

Understanding Online Knowledge Sharing: An Exploratory Theoretical Framework

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Abstract. Online learning has been getting popular in higher education. Key functionalities of online learning environment include the access to a wider perspective of learning resources and the provision of social interactions between instructor-learners and among learners-learners. Recent empirical findings in online learning have acknowledged the importance of online knowledge sharing as an integral part of online learning, through the various forms of learner interactions within online learning environment, such as discussion forums, collaborative learning and communities building. However, recent studies still find mixed results that instructors and students are not always fully engaged in online learning activities. Without frequent and persistent interactions, it is doubtful whether online knowledge sharing could really take place in online learning environment. Thus, the present study examines prior literature to explore the motivational factors to online knowledge sharing. It is found that perceived online attachment motivation and perceived online relationship commitment are two determinants to online knowledge sharing. As a result of the literature review, theoretical propositions are developed to explain online knowledge sharing. Discussion section explains the theoretical and practical implications.

Keywords: Online knowledge sharing, motivation, perceived online attachment motivation, perceived online relationship commitment.

1 Introduction

With the recent rapid development in information technology and in the access to the Internet, online learning is getting popular in higher education [e.g., 1, 2, 3]. Within online learning environments, one of the key aspects is to provide a wider perspective of social dimension in learning [e.g., 4, 5, 6]. Online learning environment has become a shared common meeting place for online learners. Online learning environments are also places for online learners to meet and to interact. Online knowledge sharing through these informal social interactions among the online learners facilitates the learning processes.

However, a review of prior studies reveals several problems. Empirical study indicates that students are “reluctant to consider being taught via the Internet” [7]. It is not uncommon to find that, in some cases, the participation is fairly poor [8]. Moreover, empirical studies reveal that students experience isolation, loneliness, anxiety, distress and low sense of community while using online learning environment [e.g., 9, 10, 11]. More research is needed to inform system designers of improving the functionalities and interface designs, or to inform administrators to devise better implementation strategies in online learning environments. Theoretically, there is still a gap in research to provide a better understanding of online knowledge sharing through the use of online learning environments. To echo this, recent studies still call for a change in the way in exploring the problems and the solutions to sustaining online learning, for example, to include a wider social perspective than the technology itself [12-14].

Thus, the aim of the present study is to review relevant literature in order to understand the motivation to online knowledge sharing. As a consequence, the results of the study would provide insights to academics to the understanding of online participation and to inform practitioners to the design and implementation of online learning environments.

2 Literature Review

2.1 Online Knowledge Sharing

Knowledge sharing is an integral part of learning. Vygotsky suggests that through interactions with others, learners acquire new concepts and strategies [15]. Meanings and interpretations are initiated through social interactions. In the knowledge sharing process among learners, Roschelle suggests that it is “the process of mutually contributing to shared knowledge” and it is about “democratic participation, intellectual progress, and gradual convergence” to undergo conceptual change” [16].

Firstly, online learning environments facilitate learners to work collaboratively, regardless of the time or geographical location of the learners. Specifically, online learning environment facilitates collaborative tasks that, for example, online learners are formed into small groups, given with the common goals to engage them into meaningful discussions in problem-solving tasks [17]. In completing collaborative tasks, online learners share different point of views and develop solutions from the different viewpoints [18]. Each online learner spends time to explain his/her ideas and experiences that widen the scope and perspective of each learner in interpreting a problem. Therefore, online learners help each other and learn from each other. Prior studies suggest that a sense of belonging would be a pre-requisite for the success of collaborative learning. For instance, the development of a sense of belonging increases social interactions beyond the content-learner limit [19]; participants can relate to one another and share a sense of community and a common goal [20]. Hiltz et al. find strong correlations between the degree of collaborative learning in an asynchronous learning network (ALN) course and the learning outcomes [21].

Secondly, online learning environments foster the building and sustaining of learners’ community. The sense of belonging refer to “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a

shared faith that members' needs will be met through their commitment to be together" [22] while the building of learners' community will create a sense of belonging, identity, emotional connection and well-being [23]. A strong sense of belonging will increase "the flow of information, the availability of support, commitment to group goals, cooperation among members, and satisfaction with group efforts" [24]. People who have a strong sense of community are described as better adjusted, feeling supported, having stronger levels of social support and social connectedness [25]. Haines, Hurlbert and Beggs suggest that this sense of belonging creates a trust community that is "more likely to provide support to others" [26]. With a strong sense of belonging, there would probably be a larger pool of more willing individual learners being ready to provide support when in need [27]. On the other hand, if such a sense of belonging does not exist, prior studies find that online learners may feel isolated and are likely to be unwilling to take the risks involved in learning [28].

In this review, online knowledge sharing is defined as "the online communication of knowledge so that knowledge is learned and applied by a learner in an online learning environment" [29]. With respect to this definition, communication of knowledge should take place in an online learning environment, the learner should understand and learn from the knowledge, and the learner is able to apply the knowledge. Online learning environment is defined as "learning environments that are allowing interactions and encounters with other participants and providing access to a wide range of resources via the Internet" [4].

2.2 Perceived Online Attachment Motivation (POAM)

First, the need to belong is argued as an innate drive to human beings. When online learners appear in online learning environment, the need to belong drives online learners to have social contact. An online learner has social interactions with other online learners. Second, being accepted is the beginning step to social interactions. If online learners receive positive feedback from their peers, they develop and form new relationships. Through ongoing, frequent and regular social interactions, they develop good relationships, receive positive feedback and have trust in the relationship. Under these circumstances, online learners create a strong sense of belonging. They are attached to both the online learning environment and their peers. They are committed and willing to contribute and share ideas, experience and knowledge, and they value each other. As a result, online learners have high level of satisfaction and learning motivation. Third, there may be chance of not being accepted, ignored, excluded or rejected. Online learners try to but receive no feedback from others. They have minimal social interactions with one another and have a low sense of belonging to the online learning environment. They cannot develop positive and trusted relationships with other online learners. They avoid the online learning environment and escape from active engagement in the online learning environment, thereby not having much online knowledge sharing.

People will not be satisfied with mere interactions, for example, with strangers or with others one dislikes. Weiss (1973) suggests that feelings of loneliness may either be caused by an insufficient amount of social contact (social loneliness) or by a lack of meaningful and intimate relatedness (emotional loneliness) [30, 31]. The need to belong is for regular social contact with those to whom one feels connected [32].

Accordingly, the need to belong should be marked by both aspects. Moreover, there is satiation effect of forming relationships, that is, there would be a diminishing effect for satisfaction with an additional relationship. People form relationships but will stop forming new ones when they have enough.

Individual differences mediate the processes in social interaction and communion with others. For example, people with higher attachment motivation (secure attachment style) have higher levels of self-esteem and self-confidence [33]. On the other hand, shy and anxious individuals find it more difficult to form social bonds. They are frequently less liked and accepted by others when they interact offline [34].

Recent studies find that deindividuation (i.e., people mainly use written communication with anonymity and a lack of physicality) online for socially excluded individuals produces more positive outcomes in forming and maintaining interpersonal relationships instead [12, 35-37]. It is found that the Internet attenuates social anxiety and insecurities [37]. Shy and anxious individuals were found to have more positive outcomes when communicating online. They are perceived to be equal or more outgoing, more confident, less shy, less anxious and less uncomfortable when communicating via the Internet [35].

Hill [38] suggests that motivation for social contact can be considered as “a central influence on human behavior”. Similarly, Nikitin & Freund [39] argue that social affiliation appears to be a central human need. Attachment theory conceptualizes “the propensity of human beings to make strong affection bonds to particular others” [40]. People motivated to keep attachments with others feel safe with each other [41]. That explains why people are very active in seeking support from their social networks. Echoed to all these, Baumeister and Leary refer to that “human beings have a pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships” and hypothesize the human need to belong [32].

In this study, Perceived Online Attachment Motivation (POAM) is defined as “the degree to which an individual believes that he or she can improve his or her social interaction and the sense of communion with others in an online learning environment” [42]. With respect to this definition, an online learner is able to form new relationships with other peer learners in an online learning environment so that the learner feels as part of the communion with the online learning environment. However, the degree to which the online learning environment facilitates the forming of new relationships varies from one to another. A learner may perceive a difference in the degree to which an online learning environment could facilitate the forming of new relationships among peer learners.

2.3 Perceived Online Relationship Commitment (PORC)

According to the evolutionary selection mechanism, people are reinforced with the feeling of positive affect when forming social relationships while people are distressed and have negative affect when broken, threatened, or rejected from relationships. Therefore, at all times, people learn not to break relationships as final broken relationship is associated with distress and negative affect. According to the need to belong theory, an individual is satisfied only if there are both frequent and regular social interactions and the existence of a secured and trusted social bond. If either one

is missing, the need to belong cannot be satisfied. Therefore, an individual must have an established relationship and intend to persist in the established relationship.

Commitment has been described in diverse ways in various contexts [43]. Meyer and Allen relate commitment to individual's desires, needs and feelings of obligation to remain in the organization, community or a relationship [44]. Commitment has been investigated in general social system, such as a community [45] or friendships [46]. Prior studies examine commitment to close relationship between dates, couples, parents and children, and husbands and wives [47, 48]. Studies also find that people's commitment extends to family, friends and relatives [49].

According to the need to belong theory, to satisfy the need to belong does not refer to a particular relationship or a particular partner. That is, the need to belong can, in principle, be directed toward any other human being, and the loss of relationship with one person can be replaced to some extent by any other. This is partly echoed by the construct, "quality of alternative", as in the Investment Model [50]. The commitment level depends on whether there is a substitute for the established relationship. That is, if there is a choice, online learner may evaluate and assess in order to make up the mind to decide whether he/she wants to persist in the established relationship. That is, the presence of substitute may affect the commitment level.

Relationship commitment reflects an individual's internal representation of dependence on an established relationship. This relationship commitment is long-term in nature and is a psychological attachment to the relationship [48]. Relationship commitment suggests that "an individual's intrinsic motivation to persist in a relationship" [47].

In this study, PORC refers to "the degree to which a learner tends to continue with an established relationship in an online learning environment" [50]. It is about an online learner having an established relationship with any other peer online learners using the online learning environment. It is about the commitment of online learners to maintain the relationship. Because of the commitment, online learners are willing to be good to the relationship partners, to spend time and effort to maintain the established relationship in the online learning environment. This commitment can pass through ups and downs. Even at times the relationship is not in good condition, online learners are willing to maintain the relationship, for the benefit of the relationship partners. Some online learning environments facilitate online learners to maintain the established relationship while others do not. PORC is about how online learners would assess each online learning environment in terms of the extent in which it could help them to maintain established relationships there. People often cite the possibility of receiving social support, if and when needed, as one of the major benefits of close relationships [51].

3 Summary

Based on the foregoing literature review, it can be argued that knowledge sharing through participation and social interaction is an important facilitator of knowledge acquisition, and an integral part of online learning. However, the key issue of why learners participate and interact in online learning activities has not been clearly explained in previous studies. A search of prior literature suggests that the theory of the

need to belong may explain the motivation for participating and interacting in online learning environment through the mechanisms of POAM (to form social bonds) and PORC (to maintain those bonds). Thus, based on the prior literature reviewed, the following propositions are suggested:

1. POAM is hypothesized to have direct and significant relationships toward Online Knowledge Sharing (online knowledge sharing). That is, the more an individual learner perceives that an online learning environment will enhance his/her online attachment motivation (i.e., to have social interactions and communion with other online learners), he/she will have more online knowledge sharing in the online learning environment.
2. PORC is hypothesized to have direct and significant relationships toward online knowledge sharing. Similar to POAM, the more an individual learner perceives that an online learning environment will enhance his/her online relationship commitment (i.e., to persist in the established relationship with other online learners), he/she will have more online knowledge sharing in the online learning environment.
3. PORC is hypothesized to have direct and significant relationship with Perceived Online Attachment Motivation POAM. Online learners have the basic needs to belong and would have a need for social interaction and communion with other online learners. The presence of the need to persist in the established relationship will strengthen the need for social interactions among the online learners.

4 Discussion

The aim of the present study is to understand online knowledge sharing through the review of prior theoretical and empirical studies. Based on prior literature, the present review proposes that POAM and PORC are two determinants in explaining online knowledge sharing.

The present study makes several unique contributions to the literature. First, from a review of prior theoretical and empirical studies, it identifies two constructs: POAM and PORC, as the fundamental needs of learners in using online learning environment. This is to echo the calls for a wider social perspective to explain online users' behavior. This provides additional insights to explain the inconsistent learners' behavior in engaging or participating in online learning activities. This is the first study which includes both constructs to explain online knowledge sharing. Based on this review, future studies could operationalize the two constructs in order to measure online knowledge sharing of specific online learning environments. System designers will obtain significant design guidance well before significant investment is placed. Second, based on this review, further studies could investigate and extend to include other factors in order to find out its boundary limits in explaining the phenomena. Prior studies have found factors which affect online participation, for example, gender, experience and familiarity in online learning environment, and prior subject knowledge. Their effects on online knowledge sharing would provide additional insights for both academics and practitioners in the field.

In hindsight, the findings make sense conceptually: learners who have a need to belong would pay more time and effort to log on and stay in the online learning environment. They have a desire to interact with other learners there. Through the social

interaction and information/knowledge exchange among the users, as theorized by Vygotsky [15], knowledge is shared among the learners in the common meeting place. Learners reported that through the interaction with other learners using the online learning environment, they understand the subject better and they are able to apply their knowledge. That explains why POAM predicts online knowledge sharing as proposed.

At the same time, learners form relationships within the online learning environment and develop social bonds with other learners there. According to the theory of the need to belong, both cognitive activities and emotional reactions of people would pertain to relationships as negative affect would result when relationships are broken, threatened or refused [32]. That also explains why POAM predicts online knowledge sharing.

Both POAM (the desire for social contact) and PORC (the desire to pertain a relationship) reflect the definition of the theory of the need to belong which includes both the forming and the maintaining of relationships components. As theorized, the conditions to satisfy the need to belong should be associated with a secure social bond and frequent interactions among the members. Therefore, it explains the causal relationship between POAM and PORC. Specifically, learners are driven to engage in more online knowledge sharing because the online learning environment enhances learners' social interactions and communion with their peers, and the online learning environment enhances learners to continue with an established relationship there.

The propositions on online knowledge sharing suggest several important practical implications for system designers and administrators. First, for instance, the propositions suggest that online learning environment will inhibit learners' online knowledge sharing if it cannot help enhance learners' social interactions and communion with others using the online learning environment or if it cannot help learners continue with an established relationship. These simultaneous conditions for an online learning environment have important practical implications for designers, particularly in the Course Management System / Learning Management Systems (CMS/LMS) design tradition, which overemphasize social interactions and over-look learners' continuance with established relationships. For example, most online learning environments are designed to foster social interactions through one-way broadcast such as announcement, calendar, resources download; or through two-way communication such as discussion forums, chatroom, etc. However, learners are grouped by courses. At the end of each semester, all the courses, learner groups, discussion records and resources are removed. Everything is cleaned and nothing is left. Relationships and memories will not last. At the commencement of another semester, new courses and communities are created. Students are imported into the courses to form communities from scratch. Student learners have no say to maintain their hard-earned relationships but have to develop and form new relationships again. Thus, a major conclusion of this study is that PORC - the desire to continue an established relationship in an online learning environment, is an equally strong correlate of online knowledge sharing and should not be ignored by academics and practitioners in the implementation of online learning environments. The importance of interpersonal relationship in online knowledge sharing provides significant implications for administrators to devise implementation strategies, for example, to allow community building throughout the whole four-year undergraduate program.

5 Conclusion

In conclusion, the present study acknowledges the importance of the recent development of online learning but identifies the research problems in the inconsistent participation of both instructors and student learners. A review of recent literature suggests that the theory of the need to belong in interpersonal relationship has strong relationship with online knowledge sharing, and hence online learning. POAM and PORC are reviewed and their relationships with online knowledge sharing are analyzed, with respect to prior theoretical and empirical studies. Propositions incorporating the two constructs: POAM and PORC, are suggested to explain online knowledge sharing. Further studies are suggested to operationalize the constructs and to empirically test the propositions.

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