Teachers Collaboratively Creating Micro-Credentials for Professional Development

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Abstract: Micro-credentials are an effective means of providing teacher choice and evidence of achievement in professional development. Engaging teachers in a co-design process to create micro-credentials for professional development activities provides quality requirements and options that are valuable for improving teacher's knowledge and skills, and impacting classroom practice, providing an opportunity to bridge the gap between research and practice. Through a research practice partnership between a suburban school district and a local university and using design-based implementation research, a co-design process for developing multiple micro-credentials was successfully implemented. Teachers with little to no previous experience with micro-credentials are capable of designing rigorous and relevant required tasks for professional development that targets improvements to classroom practices for improvements to student achievement.

Introduction

Micro-credentials, also called digital badges, are a mini form of a full, traditional credential and are valued by school administrators for professional development because of their ability to provide evidence of specific knowledge and skills gained during professional development (Keane, Otter, Oxley, & Lipscomb, 2016). Teachers appreciate relevant professional development choices provided by well-constructed micro-credentials (Gamrat & Zimmerman, 2015) and value professional development options that "respond to personal and professional schedules" (Gamrat, Zimmerman, Dudek, & Peck, 2014, p. 1146). Metadata from digital micro-credentials presents valuable research opportunities on teacher learning and development (Hickey, Ottow, Itow, Schenke, & Chow, 2014).

However, a major challenge in the development of a micro-credential program for professional development rests in aligning the micro-credential system to the organization culture and faculty interests (Goodrum, Abaci, & Morrone, 2016). Research shows that for professional development to be effective, meaningful, and lasting, it should contain relevant and current content, be ongoing, be collaborative, provide opportunity for practice, be connected to local context, and enact the pedagogy promoted by the professional development (Kennedy, 2016; Desimone, 2009; Penuel, Fishman, Yamaguchi, & Gallagher, 2007). A co-design approach to creating transformative teacher professional development (Kyza & Nicolaidou, 2016; Palincsar & Heerenkohl, 2002) shows promise for enhancing the benefits of micro-credentials and overcoming the challenges.

A district in the western United States partnered with researchers from a nearby private university to facilitate teacher co-design of micro-credentials for professional development. The university and school district have participated together in a public-school partnership for over thirty years and have recently formalized a research-practice partnership for this project (Penuel & Gallagher, 2017). This young research-practice partnership includes the school district professional development director, teachers, and coaches with a university education professor and graduate students. Together they identified a district need that aligned with researcher interests and committed to a long-term partnership to continuously improve knowledge and practice. The district student population of approximately 16,000 is 66% white, 24% Hispanic/Latino, 3% Pacific Islander, 3% multiple races, 2% Asian,1% African American, and 1% American Indian, 46% low socio-economic status, and 10% limited English proficient. Almost one third of the 676 teachers in the district are in their first three years of teaching.

Background

The district professional development coordinator identified high impact pedagogical strategies shown to improve student learning around which to build professional development micro-credentials. The first micro-credential, titled Teacher Clarity, was created by the district professional development coordinator, in consultation with the district content specialists team, on the pedagogical strategy of consistently communicating learning targets and success criteria with students (Moss & Brookhart, 2012).

The micro-credential structure and requirements were based on research by Joyce and Showers (2002) and Knight (2014), indicating that collaboration and coaching are needed to improve teacher implementation of professional development strategies in the classroom. The requirements include reading articles and watching videos explaining the theory and research basis behind the use of the strategy, watching demonstration videos and attending a training about the topic, practicing several times using the strategy in the classroom, writing a lesson plan emphasizing the use of the strategy, videotaping and analyzing the videos of class sessions where the strategy was presented to students, collaborating with other teachers to discuss successes and struggles with implementing the strategy, and submitting evidences of improved classroom practice and its effect on student achievement.

A pilot group of 16 teachers worked through the micro-credential requirements during the last four months of the school year and then completed a survey about the experience. The professional development coordinator and content coaches revised the Teacher Clarity micro-credential based on the survey results and comments from participants in the pilot, and created a template for use in creating future micro-credentials.

Method

To examine the impact of co-design on teacher professional development using micro-credentials we adopted a design-based implementation research (Penuel, Fishman, Cheng, & Sabelli, 2011) methodology, where design, implementation, and research take place in cycles and inform one another. Researchers from the university worked with the district professional development coordinator, teachers, and content specialists to co-design more micro-credentials.

The summer after the Teacher Clarity micro-credential was introduced, small groups of teachers and content specialist participated in one of several three-hour introductory workshops which introduced micro-credentials and the co-design process, defined the product to be created, and built team cohesiveness. A survey was completed by participants at the beginning of the workshop which included questions about experience with micro-credentials and design-based implementation research, as well as asking about the importance of choice in professional development. Following the workshop, co-design teams met at their convenience over the summer, divided the workload, and worked together to design a new micro-credential following the template. Support was available to teams by request, and some teams invited a researcher to participate in team meetings, while others submitted digital documents to other teams, researchers, and the district professional development coordinator for review. Completed micro-credential documents were submitted for review and subsequent revisions were made based on feedback received.

By the end of the summer, five micro-credentials were accepted as complete by the district professional development coordinator. Two micro-credentials, Questioning and Classroom Discussion, and Proactive Classroom Management, were chosen to pilot as an option for district educators for professional development. For the pilot, courses taught by members of the co-design team were offered to assist teachers in completing the micro-credential requirements. These courses were held during scheduled professional development days and involved 30-70 teachers in each course. Two specific-use micro-credentials, New Teacher and Special Education, were approved for limited use and the Elementary Science, Technology, Engineering, and Mathematics (STEM) micro-credential was deemed complete, but not selected for the pilot.

Results

The introductory workshops involved 32 teachers and district content specialists, creating 10 co-design teams based on the results of an interest survey completed by the workshop participants. This paper presents results from a survey on teachers' perceptions about professional development, micro-credentials, and the co-design process, as well as data gathered during the co-design process for the Questioning and Classroom Discussion micro-credential.

Survey results suggest that all participants believed choice in professional development was important or extremely important, with an average score of 9.0 on a scale of 1 (not at all) to 10 (extremely important). Most were comfortable working with peers on assessment design (7.8 of 10, where 10 means extremely comfortable), while experience using micro-credentials in teaching (2.4 of 10, where 1 is none and 10 is I'm an expert!), creating micro-credentials (2.1 of 10), and earning micro-credentials (2.5 of 10) were all very low.

During the second introductory summer workshop, four participants had expressed interest in designing the Questioning and Classroom Discussion micro-credential and became a co-design team. The team members created a collaborative online folder and began work filling out the template. The team decided on meeting dates and invited the researcher to collaborate with them. At the fourth introductory workshop, two more participants chose to help design the Questioning and Classroom Discussion micro-credential. They were introduced to the original team by the researcher, at which time researchers were informed that two of the

original team members were no longer able to participate in the summer co-design work. Team members 1 and 2 were part of the original team while members 3 and 4 joined the team after a later workshop, but before the first team meeting. Member 1 is a district content specialist, member 2 is a middle school teacher, member 3 is an elementary teacher, and member 4 is a high school teacher.

At the first team meeting after the workshop, the team collaborated on necessary steps to complete the micro-credential design, divided the tasks, and continued populating the template. The researcher provided guidance and clarified expectations. During the remainder of the summer, the team met online one more time, and collaborated by email and in the collaborative online folder. In that time, 29 revisions were made to the template on 16 separate days and 59 edits or additions were made to supporting documents. Team member contributions to the design process are shown in Figure 1.

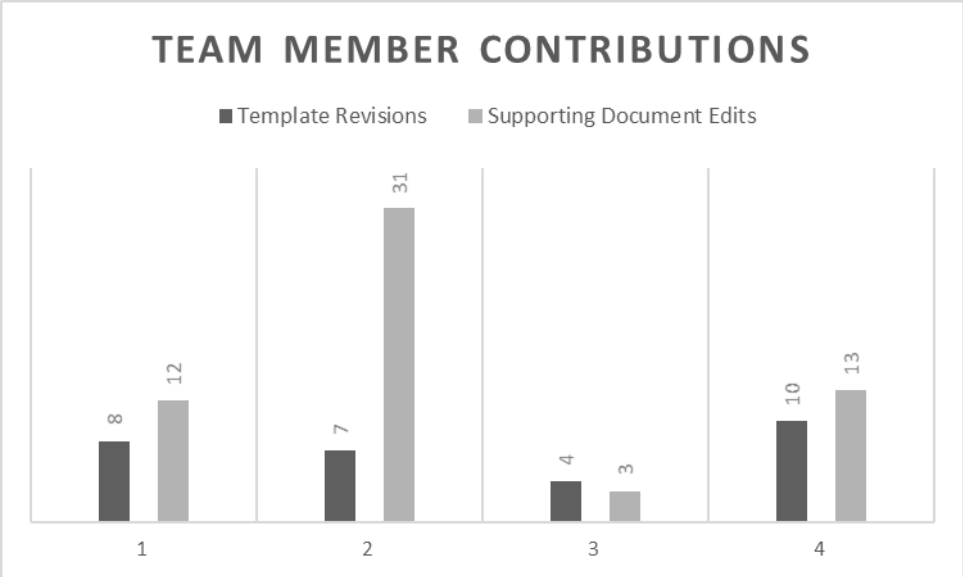

Figure 1. Co-design team member contributions.

While the team members did not participate equally in ways that were easily measurable, the group worked well together, communicated with each other and the researcher, and completed the design to the given specifications. The completed and approved micro-credential includes a theory section containing links to 12 quality articles (participants choose 1 from each of 3 sections and select quotes from the reading to answer questions) and requirements to attend a training, putting into practice one strategy learned then reflecting on the results, and to present the concept formally to another teacher. The demonstration portion of the micro-credential includes a video reflection form and links to 10 videos, from which participants are to watch two from each of two sections, and complete and submit the reflection form, and a live observation form to be used during each of three classroom observations. The practice section includes a document to plan for questioning and discussion, a requirement for participants to film 20 minutes of three of their own lessons and reflect on the use of questioning strategies, and an assessment of the impact of questioning strategies on students through the use of exit slips. The collaboration and peer coaching section requires the use of questioning and classroom discussion strategies in at least 3 lessons followed by completion of a reflection form, and inviting three teachers to observe in the participant's classroom and fill out the form provided. On completion of the requirements, participants are to meet with a badge facilitator to review learning and determine if the micro-credential has been earned. For clarity, a completion checklist outlines the requirements to earn the micro-credential.

When the pilot for the Questioning and Classroom Discussion micro-credential is complete, participants will complete a survey. Survey data and co-design team feedback will be used to revise and strengthen the micro-credential completion requirements prior to future use.

Conclusions

Through this research-practice partnership, a co-design process for developing multiple micro-credentials was successfully implemented. Teachers with very little experience creating, using, or earning micro-credentials are capable of creating quality requirements for earning professional development micro-credentials in a co-design

process. Teachers were empowered by the process of co-design for their own learning, but also for the future learning of peer teachers as some teachers assumed the responsibility to participate in piloting the micro-credentials as professional development activities. Micro-credentials provided an opportunity to differentiate professional development as well as provide a vehicle for tracking implementation in the classroom and the content learned in a professional development program. They are a way to record progress and learning on a small scale and are used to document learning of specific skills, knowledge and abilities. Additionally, micro-credentials provided transparency into teachers' professional development activities and supported the classroom implementation practices. Providing background theory and understanding of micro-credentials, an example micro-credential, a template, and assistance as needed allows teams of teachers to effectively design rigorous and relevant badges informed by Learning Sciences methodologies.

The school district administration will have access to the micro-credential metadata to better understand teacher professional development. District teachers have more options of micro-credentials to choose from for personal professional development, which can be earned at times that are convenient for them and in teams that can support their learning. Researchers will have access to the metadata for future studies. The research practice partnership between the district and the university has provided multiple benefits for all involved.

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