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Impacts of role assignment and participation in asynchronous discussions in college-level online classes

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ABSTRACT

In this study, 57 participants from an online course participated in online learning activities facilitated by assigned moderators. Social network analysis techniques were utilized to examine the influence of moderator role assignment on social networks of online classes. The results indicated when students were assigned to the moderator position their participation quantity, diversity, and interaction attractiveness increased significantly and their non-posting participation significantly influenced the group interaction. Students' participation quantity and diversity also significantly influenced their interaction attractiveness. Qualitative findings revealed moderation characteristics of the highest density and lowest density groups.

1. Introduction

Asynchronous online discussion not only enables learning-oriented communications, but also allows learners to connect and build social relations within a learning community (Xie, Miller, & Allison, 2013). Results from existing literature indicate that providing students with structured tasks and peer moderation are crucial to achieving effective and meaningful learning through online discussion activities (e.g., Choi, Land, & Turgeon, 2005; Coll, France, & Taylor, 2005). Zha and Ottendorfer (2011) suggested that students in small groups can be appointed to different social roles to stimulate discussions and/or to solve problems related to the course content; for example, one or several students in a group may be appointed as moderators to lead group online discussions while other students in that group may play non-leadership roles. Peer moderation has become a popular strategy to facilitate successful online discussions (Rovai, 2007). Research has documented that peer moderation is effective in supporting cognitive development (e.g., Tagg, 1994) and entails beneficial effects on students' attitudes and motivation in online discussions (e.g., Xie, DeBacker, & Ferguson, 2006). Yet little research has investigated whether role assignment influences moderators' participation in online discussion including their participation quantity and diversity, and whether assigned moderators can influence the group interaction in terms of group participation quantity and communication cohesiveness. The impacts of role assignment and the participation of moderators on group learning interaction warrant investigation (Micari, Streitwieser, & Light, 2006). Such investigations may provide online teachers and instructional designers with a better understanding of the impact of assigned discussion moderator in collaborative learning, and characteristics of participation quantity and diversity in peer-moderated online discussions. The present study examined whether the role assignment of discussion moderators impacted students' own online participation in online discussions, and that of their peers.

2. Literature review

2.1. Peer-moderated asynchronous online discussions

Economic advantages of peer moderation in asynchronous discussions for online learning have been reported by several researchers (e.g., Bloxom, Caul, Fristoe, & Thomson, 1975; De Volder, Grave, & Gijselaers, 1985). More compelling from a pedagogical standpoint, peer moderation in online learning has affective and cognitive benefits (Rourke & Anderson, 2002), mainly in terms of the influence of peer-moderated online discussions on students' attitudes and motivation (e.g., Xie et al., 2006), perceptions of learning (e.g., Zha & Ottendorfer, 2011), and learning participation, engagement, and achievement (e.g., Xie, 2013). For example, Leh (2002) noted that when peer moderators facilitated online discussions, students felt that their conversations became more active. Harrington and Hathaway (1994) reasoned that peer facilitators would remove power imbalances in discussions, encourage freedom of expression, and give students the feeling that they owned the discussions. Seo (2007) concludes that peer moderation can help students achieve their instructional goals more effectively by

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providing them with guidance for sharing ideas in a constructive and meaningful way.

The functions of moderators have been previously conceptualized in many ways, for example, motivating, providing support, and stimulating (Collett, Kerr, & Watter, 1988), guiding the topic in order to keep it on the right track (Feenberg, 1987), facilitating discussion (Quinn, Mehan, Levin, & Black, 1983), providing strong leadership (Johansen, Vallee, & Palmer, 1976), and coaching students on communication skills (Harasin, 1987). For this study peer moderators are conceptualized as those assigned as discussion leaders to initiate and lead online discussions by encouraging and facilitating online communication and interaction to achieve desired learning objectives. They design the discussion questions, prompt student peers for discussion participation, monitor discussions and provide feedback, and manage and resolve conflicts.

Xie and Ke (2011) studied the relationships between moderation and peers' online learning interaction and discovered positive correlations between moderator and peer interactions on knowledge construction and self-reflection of learning. They also suggested that various moderation patterns might lead to variations in participation quantity and quality. Drawing upon leadership research, we may infer that assigned moderators may influence online discussion groups mainly through their interactions with the group. Walvoord, Redden, Elliott, and Coovert (2008) stressed, "nothing is more important to a leader than the skills involved in communicating one's intent to followers" (p. 1884). For groups interacting in virtual space, group leaders may facilitate the establishment of efficient communication practices and have the power to encourage group members to move information exchanges forward between group members (Cascio & Shurygailo, 2002). Huffaker (2010) suggested online leaders influence others through features including high communication activity, credibility, network centrality, and so forth. Zha and Ottendorfer (2011) have concluded that every student in class should have opportunities to take the leadership role in discussion activities.

2.2. Participation quantity and diversity

In the context of peer-moderated online learning, both moderators' and student peers' communication in asynchronous online discussions (AOD) involves both quantity of postings and diversity of communication partners. Participation quantity can be measured in terms of both posting participation and non-posting participation. Posting participation leaves visible records (i.e., the posted discussion messages) in an AOD system (Cheung, Hew, & Ling-Ng, 2008). Posting participation is often influenced by course requirements and can be better perceived and valued by other class members (Beaudoin, 2002). In contrast, and often overlooked, is non-posting participation, which includes students logging into the discussion system to just read — an activity that tends to be unmeasured and is often invisible (Dennen, 2008). Non-posting participation, often not solicited as a course requirement, is more voluntary in nature and may better represent students' intrinsic motivation to engage online learning activities (Xie, 2013). Both posting and non-posting participation should be used as quantity indicators of students' online learning engagement. High quantities of interaction by way of both posting and non-posting participation are often desired in collaborative learning activities being facilitated through asynchronous online discussions.

Besides participation quantity, students' participation diversity, the extent to which students engage in social interactions with a diverse range of other peers, also deserves attention. Diversity of interactions is an important underlying consideration in the development of a healthy and supportive community of learners. It stands to reason that the greater the variety of individuals the students interact with, the more likely they are to encounter information and ideas that are different from their own, creating cognitive conflicts and promoting learning. Although participation diversity in online discussions has not been well studied in online learning research, the issue of access to a diversity of individuals and resources is central to a constructivist pedagogical approach, as are the concepts of multiple perspectives and distributed cognition. Consulting multiple perspectives provides learners with fuller understanding of the subject of inquiry as learners engage and attempt to reconcile diverse sources and perspectives. Distributed cognition (e.g., Salomon, 1997) holds that valuable information and insights are discoverable throughout the learning community, rather than existing completely within a single individual or source. Thus, in a supportive and healthy online learning community, one would reasonably expect to find both a high quantity of interactions overall, and a high level of diversity in communication partners throughout the group.

2.3. Group cohesiveness

The combined quantity and diversity of interactions within the group may provide an indication of the group's cohesion. Cohesion can be referred as "a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron, Brawley, & Widmeyer, 1998, p. 213). Online learning contexts ideally involve a high level of interdependence from and among both individuals and groups, and among the types of tasks involved. In a peer-moderated online learning discussion forum, factors of cohesion related to both task and social/affective considerations are salient; Well-developed online learning curricula are intentionally designed to address cognitive purposes, such as learning new content, and also to address affective needs, such as supporting development of social presence and providing social support in order to reduce perceived transactional distance. "Members of a group with high cohesiveness could be said to have established a sense of community; likewise, those who have developed a community demonstrate a high level of group cohesiveness" (Baker & Woods, 2004, p. 144).

Group cohesiveness and interaction have been shown to be strongly related to team effectiveness in online learning settings (Arbaugh, 2005; Hwang & Arbaugh, 2006; Williams, Duray, & Reddy, 2006; Yoo, Kanawattanachai, & Citurs, 2002), and Garrison and Arbaugh (2007) have asserted that "creating a climate for open communication and building group cohesion are essential for productive inquiry" (p. 168). In their meta-analysis of 66 studies exploring the relationship between cohesion and performance, Mullen and Copper (1994) found 92% reported a positive cohesiveness-performance effect (p. 216). Gully, Devine, and Whitney (1995) also found a correlation between cohesiveness and performance, and went further to find that task interdependence strongly affects the cohesion-performance relationship: "When the demands of the task necessitate coordination, communication, and mutual performance monitoring among group members, cohesion and performance are more strongly related than when task interdependence is low" (p. 513–514).

Group cohesiveness is an important consideration in online learning contexts, however the term should be clearly defined in the particular contexts in which it is referenced. In quantitative terms, cohesiveness can be inferred in online discussion threads from a high quantity of communications among group members, both in total number of posts, and in diversity and reciprocation of communication partners. In other words, quantitatively, a cohesive group could be expected to have a greater number of connections over all (communication quantity), a diversity of connections to and from each individual (communication diversity), and multiple reciprocal communications with other individuals in the group (communication density). Qualitative analyses, on the other hand, can help in identifying specific interactions that support cognitive and affective needs.

2.4. Interaction attractiveness in online discussions

In online discussions there often are individuals who attract more incoming interactions and are more popular in the class. Understanding