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Video Lecture Design in Online Learning: A Systematic Review

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Extended Abstract

Video Lecture Design in Online Learning: A Systematic Review

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Abstract: The flexibility and cost-effectiveness of online learning provide the public with the opportunities to learn anywhere and at any time. Its popularity has surged since the emergence of MOOCs in 2011 and after the global outbreak of the Covid-19 pandemic in 2019. As the central element in current online learning platforms, video lecture plays important role in affecting learners' engagement, performance, and satisfaction. To shed light on the key components of video lecture design and their effects on learner-level outcomes in online learning, this research identifies the literature on video lecture design and conducts a systematic review with bibliometric analysis. Specifically, the bibliometric analysis illustrates the literature on video lecture design in terms of publication year, journal source, citations, and keyword co-occurrence. The thematic analysis identifies three themes that are widely investigated in video lecture design literature such as instructor presence, instructor characteristics, and content presentation. This research contributes to online learning literature by illustrating the current landscape of research on video lecture design in online learning for the first time.

Keywords: online learning, video lecture design, learner engagement, learner performance, learner satisfaction

1. INTRODUCTION

Online learning has experienced explosive growth in the past two decades because of its flexibility and cost-effectiveness. After the global outbreak of the Covid-19 pandemic in 2019, online learning even become the dominant course delivery mode all over the world ^[1]. Video lecture design refers to the components and their features included in video lectures. It is one of the key antecedents of learners' engagement, performance, and satisfaction ^[2]. Good design not only makes video lectures more attractive but stimulates learners to be more engaged, achieve better performance, and be more satisfied. Extant studies have investigated various video lecture design features in online learning. However, research on the impacts of video lecture design on learners is still at the infant stage and fragile. To fill in the gap, this research shed light on the effects of video lecture design on learners in online learning by conducting a systematic review with bibliometric analysis. Specifically, it identifies the literature on video lecture design and gains insight into the key components in it and their impacts. The research questions of this paper are (1) what is the status of the papers in the field of video lecture design in online learning? (2) what are the main points that researchers studied in the domain of video lecture design in online learning? (3) what can we do in the future study about video lecture design in online learning?

2. METHODOLOGY

To avoid the well-recognized limitations of literature selection in narrative reviews and expert reviews, this research adopted the systematic literature review approach. The systematic review is capable of obtaining a comprehensive understanding of the research using regulated, clear, and repeatable procedures at each step in the process ^[3,4]. Following the guidelines for the systematic review approach, we conducted a review of video lecture design in online learning to identify the relevant themes for this field. The guidelines suggest five steps

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including formulating the questions, locating the studies, selecting and evaluating the studies, analyzing and synthesis, as well as reporting the results.

3. RESULT

3.1 Bibliometric Analysis

From the publication year, we can know that with the increased popularity of online learning, the number of publications shows steady growth since 2015. *Computers & Education* leads all journals by publishing 15 papers on this topic. It's also the leader in terms of both the total number and the average number of citations. These journals are mainly focused on education and human-computer interaction. The most cited papers gain insight into the effects of a variety of factors on learners. The factors include instructor presence; instructor's face, gaze, and gestures; as well as the format and usage pattern of video lectures. Furthermore, some of the papers investigated the heterogeneity of the effects across learners with different characteristics such as cognitive style, technological efficacy, age, etc. After keywords co-occurrence, we identify three clusters in the network and label them with three ellipses. The first cluster consists of keywords about video lectures. The second cluster consists of keywords about instructors. The third cluster consists of keywords about learners.

3.2 THEMATIC ANALYSIS

We conduct the thematic analysis to gain a comprehensive understanding of the literature on video lecture design in online learning. Particularly, we identify three themes include instructor presence, instructor characteristics, and content presentation in the literature. For each theme, we discuss the major findings of the literature. Instructor presence refers to the visibility of instructors in video lectures. Instructor characteristics include instructors' behavioral characteristics such as gaze and gesture, as well as their voice and emotion in video lectures. All of these characteristics have effects on learners' learning performance. Content presentation refers to the ways that the teaching contents are presented in video lectures. The most common content presentation ways are single-lecturer talking and two lecturer conversations.

4. DISCUSSIONS AND CONCLUSION

This research not only has significant theoretical implications for research of online learning but provides impactful practical implications for online learning practice. It contributes to online learning literature by illustrating the current landscape of research on video lecture design in online learning. It is among the first in this aspect. Meanwhile, it offers practitioners the synthesized knowledge of the intriguing findings in video lecture design research. Either instructors of online courses or designers and operators of online learning platforms can obtain useful enlightenment to make online learning more engaging, effective, and satisfying for learners.

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