, higher education has witnessed a shift towards open education and the proliferation of educational resources. Open educational resources (OERs) have gained prominence for their potential to revolutionize education by allowing students to create freely available, adaptable, and customizable content. Simultaneously, traditional assessment methods have come under scrutiny for their limited ability to measure critical thinking and practical skills. Computer science education, with its emphasis on innovation, is well-suited to embrace these changes. This chapter introduces creating OER as renewable assessment activities as an innovative approach, contributing to the discourse on open education, assessment, and pedagogy in computer science, emphasizing student empowerment, mastery, and intrinsic motivation.

INTRODUCTION

This section is intended to provide an overview of the chapter's general perspective, culminating in a clear articulation of the stated aim and objectives.

Navigating Computer Science Education in the 21st Century

The changing landscape of modern education calls for innovation to stay relevant and recent in the 21st century. In Computer science education, which is known for its dynamic nature and continuously

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expanding body of knowledge, using traditional pedagogies often strain educators to keep up with the ceaseless advances of the digital era. Educators and institutions are increasingly recognizing the need to empower students as active participants in their educational journeys, fostering knowledge and developing essential critical skills.

Target Audience

The study is particularly pertinent for educators who are interested in aligning their teaching practices with the principles of accessibility, affordability, and inclusivity. Individuals engaged in the design and implementation of assessment strategies, especially those dissatisfied with traditional forms such as standardized testing and final exams, may find the research beneficial. Moreover, educators in the field of computer science, given its emphasis on innovation, adaptation, and the cultivation of diverse skills beyond technical proficiency, are a primary target audience. Furthermore, this study may appeal to researchers and scholars in the broader domains of open education, assessment, and pedagogy. Professionals involved in shaping educational policies and practices, as well as those contributing to the discourse on student-centered learning, may also find insights in this research.

Aims and Objectives

This chapter aims to explore how engaging students in the collaborative creation of OER's, with an emphasis on renewal and ongoing improvement, can empower them as self-directed learners, enhance their mastery of computer science concepts, and foster a deeper sense of intrinsic motivation. From an extensive literature review on aspects including Self-directed learning, Intrinsic motivation, Renewable assessments and OER's, guidelines to Incorporating co-creation and renewable assessment activities will be proposed.

BACKGROUND

In recent years, there has been a significant shift in higher education toward open education and the widespread availability of educational resources (Maina et al., 2019). Open education initiatives, driven by principles of accessibility, affordability, and inclusivity, have prompted educators and institutions to explore new pedagogical strategies that align with these ideals (Kolesnykova, 2019). Among these strategies, the concept of open educational resources (OERs) has gained prominence. Creating OER's as renewable assessment activities have garnered attention for their potential to revolutionize the way educational content is created, shared, and accessed (Baran, & AlZoubi, 2020). Unlike traditional assessment activities, the OER's that are created by the students can be made freely available to others to use, are adaptable to diverse learning contexts, and amenable to continuous improvement and customization. They epitomize the principles of openness and collaboration, inviting educators and students to co-create and share knowledge (Katz & Van Allen, 2020). In tandem with the open education movement, evolving assessment practices have also begun to reshape the educational landscape. Traditional forms of assessment, such as standardised testing and final exams, have faced scrutiny for their limited capacity to measure students' critical thinking, problem-solving abilities, and practical application of knowledge (Sokhanvar et al., 2021). As a result, educators are seeking innovative assessment strategies that align

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