

Building an Online Community of Practice through WeChat for Teacher

Professional Learning

Sijia Xue, Xiao Hu, Xinli Chi and Jiangzhi Zhang

Abstract

This study explored how a group of higher education teachers in China used WeChat to build an online Community of Practice (OCoP), which supported their professional learning. A qualitative study was designed. Data were collected from multiple sources including online interaction excerpts, teachers' reflections, classroom observation, and interviews. The results showed that the participants were utilizing the teacher group created through WeChat to build an OCoP for professional learning in terms of three dimensions: mutual engagement, joint enterprise, and shared repertoire. Positive perceptions were identified in these participants on joining the teacher group. Moreover, their teaching practices were transformed positively. A framework for using mobile social media to transform OCoPs into knowledge-building communities for teacher professional learning was proposed based on the findings. Guidelines for nurturing and maintaining OCoPs as well as for adopting the framework were developed. Suggestions for future research are provided.

Keywords: online Community of Practice, teacher professional learning, mobile social media, WeChat

1. Introduction

The rapid pace of knowledge renewal has made career-long professional learning crucial for teachers nowadays. With the advance and popularity of Information and Communication Technology (ICT) in education, effective professional learning enhanced by technology is essential for teachers, through which teachers are able to create new visions, teaching practices and more flexible learning spaces (Prestridge & Main, 2018). Teacher professional learning refers to learning that is not designed or organized by a school for its strategic direction but regarded as natural and daily study work undertaken by teachers (Day & Sachs, 2004). It is more self-directed based on teachers' professional needs and interests, and cultivates teachers' abilities to shift their professional knowledge, attitudes, beliefs and mindsets in practice, thus to transform their pedagogies (Prestridge & Main, 2018). Three approaches to teacher professional learning are explicated by Prestridge and Main (2018), including collaborating through teacher teams, participating in professional learning communities (PLCs), and learning through social networking. PLCs refer to groups of teachers who come together to engage in regular, systematic and sustained cycles of inquiry-based learning (Stoll & Louis, 2007). PLCs have been promoted for over a decade as a supportive approach to professional learning (DuFour, 2014) as they provide spaces where teachers can reflect together, deliberately and systematically as professionals, to facilitate collective and sustainable shifts in their practice (Chauraya & Brodie, 2017).

Online learning communities are deemed as a catalyst to enhancing teachers' professional practice (Tang & Chung, 2016). Particularly, with the development and accessibility of the Internet, online PLCs are becoming increasingly prevalent for teacher learning (Ansari et al., 2012), eliminating the boundaries of time and space. The accessibility and popularity of various Web 2.0 tools and apps along with the increase of social networking has created more opportunities for professional learning online. These social networks offer teachers both the space and tools for communication, reflection and collaboration with others (Prestridge & Main, 2018). While still minimally adopted in education, mobile social media is becoming a new focus for research, and emerging studies and literature have been demonstrating that mobile social media is an effective tool in facilitating various learning (Manca & Ranieri, 2016; Price et al., 2018; Sharma et al., 2016; Sun & Yang, 2015). Teachers are turning to social media for a range of education-focused resources and networks to collaborate, particularly with their mobile devices that make more learning opportunities available (Prestridge, 2019). To date, however, few studies (Goodyear et al., 2014; Qi & Wang, 2018; Wesely, 2013) have been conducted investigating how mobile social media can be used to support online communities for teacher professional learning. To this end, the current study examines how an online learning community based on WeChat may support teachers in building professional knowledge and transform their teaching practice, and explores teachers' perceptions on the learning experience, with the overarching aim of articulating a framework for utilizing mobile social media to promote teacher professional learning.

2. Literature review

2.1 Community of Practice

The theory of Community of Practice (CoP) was first introduced with the concept of “situated learning” (Lave & Wenger, 1991), which argues that learning occurs when knowledge is situated and co-constructed in the social context where learning is applied. According to Wenger et al. (2002, p. 4), CoPs are “groups of people who share a concern, a set of problems, or passion about a topic, and who deepen their knowledge and experiences in this area by interaction on an ongoing basis”. In the context of education, CoP has been defined as “a self-selected purposeful structure whereby educators regularly come together to work for the collective benefit of students” (Lave & Wenger, 1991, p. 5). Three crucial concepts underpin the principles of CoP, including domain, community and practice. The domain is the common ground where members share their ideas, knowledge and stories, and gives a group its identity. The community “creates the social fabric of learning” (Wenger et al., 2002, p. 28) and offers the participants sense of belonging. As Shaffer and Amundsen (1993, p.10) put it, “a community emerges when the members identify themselves as part of something and commit themselves for the long term to the group’s benefits”. The third underpinning concept of CoP theory is practice, which represents the body of knowledge, methods, tools and documents that the members develop, share and maintain in their specific contexts (Gunawardena et al., 2009; Smith et al., 2017).

Wenger (1998) explains that CoP should be regarded as a unit and defines itself along three dimensions: mutual engagement, a joint enterprise and a shared repertoire. Individuals in CoPs are involved in a process of “mutual engagement”, which can be considered as the realm of relationships and ultimately, the sphere of social capital (Wenger, 2004). The relationships of mutual engagement bind members together into a social entity and determine how a CoP functions; The second feature of a CoP is “joint enterprise”, which refers to what a CoP is about, and is understood and negotiated by the members (Wenger, 1998). Joint enterprise can be taken as the realm of purpose and “domain”, which refers to its common purpose and the sense of members’ identification with a topic and practice (Snyder et al, 2003). The third feature of a CoP is “shared repertoire”, which means what capability a CoP has generated or adopted, including routines, words, ways of doing things, concepts that members have developed over time (Wenger, 1998). Shared repertoire can be described as the realm of tools and techniques (Snyder et al, 2003). The shared tools and techniques of a CoP are the medium through which meaning is negotiated and learning occurs (Koliba & Gajda, 2009). These three features form essential qualities of a CoP and manifest themselves as criteria by which participants of a CoP recognize membership (Wenger, 2010).

However, due to the differences in individual knowledge and experience, there also exist differences in the participation of members in a CoP. In order to make newcomers develop into experienced members and engage in more interactions in a CoP, efforts should be invested for ‘legitimate peripheral participation’ (Lave & Wenger, 1991).

This is a process in which a novice becomes an experienced member and eventually an expert of a CoP or collaborative project. According to Lave and Wenger (1991), newcomers become members of a community initially by participating in simple and low-risk tasks that are nonetheless productive and necessary and further the goals of the community. Through peripheral activities, novices become acquainted with the tasks, vocabulary, and organizing principles of the community's practitioners. Gradually, as newcomers become old timers and gain a recognized level of mastery, their participation takes forms that are more and more central to the functioning of the community. Legitimate peripheral participation suggests that membership in a community of practice is mediated by the possible forms of participation to which newcomers have access, both physically and socially. If newcomers can directly observe the practices of experts, they understand the broader context into which their own efforts fit. As participation increases, situations arise that allow the participant to assess how well they are contributing through their efforts, thus legitimate peripheral participation provides a means for self-evaluation (Lave & Wenger 1991).

2.2 OCoPs for teacher professional learning

An online community of practice (OCoP) can be defined as a group of people, who share and develop knowledge, beliefs, values and experiences focused on a common practice through regular interactions facilitated by technologically mediated communications (Liu, 2012). While it has been indicated that teachers could combine OCoP with face-to-face communication for professional learning (McConnell et al.,

2013), OCoP is generally used to provide solutions to professional development needs of teachers who are not able to communicate face to face such as distance educators (Bond & Lockee, 2014). Also, it has been demonstrated that OCoP is as effective as face-to-face communication in terms of knowledge dissemination and professional development (McConnell et al., 2013; Penfold, 2010). Many studies have demonstrated OCoPs to be supportive for teacher professional learning in developing teachers' technology knowledge (Bostancioglu, 2018), intercultural knowledge (Hajisoteriou et al., 2018), teaching pedagogy (Wang & Lu, 2012), teaching self-efficacy beliefs (Ekici, 2018) and in promoting communication with peers (Hou, 2015). Moreover, the development of teachers' professional learning can give rise to the promotion of students' knowledge and learning outcomes (Zandi et al., 2014).

While empirical research on OCoPs supported with mobile social media is limited, it was demonstrated that Facebook and Twitter played a role in sustaining the application of pedagogical innovation by teachers (Goodyear et al., 2014). In their longitudinal project that explored how teachers learnt and refined their use of a pedagogical innovation, social media emerged as a CoP where teachers were encouraged to work collaboratively and to develop their practice collectively through online interactions. Analysis of these interactions indicated that social media presented itself as a new method for professional learning in changing teachers' practice and in their sustaining use of the pedagogical innovation. Interactions on social media promoted teacher inquiry and challenged teachers to develop their existing use of the innovation further,

and encouraged them to work together and develop shared practices (Goodyear et al., 2014). Similarly, Wesely (2013) identified that OCoP built on Twitter promoted activities for members to share ideas and practices. Qi and Wang (2018) found that WeChat was effective in engaging teachers with one another in both synchronous and asynchronous ways to work and reflect together, and share experiences and ideas.

2.3 Educational affordances of mobile social media

Educational affordances can be defined as opportunities for an educational activity that are determined and supported by perceived and actual features of a technology tool or an environment (Xue & Churchill, 2019). Different areas of educational affordances of mobile social media such as Facebook and Twitter have emerged from the literature. It was demonstrated that mobile social media could be used to release and share teaching and learning materials through integrating with different platforms (Özdemir, 2017; Price et al., 2018). Moreover, due to the features such as connectivity, mobility and content generation, mobile social media could be utilized to achieve collaborative learning (Menkhoff et al., 2015; Menzies et al., 2017), reflective learning (Chawinga, 2016; Ricoy & Feliz, 2016), and blended learning (Manca & Ranieri, 2016). Furthermore, learning communities could be established through mobile social media to facilitate in-depth communication and extend learning.

As one of the most popular mobile social media apps in China, WeChat was released by Tencent in 2011. It integrates audio, video and text chats into one platform to support

synchronous, asynchronous and semi-synchronous interactions in multi-languages, and is noted for its featured properties such as instant messaging, “Moments”, chat groups, official accounts, and mini programs. All these features allow for user-generated content and promote communication and collaboration among users. By 2016, WeChat had possessed 980 million monthly active users, ranking the fourth in the selected mobile social media apps (Statista, 2016). According to the official report of Tencent, the number of daily login users of WeChat reached over 900 million (WeChat Data Report, 2017). With its popularity, the use of WeChat in education is also increasing (Luo & Yang, 2016; Zeng et al., 2016). Despite the emerging studies regarding the educational affordances of WeChat (Xue & Churchill, 2019), how it may be used to support a CoP for teacher professional learning remains unknown. This is one of the gaps that the present study aims to bridge.

2.4 The C4P framework for CoPs

CoPs can be facilitated by technologies. Three areas of technology affordances have been identified to support CoPs, including content, process and context (Hoadley, 2012). The content affordance refers to the representational capacities of technology, such as the storage and management of information of different formats. The process affordance means the technology’s capability to facilitate activities, tasks or sequence of actions. The last affordance, context, is the capability of technology to change the users’ social context (Hoadley, 2012). Enhanced by technologies, a CoP is more convenient, flexible and can offer just-in-time support (Wang & Lu, 2012). In order to

better nurture and maintain an OCoP, four techniques for using technology to support a CoP are proposed by Hoadley (2012). First, technology can be employed to connect people with others having similar practices. Next, technology can be used to provide a shared repository of information resources. Third, technology can be utilized as a tool for scaffolding discussions with others to support communication. A further technique for supporting CoP with technology is awareness-raising for members in a community of information context through various resources.

Based on the affordances of technology and strategies for using technologies, Hoadley and Kilner (2005) proposed a C4P framework for CoPs (see Figure 1). The framework postulates that knowledge is produced and shared when there is a purposeful conversation around content in context. Five elements are encompassed in this framework, including content, conversation, connections, information context, and purpose. “Content” refers to explicit, static knowledge objects such as documents or video clips, which is essential to a knowledge-building community. “Conversation” means online discussions, which is the most effective mode of knowledge transfer and generation. “Connections” can be understood as the relationships and trust between community members, which enable the members to work jointly on the shared goal of building their knowledge domain. “Information context” empowers participants of a community to assess whether and how information is relevant to them and to apply the knowledge to their own situations. “Purpose” is the reason for which the members came together in the community, which is the defining factor in collaboration. These five

elements feed of and reinforce each other to construct an effective knowledge-building community (Hoadley & Kilner, 2005).

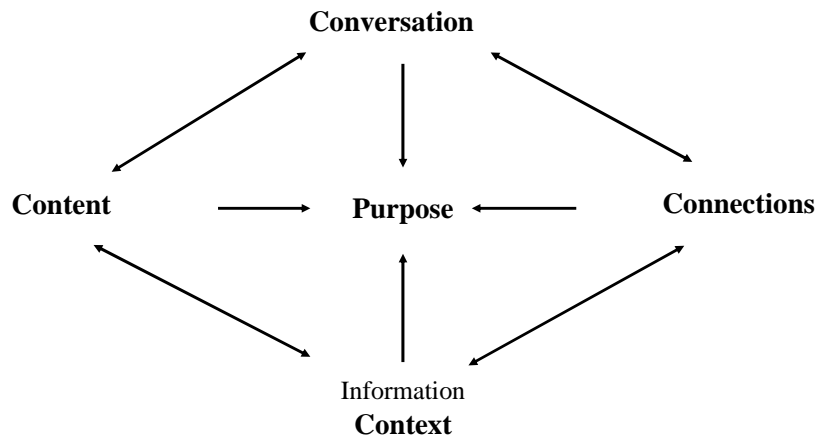


Figure 1. C4P framework for CoPs

To sum up, the combination of mobile and social media technologies has increasingly become the focus area of educational research. While the existing empirical studies have demonstrated that OCoPs are beneficial for teacher professional learning, little is known about how mobile social media such as WeChat could be employed to support teachers in their professional learning, particularly how mobile social media could be used to build OCoPs as PLCs to develop teacher’s professional knowledge. Moreover, the previous studies examined how CoPs could be supported by technologies for teacher professional learning from a general perspective, focusing mainly on the achievement of teachers’ knowledge rather than the process of OCoPs building. Thus, how the affordances of technology such as content, process, and context could be utilized to build OCoP for teaching professional learning was not specified. To fill these

gaps, the present study will not only focus on how mobile social media could be leveraged to support teachers to build OCoPs for professional learning, but also investigates how the content, process, and context affordances of mobile social media could be applied synthetically in a framework to help teachers develop their professional knowledge. On the one hand, the finding of this study will extend existing literature on OCoP for teacher professional learning. On the other, the framework may guide teachers' practice of using mobile social media to build OCoPs. Hence, the study is significant both theoretically and practically.

3. Methodology

This study aims to investigate how WeChat may be used by teachers to build OCoPs for professional learning and what transformative effects it may have on teachers' teaching practices. A qualitative research design (Creswell, 2012) was adopted to address the following research questions:

- 1) How do the participating teachers utilize WeChat for OCoP building?
- 2) What are their perceptions on participating in the teacher WeChat group for professional learning?
- 3) What are the teachers' transformational changes in their teaching practice?

3.1 Background

This study was nested within a wider longitudinal project that explored the educational affordances of mobile social media in higher education in China. Four higher education

teachers from four universities were recruited for the project as case teachers. Since these teachers were working in different universities in different cities, it was hardly possible for them to physically meet and thus online communication became the most appropriate way for them. As WeChat is one of the most popular mobile social media apps in China, it was convenient for all the participating teachers to join a same WeChat group. While the participants were informed of the purpose of creating such a teacher group, no rules were prescribed as to how this WeChat group should be used. No expectations were set by the researchers, which means that the participants would not necessarily use the group in a way of building an OCoP. All the interactions were generated and carried out by the participating teachers autonomously during the study.

3.2 Participants

As mentioned in the previous section, the project aimed to investigate the application and affordances of mobile social media in higher education in China. Therefore, the case teachers were recruited based on the following specific criteria: 1) he/she teaches in a university in China; 2) he/she is using mobile social media in his/her teaching practice on a regular basis; and 3) he/she is willing to explore more about using mobile social media for teaching and learning. These four higher education teachers came from four universities and were teaching different disciplines when this study started. While they were all in their thirties and work as full-time lecturers in different universities, their personal experiences of utilizing mobile social media for teaching were diversified. Comparatively speaking, Ada and Vivian were more experienced teachers with four-

and three-year experience of teaching with mobile social media, respectively. They had known very well about how to integrate mobile and social media technologies into teaching and learning to serve their teaching objectives and accomplish satisfactory outcomes. Particularly, Vivian, with an educational background of mobile learning, was very good at designing various teaching and learning activities using mobile and social media technologies. In contrast, Fiona and Cathy were just beginners. Even though they had applied mobile social media for educational purposes for 1 year when the study started, their application was constrained to only a few aspects of teaching and learning such as using mobile social media apps to answer inquires of students after class. They were still exploring the educational affordances of mobile social media technology and attempting to enhance their teaching through adopting these affordances. The specific background and biographic information of these participating teachers have been demonstrated in Table 1. For the privacy concern, pseudonyms were used for the teachers in referencing their quotes and comments. Ethical approval was obtained from the university prior to conducting this study.

Table 1.
An overview of participants and their biographic information

Name	Gender	Age	Subject areas	Years of Teaching	Years of Teaching with Mobile Social Media
Ada	F	38	Editing & Publishing	10	4
Fiona	F	37	Business communication	10	1
Vivian	F	38	Advertising design	5	3
Cathy	F	36	Psychology	3	1

3.3 Data collection

Multiple sources of data were collected in order to strengthen the reliability and validity of the study through triangulation (Merriam, 1998). First, excerpts of participants' interactions in the WeChat group were collected with the purpose of identifying incidents of mutual engagement, joint enterprise and shared repertoire (Wenger, 1998). The first author, as well as the principal investigator of the project created a WeChat group for all the participants to join. The first author, as one of the researchers of the present study, was also in this chatting group to observe the participating teachers' interactions, and answer questions that they raised as the project progressed. Thus, a WeChat group of five people was created for the present study. However, in order to exert as little influence as possible on the participants, the researcher mainly played a role of coordinator so that interactions among the participants occurred naturally.

To further understand how this OCoP built through WeChat support these teachers in their teaching practice, reflections on how they used mobile social media in their teaching as well as on their ongoing perceptions during the process were collected. The teachers were asked to submit a reflection to the first author at the end of every month. The reflections were written in Chinese and then were translated into English by the second author, who is a qualified translator with abundant experience. A total of five reflections were collected from each participant by the end of the study.

Two sets of classroom observation were performed, respectively, at the outset and the end of the semester. The purposes of conducting classroom observation were multiple. On the one hand, it could help validate the data regarding participants' uses of mobile social media that were reported in the submitted reflections in order to achieve triangulation. On the other hand, it could help the researcher to register changes in these teachers' practices in terms of teaching with mobile social media technology after their participation in the teacher group.

Finally, semi-structured interviews were conducted with the participants at the end of the study to understand their perceptions of this form of communication, challenges encountered and suggestions for effective use of teachers' groups for professional learning. The interviews were conducted in Chinese first and then were transcribed verbatim and translated into English for data analysis. The Chinese transcripts were sent to the teachers for member check (Merriam, 1998). The entire process of data collection lasted for one semester, which comprised 18 weeks.


3.4 Data analysis

The data were analyzed following the conventions of Content Analysis (Krippendorff, 2013). To address the first research question, all the interactions on WeChat by the participants were scrutinized and coded with six indicators of identifying CoP that were adapted from Wenger (1998, p. 125), with the purpose of understanding how the created WeChat group was utilized by the participating teachers for CoP building in terms of

mutual engagement, joint enterprise and shared repertoire (see Table 2). For example, during the interaction, if teachers uploaded specific tools, representable contents or personal artefacts that were associated with and useful for the integration of mobile social media technologies (Indicator 5), or exchanged ideas and experiences regarding how to utilize mobile social media for teaching and learning (Indicator 6), they were building a shared repertoire. A case in point was that Fiona shared an instruction (artefact) written by herself concerning how to utilize a public account of WeChat for teaching and learning to the group members, which could also be used as a tool for other participants (see Figure 2).

Table 2.
The six indicators of identifying CoP

Indicators	CoP dimensions
1. Sustained mutual relationships and rapport	Mutual engagement
2. Rapid flow of information and effective communication	Mutual engagement
3. Shared the goal for building a supportive OCoP	Joint enterprise
3. Shared ways of engaging in doing things together	Joint enterprise
5. Specific tools, representations, and other artefacts	Shared repertoire
6. Idea exchanges, shared stories, and inside jokes	Shared repertoire

功能	路径	备注
考勤	工具栏 四种形式：传统点名，GPS 定位，验证码， 二维码（可设定变换时间）	 GPS 可能定位有误 二维码可有效防止作弊

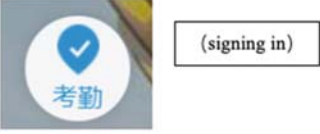
Functions	Paths	Remarks
Signing in	Tool bar Four forms: traditional, GPS positioning, verification code, and QR code (settable conversion time)	 There may be errors in GPS positioning. Code scanning is useful for preventing cheating

Figure 2. Instruction for using a public account of WeChat to sign in

To understand teachers' perceptions on the participation of the teacher group and to identify their perceived transformational changes in their teaching practices, all the transcripts and reflections were analyzed. Units of analysis were identified for open coding first. Preliminary codes emerging from the texts were determined for further coding. Similar codes were grouped, refined and checked to form categories. Relationships between categories were identified to generate themes. Classroom observation videos were analyzed to validate what had been reflected by the teachers, in order to further identify changes in their teaching practices. Data coding went through initial coding and re-coding stages by the authors to strengthen the validity of the results. Discrepancies were resolved through discussion until consent was reached. Themes were identified, categorized and cross-checked by the authors, and were developed through referring to a qualitative design of grounded theory (Glaser & Strauss, 1967). No prior assumptions were generated before the analysis. The results emerged inductively from inspecting and interacting with real data.

4. Results

In this section, findings are presented in three parts according to the research questions: the process of teachers' OCoP constructing using data from their interactions in the WeChat group; teachers' perceptions on participating in the teacher group based on their reflections and interviews; and changes in their teaching practices about applying mobile social media for teaching that was identified through classroom observations. Indicators of identifying a CoP in terms of the three dimensions (i.e. mutual engagement, joint enterprise and shared repertoire) proposed by Wenger (1998) were referred to when teachers' WeChat group interactions were interpreted (see Table 2).

4.1 The ways teachers utilized WeChat group for OCoP building

Mutual engagement

Two indicators were used as codes for identifying this dimension, including sustained mutual relationships and rapport, and the rapid flow of information and effective communication. It was evident that teachers built up warm and supportive relationships through interactions in the WeChat group. The process from the initial setup of an online space to closer relationship building, and eventually achieving a sustained CoP has been demonstrated in the following Figures (see Figure 3 & Figure 4). At the beginning, they just introduced themselves and greeted to each other modestly (see Figure 3), then they sent festival greetings to the group members autonomously in a more relaxed way and showed their concerns when someone in the group became ill (see Figure 4).



Hello, everyone!

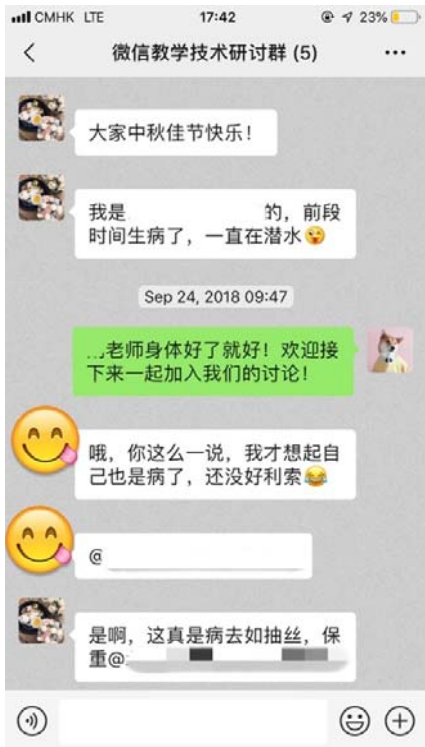
Hi!

I'm from XXX university. Kindly give me your advice, please.

I'm from XXX university. Kindly give me your advice, please.

I don't think there is a need for me to introduce you one by one as you seem to get familiar with each other quickly. Since you are all girls, this may even be easier.

Figure 3. Teachers' WeChat group: the start of mutual engagement



Happy Mid-Autumn Festival!

I am from XXX University. I was sick for the past few days, so I was "lurking".

It's so good that you got recovered. Welcome to join us in discussion!

You reminded me that I am also in sickness. Not recovered yet.

@Fiona

Yea. Diseases come on horseback, but go away on foot. Take care!
@Vivian

Figure 4. Teachers' WeChat group: rapport building in mutual engagement

The rapport built among teachers promoted their effective communication making the flow of information more smoothly. As shown in the Figures below, teachers tended to turn to their group members for assistance when encountering problems during the integration of mobile social media in their teaching. These issues might be either technology-oriented (see Figure 5) or context-related (see Figure 6), all of which were effectively addressed in a timely fashion. It could be observed that good mutual engagement and trust among the teachers were established.



@Ada Could you please tell me is Ketangpai operated on computer by teachers to project on screen, or we can do this on our mobile phone?

And how to achieve simultaneous screen?

@Cathy On computer. I only use mobile phone to add some assignments such as uploading materials by taking photos, distance assessment. @Vivian On the left there is a tool bar and you can select "simultaneous screen".

Figure 5. Teachers' WeChat group: effective communication in mutual engagement 1



One more question, can I use a remote pointer when presenting PPT on Ketangpai?

I haven't tried yet and am not sure.

I can try to use this week then.

Yea. That is a good suggestion. You can share with us your using experience after that.

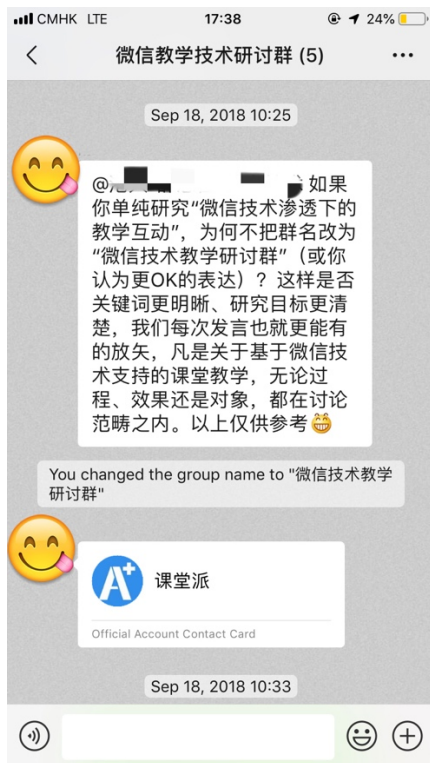
Sure.

Sorry. I was in a meeting. @Cathy Yes. You can use a laser presenter.

Figure 6. Teachers' WeChat group: effective communication in mutual engagement 2

A joint enterprise

The teachers shared the goal of building a supportive OCoP for educational technology integration and shared ways of engaging in each other to achieve the goal. For example, one teacher suggested the name of the group, in order to highlight their communal goal and guide the content for their discussion (see Figure 7). Also, different ways were shared to engage the teachers for accomplishing their communal goal via the group chat, including articles, official accounts and QR codes. For example, when a new form of educational technology that was considered useful for teaching appeared, it was introduced immediately to the group where teachers discussed whether they could utilize it or not (see Figure 8). It was noted that teachers worked in a collaborative way to identify optimal approaches to employing mobile social media for teaching.



@the first author If you want to study interactions between teacher and students facilitated by WeChat, why not change our group name to “Study Group of Teaching with WeChat Technologies” (or a better one?). In this case, we have more distinct key words, clearer study aims so that our discussion will be more focused on classroom teaching with WeChat technologies, either on teaching process, or on students. They are all relevant. Just my suggestion.

You changed the group name to “Study Group of Teaching with WeChat Technologies”

Vivian pushed an official account contact card (Ketangpai) to the group

Figure 7. Teachers’ WeChat group: shared goal in a joint enterprise



(Ada shared an article on a newly developed instant messaging tool for teaching.)

You can try it first as a pioneer!

It seems that WeChat is taking the place of QQ and such a tool is designed for particular groups of users (like us) with particular needs.

“Bullet Messaging”

(The QR code of this tool was shared)

Figure 8. Teachers’ WeChat group: shared achieving ways in a joint enterprise

Shared repertoire

Teachers shared their own teaching methods and outcomes using mobile social media to other members regularly, and exchanged ideas on the integration of mobile social media for teaching and learning. As is exemplified in Figure 9, a teacher shared the works of her students completed through mobile social media during the course to the group, which was part of her teaching contents as well as teaching outcomes. By doing this, she was showing how mobile social media such as WeChat public platform could be employed for students to construct knowledge. Another example was that the teachers kept sharing their own stories and ideas related to using mobile social media for teaching at different stages of the study (see Figure 10). The sharing engaged the teachers into an ongoing conversation that sustained this OCoP, and functioned as a medium, through which meaning was negotiated and learning occurred.



(Ada shared a team work on editing completed by her students)

A team work by the class of 2017 Editing and Publishing group. Welcome comments and suggestions!

Great! I received the notification pushed by your official account. I will read it in detail later.

Figure 9. Teachers' WeChat group: shared artefacts in the shared repertoire



I am not good at using Ketangpai yet.

Let's learn together. @Cathy

Me neither. Just began to learn. I found the function of "quick-response questions" useful and I used it for review.

@Ada You mentioned using Ketangpai for editing and proofreading, how?

Set assignments and specify groups of students to submit. Assess and modify directly in Ketangpai by entering submission page. It doesn't affect classroom discussion.

Figure 10. Teachers' WeChat group: idea exchanging in shared repertoire

4.2 Teachers' perceptions on participating in teacher WeChat group

All the reflections submitted by the participating teachers and the interview transcripts were analyzed through content analysis (Krippendorff, 2013). Teachers' perceptions were categorized and interpreted from three dimensions, including their attitudes towards the participation of the group, the challenges they encountered and suggestions they provided. Positive attitudes were identified in teachers towards the participation in this teacher group, particularly towards the way they communicated. As Ada stated in the interview:

“I think the most obvious merit of such an OCoP is ‘planarization’. By this, I mean everyone is given equal opportunities to learn and we can discuss whatever we like related to the shared topic (how to use WeChat for teaching). There is no authority here. Even if we come from different institutions, we share the same goal. This makes our communication purer.”

Other benefits of participating in the teacher group that resulted in teachers' positive perceptions were also reported. For example, Cathy expressed her perceptions in her reflection:

“For me, the biggest benefit is that I have known a couple of teachers who come from different universities with the same interest as mine, that is how to use mobile social media technology for teaching and learning. I can learn

from their experiences that may help me to develop my own professional knowledge, and I can establish good relationships with them.”

Similarly, Fiona also believed that participating in this teacher group helped her with her teaching practice. Below is a quote from her interview transcript:

“Personally, I am not good at applying new technologies for teaching. Therefore, I always refer to the discussion or sharing in the group for my own teaching. For example, I watched the teaching videos shared by other teachers and tried their teaching methods in practice. Even though I am a relatively quiet group member, I do have learnt a lot from the group.”

However, at the same time she also indicated the major challenges she encountered while participating in the teacher group during the interview:

“I think the biggest challenge for me is the lack of relevant knowledge. I am a novice teacher in terms of mobile technology-enhanced teaching and still learning. Sometimes I found it difficult for me to join in their discussion because the issues they were talking about were too new for me. I am not experienced enough to discuss those issues with them and I can only raise some very simple questions every time. This is a challenge for me.”

Time issue as a major challenge for the participating teachers to maintain smooth communication and discussion was reflected by other members. Among these four teachers, three were mothers of two children. Two were part-time PhD students besides their job as a full-time university teacher. The different roles that they had to play distracted their time and energy for professional learning, and affected their commitment to participating in an OCoP. As described by Vivian in her reflection:

“A main challenge for me is time-related. While such a teacher group facilitates our communication from the aspect of space, it cannot be guaranteed that everyone is available at the same time. We all have our own roles to play. For example, I have two children to take care of. We also teach in different contexts with different conditions such as workload. For instance, compared with other participating teachers I have more courses to teach, which occupy too much time of mine to join in the group discussion in time.”

In order to maintain the teacher WeChat group as an effective OCoP for teacher professional learning, the participating teachers also provided their suggestions. For example, Ada suggested during the interview:

“First, teachers can summarize and share their teaching experiences on a regular basis in turn, in order to sustain the communication. We can even live show our classroom teaching to the group members for peer review.

Second, if possible, we can meet in person to have a dinner or maybe just a cup of coffee for face-to-face discussion. I think this is really necessary. On the one hand, it will foster deep communication; on the other, it will promote the relationships between the participants.”

Likewise, Fiona also provided her suggestions for sustaining the teacher group during the interview:

“Personally, I think there should be learning resources and materials accommodating the needs of teachers with different levels of knowledge. Of course, the role of group facilitator is very important. He or she should organize discussion around different topics that may be appropriate for all group members. However, it should be quality discussion closely related to the professional knowledge of the members.”

Based on what has been shown above, it could be noted that teachers held positive perceptions on the participation in the teacher WeChat group due to the various benefits they gained. However, such challenges as lack of time and background knowledge affected their effective communication with other members. Therefore, appropriate measures should be adopted in order to sustain the group discussion.

4.3 Transformation in teachers' integration of mobile social media technology

As indicated in the previous chapter, the participants were varied in term of experience of teaching with mobile social media (see Section 3.2). Compared with the other three teachers, Cathy was a novice teacher in integrating mobile social media into classroom teaching even though she was using WeChat groups to facilitate teaching and learning outside the classroom for two semesters. However, obvious changes were identified in her teaching practice at the end of semester. As accounted in her first reflection at the beginning of the semester:

“Ketangpai (one WeChat official account for teaching and learning) is something new to me, which I began to use only this semester. In fact, many aspects of Ketangpai need exploring for me. Currently, I only use it to register students' attendance, which makes the results very direct and clear to me.”

By contrast, in her second reflection that was submitted 1 month later, she described:

“I have been integrating it (Ketangpai) into my classroom teaching. The first time I used the “bullet screen” and “interaction” functions of Ketangpai in the class, students were very excited. The whole class was more interactive and the students became more engaged. They reflected after the class that the “bullet screen” was so cool and more interactions as such were expected ...

I am able to interpret questions from the angle of students as such interactions occur in my class. I am more aware of what students are thinking about, what they need, and what questions they have so that I can facilitate their learning in time.”

Similar results were also identified in Fiona, another novice teacher in term of applying mobile social media for teaching, for whom it was also the first time to systematically integrate WeChat into classroom teaching even though she had occasionally used other social media apps to support teaching and learning for two semesters. Below is an excerpt from her reflection:

“I have been using Ketangpai for a couple of weeks. Through discussing with other teachers in the group, I have learnt a lot. Such a way of communication is really useful. I am planning to introduce a new function of Ketangpai to my teaching every other week. On the one hand, I myself will be better prepared for teaching; on the other, students may be continuously motivated for learning.”

All these reflections were also validated through classroom observations. The first time when the researcher went to Cathy’s class, the application of mobile technology in her classroom was limited only to signing-in. Few interactions took place and the entire session featured teacher’s instruction, with students being passive knowledge receivers.

Prior to the end of the semester, the researcher conducted the second classroom observation after Cathy had learnt how to better use mobile social media for teaching and learning through communicating with teachers in the teacher group for nearly 4 months. Enormous changes were identified in her class, where various interactions facilitated by mobile and social media technologies were occurring and the engagement of students was promoted as a result. For example, she not only designed effective activities to engage students in answering questions (see Figure 11), but also encouraged the students to discuss their group tasks through mobile social media directly in the classroom. It could be noted that Cathy had become more familiar and confident with the application of mobile social media technologies for teaching and learning after participating in the teacher group. This was further confirmed by what she said during the interview that was conducted at the end of the semester:

“I asked some questions about the application of Ketangpai for classroom teaching and they (other participating teachers) answered my questions very actively. I felt that no matter what questions I raised, they could always give me answers in time. Their suggestions were really useful for my own teaching. Besides, they also shared teaching and learning resources through the group, which also helped improve my teaching.”



Figure 11. Interactions facilitated with mobile social media in Cathy’s classroom

Similar to Cathy, Fiona’s classroom teaching enhanced with mobile social media also developed apparently over time. She had formed her own teaching style with well-organized teaching and learning activities that were facilitated with mobile and social media technologies. Fiona was technology-oriented when the research started, which means she adopted technology for the sake of technology focusing largely on the functions of the technology tools. As she mentioned during the interview, “...*I tried whatever technologies that seemed interesting or recommended by my friends and colleagues in my teaching before...*”. However, with her own reflection on the integration of mobile social media as well as the collective discussion with other teachers in the group, she began to become aware of what she really needed and utilized the technology in a more rational way. As she accounted later, “*now, what I considered first is how the technology or certain affordances of the technology could better serve my instruction*”. It could be noted that the entire lesson by Fiona was prudently designed with appropriate interactions facilitated by mobile social media technologies, which

were based on her teaching objectives (see Figure 12). She related during the interview that she referred to the teaching videos shared by other teachers to the group, in order to better design her own teaching. She also used the group discussion to consult experienced teachers about the issues that emerged during her own integration. All these helped improve Fiona's teaching with mobile social media.

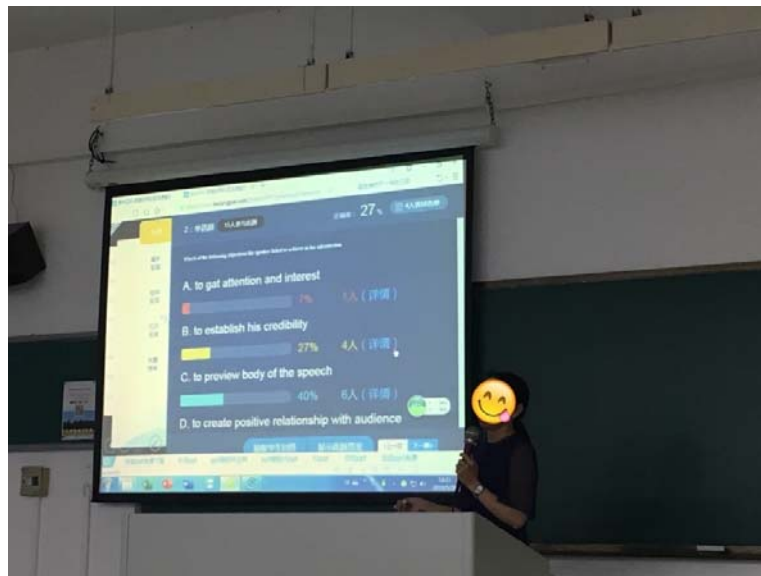


Figure 12. Interactions facilitated with mobile social media in Fiona's classroom

Compared with Cathy and Fiona, Ada and Vivian were experienced in teaching with mobile social media. Particularly, Ada, who had been using different mobile and social media technologies to support teaching and learning for 4 years, knew very well how to leverage the technology for educational ends. For most of time, Ada played a role of 'leader' in this teacher group answering inquiries of others concerning the integration of mobile social media. While Ada had become an expert of using mobile social media to support teaching and learning, her own teaching practice also changed over time. At

the beginning, Ada was learning-centred regarding technology adoption, which means she focused more on how students' learning of the course being taught could be facilitated while utilizing the technology. However, as she used mobile social media more in her teaching Ada became technology-oriented. This indicated that her teaching had been shaped by the affordances of the technology. As she mentioned in the interview, "*I find my teaching is controlled by technology*". Ada purposefully designed teaching and learning activities making the best of various affordances of mobile social media. For instance, she designed and conducted classroom tests which could be completed online by students through their mobile devices (see Figure 13). This type of transformation to some extent was due to her increasingly accumulated experience but was also triggered by the participation of the teacher group. As other teachers kept consulting Ada about questions regarding technology integration, she had to keep exploring in order to remain qualified as a 'teacher'. Consequently, her teaching began to be oriented by technology gradually.



Figure 13. Online test facilitated with mobile social media in Ada's classroom

In contrast with Ada, Vivian, as another experienced teacher in teaching with mobile social media technologies, did not demonstrate such transformation. The major changes in Vivian's classroom teaching was that she was keeping attempting to utilize mobile social media in different ways to support teaching and learning. As mentioned earlier, Vivian possesses a good educational background of mobile learning so that she was quite aware of how to integrate mobile social media into her teaching from both technological and pedagogical aspects. In fact, she had shown a well-developed way of teaching with mobile social media in the first classroom observation such as sharing learning resources, interacting with students, and assessing students' answers through different mobile and social media technologies. However, she was trying a new teaching method, 'flipped classroom teaching', in the second classroom observation (see Figure 14). She uploaded various teaching and learning materials through mobile social media for students to review and self-learning prior to the class and designed

group tasks during the class to examine students' learning outcomes. The group tasks were completed on mobile devices with the assistance of mobile and social media technologies. In her class, the students became the centre of the class whereas the teacher played a role of facilitator.



Figure 14. A new teaching method facilitated with mobile social media in Vivian's classroom

While different teachers demonstrated different changes in their teaching practices by the end of the semester, it could be observed that positive transformations occurred regarding teaching with mobile social media technologies. This was particularly obvious in Cathy and Fiona. Thus, it may be concluded that sharing and discussion between the participants through the teacher group helped them to develop their professional knowledge on integrating mobile technology with teaching. Such online communication was of great importance when the teachers were unable to physically meet each other and discuss face to face. Particularly, few colleagues were available

for the teachers in their own institutions to discuss the relevant issues. As mobile social media was still minimally integrated in higher education in China, these participants to some extent represented the innovators not only in their working institutions but also in technology innovation in China's higher education. That was also why there were selected for the research project mentioned earlier (see Section 3.1). As indicated in the findings, the participants applied what they learnt from interactions with others in the teacher group into their own teaching practice to enhance teaching and learning outcomes. In other words, participating in the teacher group to a large extent positively transformed the participants' teaching practices.

5. Discussion

5.1 Nurturing and maintaining OCoPs for teacher professional learning

It could be noted from the results that participants used the teacher group based on WeChat to build an OCoP, which has been demonstrated to be supportive for teacher professional learning. Meanwhile, not only positive perceptions of participating in the teacher group have been identified in the participants but also their teaching practices have been transformed positively. Thus, WeChat, as mobile social media, could be utilized to construct OCoPs for teacher professional learning. However, the nurturing and maintaining of an OCoP as such may involve a range of challenges, such as building rapport in teachers, performance anxiety, time pressure, and technical frustration (Thang et al., 2011). Particularly, time issues that were reported by previous studies as one of the major limitations for participating in OCoPs (Khalid et al., 2014)

have also been mentioned by participants in this study. This issue may be attributed to the teachers' workload in terms of teaching at school as well as personal business such as looking after children, and to some extent could impact their commitment to professional learning and thus limit their participation of the teacher group. Therefore, to sustain the smooth communication in an OCoP time could be fixed for regular member activities after considering the individuals' schedules of all members.

Moreover, it is believed that learning communities should facilitate teachers in their decision-making based on specific contexts, help them achieve their teaching objectives, and develop their professional knowledge (Vescio et al., 2008). Regarding this study, the participants were teaching different disciplines in different universities. Even though they might use the same technology tool, their specific contexts including the students, teaching objectives as well as institutional influences may lead to diversities in their practices. Therefore, an OCoP should be designed to "support the actual practices and daily tasks of the participants" (Hibbert & Rich, 2006, p. 564), and the interactions among the participants should be meaningful, mutually beneficial, sustained and influential (Goodyear et al., 2014). However, nurturing and maintaining an OCoP does not only mean transferring the activities of a CoP to an online environment, which may not ensure the interactions that support the meaning essential for the development of a CoP. By contrast, technology should serve as an approach to ensuring participant engagement with one another for the generation of communal knowledge and resources (Smith et al., 2017). In other words, participants should shift

their focus from the application of the technologies and familiarity with the online environment to their interactions about the CoP (Liu, 2012).

A successful OCoP possesses certain qualities and should be developed accordingly. Maloney and Konza (2011) explicated five features of a good professional learning community: “supportive and shared leadership, shared values and vision, collective learning and application of that learning, shared learning practice, and supportive conditions for the maintenance of the learning community” (p. 77). Concerning OCoPs for teacher professional learning, a supportive online learning environment with effective leadership should be created first. This, to large extent, may depend on the appropriate selection of tools or, in another word, technologies (Hanewald, 2013). Then, responsibilities must be clarified for members, in particular for facilitators, who should not only enable participating teachers for interactions but also for the establishment and maintenance of rapport among the teachers (Goodyear et al., 2014). As Hibbert and Rich point out (2006), knowledge is not borrowed from the community but is constructed through meaningful interactions with community members, informed by personal and social experience. A good relationship among members will also lead to a strong sense of community that affects the participants’ commitment (Tang & Lam, 2014). Regarding this study, while the technology (WeChat) has been demonstrated to be supportive in establishing an online learning environment for teachers to develop professional knowledge, effective leadership was in lack. Even though there was an active member (Ada) who tended to play a role of ‘leader’, the function of such an

unauthorized leadership was limited without the clarification of due responsibilities. To a large extent, the interactions in this OCoP were maintained by the relationship among the members rather than organized by the facilitator. Thus, an effective leadership could have helped better sustain the teacher group for professional learning.

Next, awareness of the teachers participating in an OCoP should be raised, in order to encourage them to engage actively in the interactions. They should be made to recognize the connection between the OCoP and their professional practice because teachers want learning to be associated with what they are doing in the classroom (Cameron et al., 2013). Last but not least, support for technological and pedagogical issues should be provided in a timely fashion. In light of this, experienced members of the community could play a key role of 'expert' to help solve the problems emerging from the novices' practices. For instance, these expert teachers could share their own experience or learning regarding how to better utilize certain affordances of a technology tool and adopt them for specific teaching and learning design, which often seems challenging for novice teachers utilizing the technology. Experts from the outside could also be invited to join the community for specialized guidance, and technological support in particular.

On top of this, great efforts should also be invested to legitimate peripheral participation (Lave & Wenger, 1991), by which junior participants become senior and ultimately old-timers of the OCoP enabled by the knowledge gained through interactions with

other members. In terms of this study, the novice user of mobile social media technologies, Fiona, tended to be a quiet member due to her lack of relevant knowledge. However, the old-timer, Ada, shared her expertise by involving others in the process of meaning making to achieve collective learning. As Bostancioglu (2018) suggests, such a process can facilitate less experienced teachers to advance their professional knowledge and skills, thus to develop professionally.

5.2 Using mobile social media to transform OCoPs into knowledge-building communities for teacher professional learning

Based on the findings of this study, a framework for utilizing mobile social media to transform OCoPs into knowledge-building communities for teacher professional learning has been proposed (see Figure 15). The framework combines the C4P model for CoP (Hoadley & Kilner, 2005) and the concepts regarding affordances of technology (Hoadley, 2012), to leverage the affordances of mobile social media technologies for the development of professional knowledge of teachers. The terms knowledge-building community and CoP are sometimes used interchangeably; or occasionally with one as a special case of the other. According to Hoadley (2012), once a knowledge-building community is up and running, it does constitute a CoP. The biggest difference between the two is “the degree to which the core practice or value of the community is a learning practice” (p. 293).

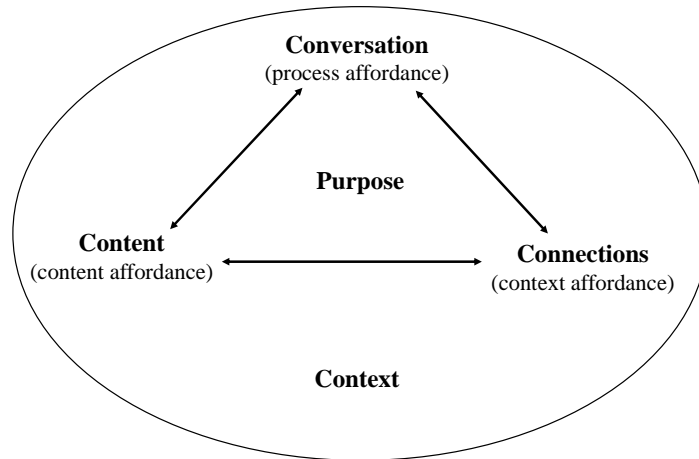


Figure 15. A framework for using mobile social media to transform OCoPs into knowledge-building communities for teacher professional learning

The content, process and context affordances of mobile social media technology can be leveraged through this framework to orient an OCoP towards a knowledge-building community for teacher professional learning. To start with, the content-generation feature of mobile social media provides flexibility and new ways to present information. For example, multimedia contents such as audio-visual artefacts can be generated and presented through mobile social media to improve the representation of content, which serves as a basis for conversations and foster connections. As observed in this study, participants uploaded artefacts in multiple forms such as documents, links and videos to the teacher group for resources sharing. These contents generated and presented with the facilitation of mobile social media are essential to building a knowledge community. Besides, the communication feature of mobile social media can be utilized to facilitate the procedures, or processes that members encounter during their community building. For instance, the synchronous communication through mobile social media can

promote the conversation between members, which may generate new content and achieve knowledge transfer. In this study, the participants used both voice messaging and text messaging of WeChat to communicate with each other in a synchronous way, and these conversations served as an effective mode of knowledge transfer and generation. Furthermore, the connectivity feature of mobile social media can be used to change the connections or social context in which the members operate, in order to facilitate more learning. These connections built through mobile social media can help maintain desirable relationships and trust between community members, which sparks conversations and adds context to content. Take this study for instance, closer relationship developed as mutual engagement in the participants increased (see Figure. 4), which enabled them to work jointly on the goal of building a learning community. In addition, the context of the community may also be improved through mobile social media. For example, some participants pushed contact cards concerned with the knowledge domain to the group (see Figure. 7), which empowered other members of the community to assess whether and how the information was relevant to them and apply the knowledge to their own situations. With such affordance of mobile social media, more external resources and experts are allowed to be brought into the community, which cannot only extend the members' learning but also cause them to reconsider their own identity or relationship to others (Hoadley & Kilner, 2005; Tseng & Kuo, 2014).

A number of factors need to be considered when adopting this framework for teacher professional learning. First, quality content generating is one of the most challenging issues that entails fine relationships among members of a community (see Fiona's suggestions). A suggestion for generating content is to repack a conversation or series of conversations about a particular topic into a new object of content (Hoadley & Kilner, 2005). Second, in order to produce meaningful knowledge other than aimless chatter, conversation should be relevant to the community's purpose. A clear sense of shared purpose fosters a culture of productive conversation, through which everyone engaged is aware that the goal of every conversation is to support the purpose (see Figure. 7). Third, connections do not occur spontaneously but can be facilitated by shared purpose, quality content and conversations. Fourth, understanding the context helps situate knowledge among people who are not physically co-located, which is of particularly importance for the building of online learning communities. When members are connected through a relationship, they gain access to context about each other's contributions to the community, and make an assessment on and application of the knowledge generated from the community to their own situations. Fifth, purpose provides the meta-connection between all the other elements and actual purpose will inhere in its content, conversations, connections, and context (Hoadley & Kilner, 2005).

6. Conclusion

This study explored how a group of higher education teachers in China used WeChat to build an OCoP that supported their professional learning regarding mobile

technology-enhanced teaching. It was noted that participating in the teacher group not only developed the teachers' relevant professional knowledge but also positively transformed their teaching practices. While the teachers showed positive attitudes towards the participation in such a learning community, different challenges were also identified such as time pressure. A framework for using mobile social media to transform OCoPs into knowledge-building communities for teacher professional learning was proposed. However, various factors need to be considered for the adoption of the framework. This study is not without limitations. First, the number of participants is relatively small and their characteristics in terms of teaching experience are not diversified enough. Future research could be conducted with larger sample size over a longer period of time to examine the effectiveness of mobile social media in building OCoPs for teacher professional learning, and to compare experienced teachers with novice teachers in depth. Second, this researcher also joined the OCoP built in this study to coordinate the participants, which to some extent might have influenced the interactions among the participants. Thus, future research could create OCoPs with effective leadership and clarified responsibilities for members. In addition, this study focused mainly on the online interactions among the participants but professional learning of teachers could be accomplished with joint efforts. In this sense, future studies could combine OCoPs with face-to-face communication to examine how technology-facilitated CoPs could be jointly used with physical meeting for teacher professional learning. Particularly, how the elements within the proposed framework

that are supported with the affordances of mobile social media interact with each other to facilitate teachers' professional knowledge development could be investigated.

Funding

This study was supported by General Projects of Humanities and Social Sciences Research Granted by the Ministry of Education, China (15YJC740130).

References:

- Ansari, M., Khan, W. A., Ahmad, R. & Suhail, M. (2012). Virtual learning communities for teachers' enrichment. *International Journal of Information Science and Education*, 2(1), 1-11.
- Bond, M. A. & Lockee, B. B. (2014). *Building virtual communities of practice for distance educators*. Springer.
- Bostancioglu, A. (2018). Online communities of practice in the service of teachers' technology professional development: The case of webheads in action. *Turkish Online Journal of Educational Technology - TOJET*, 17(2), 97-110. Retrieved from <https://search-proquest-com.eproxy.lib.hku.hk/docview/2101589006?accountid=14548>
- Chauraya, M., & Brodie, K. (2017). Learning in professional learning communities: Shifts in mathematics teachers' practices. *African Journal of Research in Mathematics, Science and Technology Education*, 21(3), 223-233.
- Chawinga, W. D. (2016). Teaching and learning 24/7 using Twitter in a university classroom: Experiences from a developing country. *E-Learning and Digital Media*, 13(1-2), 45-61.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. (4th ed.) Boston: Pearson Education.
- Day, C., & Sachs, J. (2004). *International handbook on the continuing professional development of teachers*. Maidenhead: Open University Press
- DuFour, R. (2014). Harnessing the power of PLCs. *Educational Leadership*, 71(8), 30-35.

- Ekici, D. I. (2018). Development of pre-service teachers' teaching self-efficacy beliefs through an online community of practice. *Asia Pacific Education Review, 19*(1), 27-40.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine De Gruyter.
- Goodyear, V. A., Casey, A., & Kirk, D. (2014). Tweet me, message me, like me: Using social media to facilitate pedagogical change within an emerging community of practice. *Sport, Education and Society, 19*(7), 927-943.
- Gunawardena, C. N., Hermans, M. B., Sanchez, D., Richmond, C., Bohley, M., & Tuttle, R. (2009). A theoretical framework for building online communities of practice with social networking tools. *Educational Media International, 46*(1), 3-16.
- Hajisoteriou, C., Karousiou, C., & Angelides, P. (2018). INTERACT: Building a virtual community of practice to enhance teachers' intercultural professional development. *Educational Media International, 55*(1), 15-33.
- Hanewald, R. (2013). Teachers' learning online communities of practice: two case studies from Australia. Proceedings paper at *International Conference on Educational Technologies 2013, 97-104*. Retrieved from <https://files.eric.ed.gov/fulltext/ED557178.pdf>
- Hibbert, K., Rich, S. (2006). Virtual communities of practice. In J. Weiss et al. (eds.). *The International Handbook of Virtual Learning Environments*, pp. 563-579. Dordrecht: Springer Netherlands.
- Hoadley, C. (2012). What is a community of practice and how can we support it? In Land, S. & Jonassen, D. (Ed.) *Theoretical foundations of learning environments (2nd ed.)* (pp. 287-300), London: Routledge.
- Hoadley, C., & Kilner, P. (2005). Using technology to transform communities of practice into knowledge-building communities. *ACM SIGGROUP Bulletin, 25*(1), 31-40.
- Hou, H. (2015). What makes an online community of practice work? A situated study of Chinese student teachers' perceptions of online professional learning. *Teaching and Teacher Education, 46*, 6-16.
- Khalid, F., Joyes, G., Ellison, L. & Daud, M. Y. (2014). Factors influencing teachers' level of participation in online communities. *International Education Studies, 7*(13), 23-32.

- Koliba, C., & Gajda, R. (2009). "Communities of Practice" as an analytical construct: implications for theory and practice. *International Journal of Public Administration*, 32(2), 97-135.
- Krippendorff, K. (2013). *Content analysis: An introduction to its methodology*. (3rd ed). Thousand Oaks, California: Sage Publications.
- Lave, J. and Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*, New York: Cambridge University Press.
- Liu, K. Yan. (2012). A design framework for online teacher professional development communities. *Asia Pacific Education Review*, 13(4), 701-711.
- Luo, H. & Yang, C. (2016). Using WeChat in teaching L2 Chinese: An exploratory study. *Journal of Technology and Chinese Language Teaching*, 7(2), 82-96.
- Maloney, C., & Konza, D. (2011). A case study of teachers' professional learning: Becoming a community of professional learning or not? *Issues in Educational Research*, 21(1), 75-87.
- Manca, S., & Ranieri, M. (2016). Is Facebook still a suitable technology-enhanced learning environment? An updated critical review of the literature from 2012 to 2015. *Journal of Computer Assisted Learning*, 32(6), 503-528.
- Menkhoff, T., Chay, Y. W., Bengtsson, M. L., Woodard, C. J. & Gan, B. (2015). Incorporating microblogging ("tweeting") in higher education: Lessons learnt in a knowledge management course. *Computers in Human Behavior*, 51, 1295-1302.
- Menzies, R., Petrie, K., & Zarb, M. (2017). A case study of Facebook use: Outlining a multi-layer strategy for higher education. *Education and Information Technologies*, 22(1), 39-53.
- McConnell, T. J., Parker, J. M., Eberhardt, J., Koehler, M. J., & Lundeberg, M. A. (2013). Virtual professional learning communities: Teachers' perceptions of virtual versus face-to-face professional development. *Journal of Science Education and Technology*, 22(3), 267-277.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. (2nd ed). San Francisco: Jossey-Bass Publisher.
- Penfold, P. (2010). Virtual communities of practice: collaborative learning and knowledge management. *The Third International Conference on Knowledge Discovery and Data Mining*. IEEE Xplore, 482-485.

- Prestridge, S. (2019). Categorising teachers' use of social media for their professional learning: A self-generating professional learning paradigm. *Computers & Education, 129*, 143-158.
- Prestridge, S., & Main, K. (2018). Teachers as drivers of their professional learning through design teams, communities, and networks. In J. Voogt, G. Knezek, R. Christensen, & K. W. Lai (Eds.), *Second handbook of information technology in primary and secondary education* (pp. 1401). New York: Springer International Publishing.
- Özdemir, Emrah. (2017). Promoting EFL learners' intercultural communication effectiveness: A focus on Facebook. *Computer Assisted Language Learning, 30*(6), 510-528.
- Price, D, Lemoine, C, South, N. & Hossain, R. (2018). First year nursing students use of social media within education: Results of a survey. *Nurse Education Today, 61*, 70-76.
- Qi, G. Y., & Wang, Y. (2018). Investigating the building of a WeChat-based community of practice for language teachers' professional development. *Innovation in Language Learning and Teaching, 12*(1), 72-88.
- Ricoy, María-Carmen, & Feliz, T. (2016). Twitter as a learning community in higher education. *Educational Technology & Society, 19*(1), 237-248.
- Shaffer, C., & Amundsen, K. (1993). *Creating community anywhere: Finding support and connection in a fragmented world*. New York: Tarcher/Perigee Books.
- Sharma, S. K., Joshi, A, & Sharma, H. (2016). A multi-analytical approach to predict the Facebook usage in higher education. *Computers in Human Behavior, 55*, 340-353.
- Smith, S. U., Hayes, S., & Shea, P. (2017). A critical review of the use of Wenger's community of practice (CoP) theoretical framework in online and blended learning research, 2000-2014. *Online learning, 21*(1), 209-237. Retrieved from <https://search-proquest-com.eproxy.lib.hku.hk/docview/1913351775?accountid=14548>
- Snyder, W. M., Wenger, E., & de Sousa Briggs, X. (2003). Communities of practice in government: leveraging knowledge for performance; Learn how this evolving tool for cross-organizational collaboration currently is being used in a variety of public sector setting and how it can help you cultivate improved performance outcomes in your backyard. *The Public Manager, 32*(4), 17-22.

- Statista, (2016). *Monthly active users of selected social networks and messaging services*. Retrieved from <https://www.statista.com/chart/5194/active-users-of-social-networks-and-messaging-services>
- Sun, Y. & Yang, F. (2015). I Help, therefore, I Learn: Service learning on Web 2.0 in an EFL speaking class. *Computer Assisted Language Learning: An International Journal*, 28(3), 202-219.
- Tang, & Chung. (2016). A study of non-native discourse in an online community of practice (CoP) for teacher education. *Learning, culture and social interaction*, 8, 48-60.
- Tang, E. & Lam, C. (2014). Building an effective online learning community (OLC) in blog-based teaching portfolios. *The Internet and Higher Education*, 20, 79-85.
- Thang, S. M., Hall, C., Murugaiah, P., & Azman, H. (2011). Creating and maintaining online communities of practice in Malaysian smart schools: Challenging realities. *Educational Action Research*, 19(1), 87-105.
- Tseng, F. C & Kuo, F. Y. (2014). A study of social participation and knowledge sharing in the teachers' online professional community of practice. *Computers & Education*, 72(C), 37-47.
- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, 24(1), 80-91.
- Wang, Q. & Lu, Z. (2012). A case study of using an online community of practice for teachers' professional development at a secondary school in China, *Learning, Media and Technology*, 37 (4), 429-446,
- WeChat Data Report 2017. Retrieved from <http://blog.wechat.com/2017/11/09/the-2017-wechat-data-report>
- Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge: Cambridge University Press.
- Wenger, E. (2004). Communities of practice and social learning systems. In K. Starkey, S. Tempest, & A. McKinlay (Eds.), *How organizations learn: Managing the search for knowledge*, Second ed. (pp. 238–258) London: Thomson.

- Wenger, E. (2010). Communities of practice and social learning systems: The career of a concept. In C. Blackmore (Ed.), *Social learning systems and communities of practice* (pp. 179–198). London: Springer.
- Wenger, E., McDermott, R., & Snyder, W.M. (2002). *Cultivating communities of practice. A guide to managing knowledge*. Cambridge, MA: Harvard Business School Press.
- Wesely, P. (2013). Investigating the Community of Practice of World Language Educators on Twitter. *Journal of Teacher Education*, 64(4), 305-318.
- Xue, S. & Churchill, D. (2019). A review of empirical studies of affordances and development of a framework for educational application of mobile social media. *Educational Technology Research & Development*. 67(5), 1231-1257
- Zandi, P. Thang, S. M. & Krish, P. (2014). Teacher professional development through blogging: Some preliminary findings. *Procedia - Social and Behavioral Sciences*, 118(C), 530-536.
- Zeng, F., Deng, G., Wang, Z., & Liu, L. (2016). WeChat: A new clinical teaching tool for problem-based learning. *International Journal of Medical Education*, 7, 119-21.