

CoVAAPD for Enhancing Teacher Professional Development in Physical Education

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KEY IMPLICATIONS

- A web-based Collaborative Video Annotation and Analytics Environment for blended teacher Professional Development (CoVAAPD) was designed and it has shown efficacy in encouraging collaborative practitioner reflection.
- Four enablers were identified for successful CoVAAPD diffusion: alignment with the PD needs of stakeholders, logistical and cultural support for video recording, protected and safe space for PD, and key personnel buy-in and modelling.

BACKGROUND

This project is a collaboration between the National Institute of Education (NIE), Physical Education and Sports Teacher Academy (PESTA), and Educational Technology Division, Ministry of Education (MOE), to develop, implement and evaluate the web-based CoVAAPD in Physical Education (PE). CoVAAPD was based on a prior evidence-based ICT innovation, CoVAA, that used video annotation tools to improve learning and teaching in secondary schools.

Typically, PE teachers engage in face-to-face discussions about lesson design and enactment with MOE officers from PESTA.

Even more infrequent is the involvement of other PE teachers due to the inability to meet because of their hectic schedules. CoVAAPD expands opportunities to enrich the interaction and discourse, enabling collaborative blended professional learning for the PE teacher community.

FOCUS OF STUDY

The primary focus is the development of CoVAAPD for use by PESTA mentors/coaches in their PD efforts with teachers on the effective design and enactment of PE lessons. As a techno-pedagogical system, CoVAAPD's design is underpinned on a nested framework of dialogic teaching, computer-supported collaborative learning, assessment for learning and teacher-regulation in learning. Technologically, it has been developed with key affordances, namely: "time point-based" video annotations, interactive comments features with customisable metacognitive scaffolds, and a teacher dashboard with powerful learning analytics modules to track participants' activity as well as to allow for formative feedback.

A secondary purpose is to document and evaluate the design and use of CoVAAPD according to the following research questions (RQs):

RQ1: To what extent does a blended PD approach supported by CoVAAPD enhance teachers' collaborative practitioner reflection around the effective design and enactment of PE lessons?

RQ2: What are teachers' and mentors/coaches' perceptions, experiences and accounts of the CoVAAPD learning features and accompanying video-based teacher PD resources, in terms of the benefits and shortcomings, as well as the enablers and impediments to successful implementation and diffusion of CoVAAPD for teacher PD?

KEY FINDINGS

CoVAAPD's PD design has been enacted with key pedagogical design considerations such as clear PD objectives, scheduled time and space for extending teachers' reflective participation, and guidance for norms/rules of online discussions. Focusing on Trial 3 findings, addressing RQ1, teacher reflection perspectives were all positive, with survey ratings above 5 out of 7 points. Addressing RQ2, qualitatively, benefits and shortcomings themes included encouraging reflective and thoughtful discussions from all at own pace although monitoring was needed, as well as generating structured and in-depth discussion on teaching practices despite technical limitations for conversation build-ons. Four enablers were identified: alignment with PD needs of stakeholders, logistical and cultural support for video recording, protected and safe space for PD, and key personnel buy-in and modelling.

In addition, four teacher case study profiles and respective resulting themes emphasising that profile's benefits and enablers of using CoVAAPD were identified. CoVAAPD was also trialled for pre-service education, and the results are generally favourable, with opportunities for further hybrid implementation.

SIGNIFICANCE OF FINDINGS

CoVAAPD's design has shown efficacy in encouraging collaborative practitioner reflection. Anecdotal evidence of its utility to actual practice such as ideas applied to actual lessons, lesson plans and write-ups were recorded.

Although the Circuit Breaker in Singapore was implemented amid Trial 3, CoVAAPD was able to pivot easily to an online-only format, without compromising its core design principles, demonstrating the flexibility and ruggedness of its design.

The successful practices evidenced here will be useful for Academy of Singapore Teachers (AST) and MOE Divisions to adopt and adapt. CoVAAPD has also shown efficacy within NIE programmes and can be used/adapted for any video-based lesson. The empirical results as well as the design-based implementation are in the process of contributing to literature, with two accepted conference presentations and potential publications.

PARTICIPANTS

The total number of unique participants was 68 attendees from six schools (four Primary and two Secondary) and one NIE course.

RESEARCH DESIGN

A mixed methods design-based implementation research approach was adopted to address and achieve the development project goals and research questions. A convergent mixed methods design was used to address the research questions.

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