A Qualitative study of Mentors’ Scaffolding in a Teacher Professional Development Online Workshop

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1. Introduction

Taiwan’s Digital School (DS) was established to support online K-12 Teacher Professional Development. At the core of the online TPD center is platform-independent, web-based environment designed to meet the needs of a large and diverse community of education professionals. DS provides a powerful set of synchronous and asynchronous communication systems, and support tools. DS offers teaching community a variety of online TPD activities hosted by universities and educational organizations. Professionals design their own programs, take online courses experiment with new teaching methods, and expand their circle of colleagues by participating in community-wide events.

In this study, we will report findings from the Professional Development Online Workshop for Mathematical Capacity (Mathematical Capacity Workshop, MCW). We analyzed the effects of electronic mentors’ scaffolding and the interactive quality of preservice/in-service mathematics teaching at a Web-based professional development workshop. MCW was the first workshop offered by DS to provide teachers online professional development. Three senior elementary mathematics teachers co-mentored the workshop and provided apprenticeship and online mentoring for pre- and in-service mathematics teacher’s professional development.

2. Methodology

2.1 Professional Development of MCW

The MCW was designed to promote teachers’ professional development. A series of 15 weeklong workshops based on a theme of mathematical capacity investigations provided the core activity of this online mathematics workshop. Two weeks comprised face-to-face lectures with the aim of providing students the opportunity to become familiar with each other. The workshops had the explicit aim of enhancing the quality of the teachers’ repertoires of substantive knowledge about mathematics capacity and integrative curriculum.

2.2 Instructional Design

Three senior elementary mathematics teachers provided online mentoring for pre- and in-service teachers’ mathematics professional development. They were responsible for course design, co-moderating the weekly asynchronous and synchronous discussions, and assessing assignments. There were eleven units in MCW. Learners were required to browse the online-materials and then discuss them on the discussion board.

2.3 Evaluation

The evaluation included individual assignments including at least one weekly entry, one individual final report and 3 group projects including worksheets for parent-child interaction, instructional design, etc. The PD certification diploma was issued based on their involvement in the workshop and calculated hours.

2.4 Data Collection and Analysis

Research methods included content analysis, and brief email interviews. A code for dialogue transcripts was identified for dialogue content, and forms of mentoring from senior teachers. The categorization scheme was adapted from the twelve forms of electronic learning mentoring and assistance (Bonk & Kim, 1988) and Simsek (1992), which included management, questioning, direct instruction, modeling/exampleing, feedback/praise, cognitive elaborations/explanations, push to explore, fostering reflection/self-awareness, encouraging articulation/dialogue prompting, and general advice. A brief email interview was given to elicit relevant information on the participants’ perception of using online workshop for professional development.

3. Discussion

In order to understand how assistant moderated participants discussion to promote their professional growth, the frequency of assistant scaffolding strategies embedded in electronic discussions was calculated. The
results indicate that the assistants mainly employed feedback/praise strategies (n=52, 42.97%), followed by the general advice (n=21, 17.35%), management (n=17, 14.16%), fostering reflection (n=11, 9.09%), encouraging articulation (n=7, 5.78%), with direction, modeling, questioning, cognitive elaborations and effort to explore accounting for less than 10% altogether.

Among the three assistants, M1 post 47 messages, M2 55 messages, and M3 only 18 messages during the conference workshop. Of 11 posts fostering reflection, M2 made 10 posts to foster participants’ reflection and self-awareness compared with M1’s one post and M3’s none. Of 52 feedback/praise posts, M2 offered 32 posts, while M1 11 posts, M3 9 posts. Of 17 management posts, M1 offered more organizing and managing conferences, M2 initiated 2 posts, while M3 did not have any. To sum up, M1 relied more on management (32 %), feedback and praise (23 %), direction, dialogue prompting, as well as general advice (each 11 %). M2 resorts more to feedback and praise (58 %), fostering reflection as well as general advice (18 % each). M3 used more feedback and praise as well as general advice.

Paulsen (1995) describes three essential functions of computer conferencing moderators, such as the organisational, social, and intellectual functions. The study showed that while there was much variability in assistants’ mentoring styles, the assistants employed most of the social and organizational functions. M1 adopted more organizational functions; and M2 demonstrated more social with some intellectual functions. The assistants created a friendly, social environment, encouraging participation throughout, as well as providing lots of feedback and praise on students’ input. They also structured and managed the conferences, including setting the agenda (the objectives of the discussion, the timetable, and procedural rules). As the study showed, the assistants focused more on the social and organisational functions, whereas the intellectual one was less emphasised. Given this, that moderators employed a variety of modes of communication to nurture collegial connections, and reflective conversations, is of major importance.

4. Conclusions

In this project, we offered teachers an online professional development opportunity through the Web. Results indicate that most participants found the online workshop useful. They claimed they benefited emotionally and intellectually by using the telecommunications network for professional development and support. Although the positive learning effects on members were acceptable, there were some issues that needed to be further addressed and reflected upon.

First, while teachers recognized the need for greater professional interaction, they did not bring those concerns to their online colleagues due to the various reasons. The study showed that a number of participants sent bulletin-board-like messages rather than conversational messages, while a small group of teachers became "lurkers", who did not post much messages. Future design might evoke more reflection-stimulating responses by requiring participants’ reading and responding to peers and mentors postings, and force them to think and form ideas.

Second, a number of studies emphasize the importance of specific skilled moderators for fostering learning in a CMC environment (Spitzer et al., 1995). In this study, despite participants expressing their gratitude for assistants’ socio-emotional support and their efforts in guiding their learning, they expressed the need for more clues to react to messages, as they felt less sure of themselves in their use of sustained online communication skills. With this in mind, future PD workshops should model more reflective practices to provide a clear link between a significant professional development activity and classroom practice.

Third, the study showed that the assistants focused more on the social and the organisational functions, whereas the intellectual function was less emphasised. One explanation for this might be offered. As this study was a first attempt, senior teachers did not receive any formal training with mentoring strategies preceding the workshop. In addition, only 3 senior teachers were responsible for mentoring more than 100 participants, certainly a tremendous task for them. In addition to their daily teaching, they had to provide just-in-time support, initiate chat room discussion, comment on participant’s assignments, as well as employ their professional expertise to stimulate reflective dialogues. Our future PD design will recruit more mentors and provide moderators training with manuals to have mentors deliberately employ a variety of modes of communication to nurture collegial connections and reflective conversations.

5. References


