A study of social participation and knowledge sharing in the teachers' online professional community of practice

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ABSTRACT

To facilitate professional development of teachers in the online context, the online community of practice (CoPs) has become an important platform in which individuals with similar interests or common goals get together to share their resources, develop working strategies, solve problems, and improve individual as well as organizational performance. In this study, we have collected self-reported knowledge-sharing behaviors from 321 members of the largest online professional CoP of teachers in Taiwan. The results show that closer connections among online CoP members can lead to greater recognition of and altruism towards others. Moreover, performance expectation and self-efficacy belief play essential roles in knowledge-sharing participation. Thus, the development of social relationships among online teacher members helps them obtain potential resources and reliable support through their social network. Also, teachers' membership in the online professional CoP fosters a prosocial attitude that heightens their willingness to share useful resources and solve other members' problems, both emotionally and instrumentally. Consequently, knowledge-sharing behaviors, in terms of knowledge giving and knowing receiving, are significantly predicted by prosocial commitment and performance expectation respectively. The implications to both research and practice are provided in this paper.

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1. Introduction

Teacher empowerment has been a critical issue for teachers to update their domain knowledge and expand teaching skills in order to continue to work effectively with students' learning (Cochran-Smith & Lytle, 1999; Kao & Tsai, 2009; McLaughlin, 2002). A variety of ways have been employed to empower teachers. For example, one of the most frequently employed is to hire outside experts to inform teachers of possible best practices or up-to-date pedagogical knowledge. Yet, depending on outside experts who have little knowledge about local conditions may render teachers to become passive and isolated learners (Hur, Brush, & Bonk, 2012). Alternatively, teachers may prefer developing teaching skills that work best for them in their individual classroom, which unfortunately leads to cultures of knowledge hoarding and fortifying the boundaries between classrooms and teachers (Carroll et al., 2003). More recently, a growing number of information and technologies (ICTs) have been implemented for teachers' greater teaching efficiency in the classroom (Lee, Wu, Michko, & Lin, 2013; Türel & Johnson, 2012) as well as engagement in professional growth (Ottenbreit-Leftwich et al., 2012; Ottenbreit-Leftwich, Glazewski, Newby, & Ertmer, 2010). Among various ICTs for education, online communities of practices (CoPs) have become a critical approach for teachers to advancing their pedagogical knowledge and teaching skills (Ferrell, Fraedrich, & Ferrell, 2008; Gairin-Sallan, Rodriguez-Gomez, & Armengol-Asparo, 2010; McKnight, Choudhury, & Kacmar, 2002). A CoP refers to 'a set of relations among persons, activity and world' in which people are bound together by shared expertise and passion for a joint enterprise or goal (Wenger & Snyder, 2000). Studies have shown that the online CoPs can help raise teacher-practitioners' competence levels, reinforce their professional practice, and satisfy the need of professional development as well as students' academic achievement (Clarke, 2009; Meneses, Fabregues, Rodriguez-Gomez, & Ion, 2012; Zahner, 2002).

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To develop effective online professional CoPs, several scholars have cautioned against "Technology Determinism" that assumes the ICT will by itself generate knowledge, or that it will be able to entirely substitute for traditional face-to-face interaction (Dixon, 2000; Pfeffer & Sutton, 1999). An ICT-based system should not be confined only to the advantages of technology functionality, since it has to be used by individuals or groups in certain contexts (Bagozzi, 2007). Indeed, the formation and application of knowledge is embedded in people's everyday practices, which involve a state of knowing and understanding as well as a process rooted in relationships among members (Alavi & Leidner, 2001). Wenger (1998) as well as Kang et al. (2010) both argue that in online professional CoP, social participation ought to be placed at the center of learning process that promotes interactions among individuals and that directly improve members' negotiation, communication, and coordination with one another. In fact, social participation is useful to enhance communication among peers, encourage them to seek solutions, provide assistance to overcome obstacles in the professional arena, and eventually foster the creation and dissemination of collective intelligence (Gorman & Fischer, 2009). Fischer (2011) therefore advocates the use of ICT to foster 'cultures of participation' in which members are supported by not only the technical design at different levels of participation but also the social capital and cognitive factors like connectedness, trust, empathy, altruism, and reciprocity among social members. As a result, social participation is critical for CoP members to share knowledge, which is not an objective, retreating and individual phenomenon (Alavi, Kayworth, & Leidner, 2005–6) but embedded in the close connection among individuals, environment and technology that are constantly under the influence of social background, system regulations, and interpersonal interactions (Miranda & Saunders, 2003; Thomas, Sussman, & Henderson, 2001; Wasko & Faraj, 2000).

Previously, several studies have identified the influence on teachers' professional learning and development through their cognition, value, attitude and self-efficacy in relation to ICT implementation (e.g., Grainger & Tolhurst, 2005; Gu, Zhang, Lin, & Song, 2009; Lee & Lee, 2008; Lin, Lin, & Huang, 2008; Manouselis, Vuorikari, & Assche, 2010). Online CoPs are effective in facilitating members to become aware of their common concerns or interests and to raise their sense of belonging and construction of professional identity (Guldberg & Pilkington, 2006; Ryberg & Larsen, 2008). However, there is little empirical research focusing on issues of social participation and examining the regulatory relationships between teachers' relational ties and cognition with regard to knowledge sharing in the online professional context. Drawn upon the Social Capital Theory and Social Cognitive Theory, this study aims to explore the elements of social participation in online knowledge sharing practice. The effectiveness of social participation is also examined on both knowledge-giving and knowledge-receiving behaviors. Accordingly, our study identifies the following research questions:

1. What social capital factors are critical to knowledge sharing in the teachers' online professional CoP?
2. What social cognitive factors are critical to knowledge sharing in the teachers' online professional CoP?
3. How may social capital factors and social cognitive factors influence each other?
4. How may social capital factors and social cognitive factors influence online CoP members' knowledge sharing activities?

2. Literature review

2.1. Tie strength to the bond of social participation

Tie strength, a multidimensional variable, represents the strength of interpersonal relationships in the aspects of closeness, intimacy, and support, with a voluntary investment in the social relation and companionship with other members (Brown, Broderick, & Lee, 2007). Granovetter (1973) initially distinguishes strong ties from weak ties according to the length of contact frequency, reciprocity, and friendship. Nevertheless, several later researchers have suggested that it is not a critical issue to classify ties based on the strength but "on very different meanings such as acquaintance, friendships or a shared interest" (Brown & Reingen, 1987; Ryberg & Larsen, 2008). It is therefore not necessary to dichotomize the interpersonal tie into strong or weak, but assess it as a continuous variable attached to the degree of social relation.

Tie strength is an important factor in knowledge sharing in the online professional CoPs because it facilitates the building of trust, support, and reciprocity among members. According to social capital theory, the formation and maintenance of social relations help individuals acquire the power to obtain available resources through their identity as members of the social network (Bourdieu & Passeron, 1977; Portes, 1995, 1998). Sensitive, complicated, and rapidly-changing information flows more smoothly among members with strong ties to boost the achievement of tasks and performance (Hansen, Nohria, & Tierney, 1999). Mutual experiences, goal-setting, resource exchange, and emotional support among social members can invoke creativity and learning efficiency, as well as boost the production and application of intellectual capital (Nahapiet & Ghoshal, 1998). In the context of online collaboration, Best and Krueger (2006) suggest that Internet may promote weak ties and subsequently increase generalized trust, integrity, and reciprocity. Similarly, Williams (2006) indicate that online bridging should have positive correlations with behavior like finding information outside one's daily routine, while online bonding should also be positively correlated with feeling of closeness, trust, support, and community. In addition to online interaction, Matzat (2013) argues that higher integration of offline contacts among teacher members reflects more embeddedness of the online professional community. As a result, more discussion, sharing, and support significantly contribute to teachers' professional development through common interests or motivations.

2.2. Prosocial commitment as a collective force to share knowledge

According to social capital theory, an individual's willingness to voluntarily help, share, donate, and cooperate in groups, reflecting the relational dimension of social capital (Bourdieu, 1983; Lin, 2001), can foster their prosocial actions to benefit other people or achieving shared objectives. The prosociality is basically derived from the altruistic motives – the moral concerns and affective functioning to express their empathy about the welfare and rights of others with less egoistic aspiration or threatening behavior (Trötschel & Gollwitzer, 2007; Wentzel, Filisetti, & Looney, 2007). In addition to altruistic motives, egoistic motives also serve as critical factors to influence individual prosocial behavior (Cho, Chen, & Chung, 2010; Sproull, Conley, & Moon, 2013; Wagner & Prasarnphanich, 2007). Individuals may try to