

Supporting Resilient Learning through Lecture Capture in Technical Courses

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Abstract

Lecture capture technologies are commonly used in higher education; however they are often only used as an accommodation for students with documented disabilities. This paper reframes lecture capture as a method to support resilient learning, particularly in technical courses such as computer science and data science. In these courses, instruction is screen based and frequently involves step-by-step demonstrations of complex tasks. Missing even a single step can disrupt student understanding. This work examines student perceptions of lecture recordings and the impact that they have on student learning by examining survey data collected across multiple course sections. Students reported significant benefits, which included the ability to revisit complex material, recover from missed or partially understood content, and manage periods of cognitive overload. In addition to student learning benefits, recorded lectures serve as reusable instructional resources that support online teaching, flipped classrooms, and alternative grading approaches. This work suggests that lecture capture should not only be used as an accessibility tool, but also as a core component of course design that promotes continuity, flexibility, and resilient learning.

Keywords

Lecture capture, resilient learning, technical education, computer science education, universal design for learning, accessibility in education.