Development of Personal Learning and Social Networks: Strategies for Knowledge Creation and Sharing in Online Learning Environments

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Abstract In the chapter, the author will address the role of informal networks in transcultural knowledge creation and the strategies online learners employ to develop these networks. It is recognized that an increase of global social capital, development of a global mindset, and increase in transnational competences are some of the desired outcomes of business education, and these competences are relevant for international organizations. However, inadequate attention has been paid to how such developments occur in an online environment and what factors enhance or hinder the learning process. The chapter will open with a brief overview of the role social capital plays in the development of networks, followed by a discussion of different types of networks that can either promote or hinder knowledge creation in online education. It will then discuss the different strategies learners apply in development of networks, followed by an evaluation of these strategies' effectiveness. Then a model of an effective knowledge-sharing network will be presented and analyzed. Further, examples of different types of social and personal learning networks in which learners participate and which they develop will be provided, to illustrate knowledge-sharing routes and to pinpoint knowledge creation hubs in these networks. The chapter will argue that in contrast to the widespread opinion that online learners are disadvantaged in social capital development, they benefit from the interconnected learning space and can develop professional and social networks and collaborative knowledge more successfully than their peers in traditional learning environments.

In conclusion, recommendations for individual online learners will be presented regarding the best approaches for development of long-lasting, functional networks oriented on transcultural knowledge sharing. Recommendations for international higher educational institutions on how to promote networking among learners, as well as collaborative and cross-cultural knowledge creation, will be presented as well.

Keywords Collaborative knowledge creation • Social capital • Personal learning networks • Global mindset • Transnational competence

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1 Introduction

An increase of global social capital, development of a global mindset (Levy, Beechler, Taylor, & Boyacigiller, 2007), and an increase in transnational competences are some of the desired outcomes of business education (Jones, 2013), and these competences are relevant for international organizations (Gupta & Govindarajan, 2002; Nummela, Saarenketo, & Puumalainen, 2004). At the same time, an exponential increase in online educational opportunities, in a variety of formats, from massive online open courses (MOOCs) pioneered in 2008 by George Siemens and Stephen Downes to blended courses where traditional class instructions are enriched with some online tools, brought up questions of whether and how such competencies could be developed without face-to-face interactions among students and with instructors. While online education (OE) has a capability to bring in one virtual classroom students from different parts of the world, inadequate attention has been paid to how transnational competencies and global mindset developments occur in an online environment and what factors enhance or hinder the learning process. One of the fundamental assumptions of online education is an ability to create an instructional experience comparable in quality to "traditional" classrooms but without the constraints of time and space that are inherent in it (Sanchez & Khan, 2016). Yet even on a traditional college campus, the diversity of students and faculty does not necessarily result in enhanced transcultural competence development; therefore, the mere presence of classmates from diverse cultures would not be sufficient in OE as well. To develop such competencies, the students would have to use certain network building and learning strategies. It can be argued that the most functional strategies can be best applied specifically in the OE environment.

2 Social Capital and Development of Networks

While online learning removes numerous barriers to the educational access, and many students can benefit from courses delivered online, few are able or willing to complete the courses. For example, for MOOCs the dropout rate consistently stays close to 90% (Downes, 2008), and not all learners who complete a course can successfully pass it. However, the ones who tend to complete and benefit from OE are adult learners with professional experience currently in the workplace (Cusumano, 2013). These findings are not surprising, as Udacity, a provider of MOOCs and corporate training, co-founder, and Stanford professor Sebastian Thrun points out: "At the end of the day, the true value proposition of education is employment… If you focus on the single question of who knows best what students need in the workforce, it's the people already in the workforce" (Chafkin, 2013, p. 10).

One of the reasons that professional adults benefit more than novice learners from online learning environment is because it is consistent with principles of adult learning (Knowles, 1973). A study conducted in 2010 among management students in OE measured the learners' preferences using the Assessing the Learning Strategies

of Adults (ATLAS) instrument and found their inclinations to be consistent with the adult learning choices that online learners favor, namely, courses that require self-direction, have a variety of options and learning tools, allow for personalization, and involve a learning community (Arbaugh, Desai, Rau, & Sridhar, 2010).

In general, the main characteristic of OE is derived from the constructivist model of learning, or the idea that knowledge is constructed, and not transferred from one individual to another, as well as discovery learning (Vygotsky, 1978) and facilitated learning (Rogers, 1983). The constructivist approach to learning and knowledge creation, in turn, is based on social learning theory (Bandura, 1977), which is frequently applied as an explanation of learning processes in multicultural environments; an online learning community in an international educational institution is, by its very nature, multicultural and global, as it involves students from different cultural, professional, religious, and national backgrounds. Specifically, social learning theory (ibid) proposes that in cross-cultural situations, learners benefit from feedback from mentors (instructors in OE) as well as peers, provided that such feedback is delivered in a socially safe environment where moderate risk-taking is encouraged (Caligiuri & Tarique, 2012). In addition, intergroup contact theory (Allport, 1954) requires that the conditions of cooperation, equal status, and interaction be met for learning to take place, as well as an increase in mutual understanding, empathy, and perspective taking (Pettigrew & Tropp, 2008) – these conditions may be present in online learning environments, where faculty members may take the role of facilitators rather than teachers with privileged knowledge. However, while feedback and social interactions are necessary for knowledge creation and sharing, they alone are not sufficient. Besides these, a learner should possess sufficient social capital, and shared trust should exist among the learning community members to engage in networks and new knowledge creation (Inkpen & Tsang, 2005).

A learner prefers establishing connections with persons with higher or at least equal knowledge (Wang, 2013), yet, in a traditional classroom, it could be a challenging task to find such persons, as the level of knowledge is not always apparent to other learners. Instructors provide individual feedback to students, and students do not have access to work of others or instructors' assessment of it. In OE, all learners engage in discussions and share opinions and ideas, and therefore, their knowledge and the initial social capital levels of learners are apparent. Also, besides engagement in formal learning activities, students have access to informal networks, where the information and knowledge can be accessed and exchanged without any party intentionally searching for it, resulting in additional knowledge and social capital creation (Lin, 2008). Therefore, in contrast to traditional educational settings, OE allows for an exchange of knowledge and information from formal to informal networks and for bridging among different networks. Learners are also likely to have and use access to networks and sources outside the learning environment, including professional and social sharing sites, YouTube videos, news, discussion boards, and so on. They can incorporate their social, professional, educational, and other networks, as well as enrich them with other sources of knowledge and information available to them. However, not all networks are equally beneficial for knowledge development and sharing and for collaborative transcultural knowledge creation in online environments.

3 Different Network Types and Their Role in Knowledge Creation

It is recognized that looser networks of weak ties are more likely to result in knowledge sharing than a bonding network of strong, long-lasting connections (Granovetter, 1973). In knowledge creation, learners are likely to build personal learning networks (PLNs) (Couros, 2010) to utilize social capital (Bourdieu, 1986) or "resources embedded in one's social networks, resources that can be accessed or mobilized through ties in the network" (Lin, 2008, p. 51). Several theories of learning address knowledge created and shared in social interactions, for example, situated learning, which views learning as social construction occurring in communities (Lave & Wenger, 1991), and knowledge created in networks (Kayes, Kayes, & Yamazaki, 2005).

Putnam (1995) proposes two types of networks built on social capital utilization – closed binding networks that consist of close friends and family members and are used mostly for emotional support and bridging one, with looser and weaker ties of acquaintances based on professional identities and shared interests. The knowledge is more likely to be shared and created in the latter, as network members have access to more diverse information sources and thus the sharing would result in tangible pragmatic benefits for the members of such networks (Granovetter, 1973). However, these network categories were developed prior to the wide availability of information, discussion tools, and professional sharing networks. The connectivism theory of network learning (Siemens, 2014), called the learning theory for the twenty-first century, suggests that even more pragmatic ties are more appropriate to knowledge sharing and creation in the interconnected networked social reality, as these ties combine social and informational resources that operate in a chaotic environment and recognize rather than create patterns of meaning.

Downes (2008) suggested that network building is, in fact, learning and that knowledge should be understood as a pattern recognition rather than an acquisition of facts or understanding. Therefore, because social networks and online classes, in contrast to more formal traditional academic ones, are less structural and more fluid, learners tend to interact based on shared professional interests and values, not just academic ones; in addition, they invest into the network the social capital from other relationships and networks (Lin, 2008). Specifically, in management OE a student is expected to share professional and cultural knowledge developed through not only academic but also professional experiences, in different roles and locations. While the same could be true for a traditional MBA or graduate-level master course, it is unlikely that all students would participate equally and be able to share their knowledge and experiences. Nonacademic and nonprofessional factors might negatively influence the social capital of a student, for example, the country of origin, fluency in the language of instruction, accent, and other social factors, and thus limit the development of networks.

In contrast, in an online environment, such restraints are somewhat mitigated, and learners present their constructed identities as they are related to the subject and

topic. Increase in the demand and the changing mode of delivery and understanding of the goals of higher education have changed the traditional concepts of student identity (Naylor, Baik, & James, 2013), allowing learners build identity experiences from a variety of academic, lifestyle, professional, and cultural experiences (Kelly, Coates, & Naylor, 2016). However, when learners attempt to create networks based solely on cultural identity, be that national, regional, gender, or corporate culture, which is often the case in a traditional educational environment, the results are rarely conducive for knowledge creation or social capital development, regardless where these networks based on similarity, or with learners sharing a culture, or on novelty, or a desire of learners to connect with representatives of another culture (Mikhaylov & Fierro, 2015). The similar pattern can be found among expatriate employees from a common cultural background or of a national origin, who tend to create bonding networks (Adler & Kwon, 2002), which are not advantageous for producing and sharing of cultural knowledge.

Therefore, the types and the characteristics of a network a learner chooses to create affect not only the learning experiences but, ultimately, the learning outcomes. A learner could maintain separate networks built on his/her social, professional, political, or interest identities and not allow them to overlap. It could be pointed out that frequent advice given to young graduates is to create a professional identity that is not connected with their social one for networking and professional activities. While it might be a sound suggestion, it is unlikely to be realistic as many HR professionals require access to social network sites from candidates as a matter of policy. A similar approach would be to separate online presence and real-life activities; however, this tactic is also unlikely to be productive, principally for learners in formal education as most informational and educational resources are available only online, and that is particularly true for online students.

Young adults tend to have limited networking and professional experiences, and therefore they create situational networks; in other words, they connect and form ties with others based on opportunity rather than similarity of interests or expected benefits. Situational networks might be formed and maintained with classmates from primary school, neighbors, or distant relatives. Such networks are unlikely to be beneficial for a learner as they are bonding and lack diversity of resources and knowledge available for the members (Mikhaylov, Fierro, & Beaumont, 2016). Older and more experienced learners, on the other hand, are more likely to create multidimensional and loosely connected PLNs that incorporate multiple networks and social media presence, use problem-solving models of knowledge creation, and are more likely to participate in collaborative knowledge creation, including the transcultural one. However, few traditional college students engage in network-building activities, and most tend to use their social capital and connections primary for bonding purposes, emotional support, and entertainment (Mikhaylov, Beaumont, & Fierro, 2016). Figure 1 presents an example of ineffective knowledge sharing in a situational non-connected network.

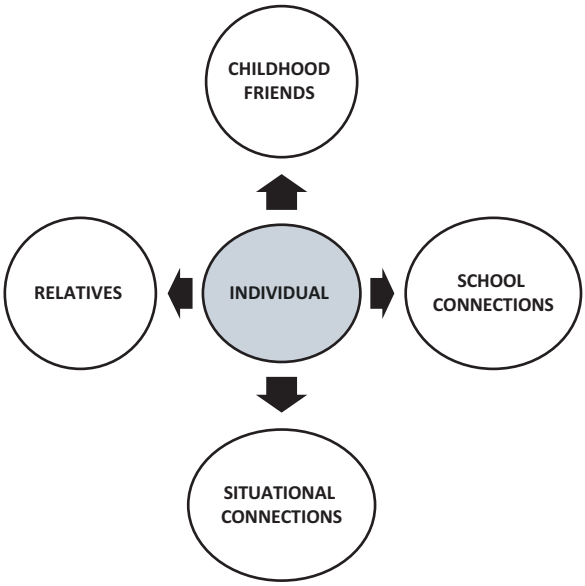

Fig. 1 An example of ineffective knowledge sharing in a situational non-connected network

4 Effective Knowledge Sharing Network

In a connectivism approach to learning, knowledge is created when it is shared with a learning community, referred to as a node, which Siemens (2014) defines as "the clustering of similar areas of interest that allows for interaction, sharing, dialoguing, and thinking together." For a network to be classified as a learning community, it is required not only to share, but to create knowledge and be connected to other communities (Downes, 2008). Also, knowledge can be not only shared, but stored in a variety of digital forms. Therefore, a learner has to use social media tools to store and share information to create effective PLNs and, ultimately, nodes or connected learning communities.

Personal learning environments (PLEs) not only connect learning communities but also allow learners to share resources, participate in collaborative knowledge creation, and manage their sense-and-meaning-making process through social media, for example, social networking sites, such as LinkedIn and Facebook; blogging and microblogging, such as WordPress or Twitter; media sharing sites such as YouTube; and cloud computing office tools that enable sharing. In an online learning environment, social media tools can be incorporated in academic platforms, such as Blackboard or Moodle, or be used in addition to virtual classrooms. While PLE allows a learner to personalize information and knowledge and share it with others, an obvious requirement is an ability to use the social media for knowledge creation. However, most students tend to use social media either for entertainment, as sharing jokes, or for keeping in touch with their connections, for example, WhatsApp messaging; few and mostly older students use social media for professional, academic, or cultural knowledge creation (Mikhaylov, Beaumont, & Fierro, 2016).

Dabbagh and Kitsantas (2012) propose a three-stage pedagogical framework to application of social media to support self-regulated learning in PLEs. At the first stage, an instructor just encourages the students to use social media, such as wiki, blogs, and shared calendars, and social networking to store and organize information, to make personal planning, and to maintain a professional presence; then, at the second stage, the instructor asks the students to interact and collaborate, and finally, they progress to information aggregation and management. However, when such activities are presented as a class assignment, they can hardly be considered self-regulated learning, and young adult learners prefer to keep their academic and professional activities separate from social and entertaining ones. While students might believe that social networking sites in principle could be useful for course materials' sharing and discussion, in practice, only a small minority reports using it, and in general, time spent on social media, specifically on Facebook, negatively correlates with a grade point average (Tess, 2013). Learners need not only access to the information but also curiosity and ability to integrate and incorporate knowledge into their worldviews, including new cultural knowledge, to develop new worldviews (Mikhaylov, 2016).

Therefore, it is not sufficient to make sure that learners have access to social media and skills to use it. To create PLNs and PLEs, a learner must have an integrated approach to knowledge sharing; be proactive and opportunistic in maintaining, developing, and building networks; and seek to join existing networks and learning communities based on shared interests, values, competences, and needs (Mikhaylov, 2014b). The most effective strategy for developing learning communities and knowledge sharing networks is to apply current social capital and a cultural and professional identity to access existing networks. Then, when a learner finds an additional shared interest or a competence (academic, professional, cultural, or social) and through an introduction, or an active access, joins another network, where the process would be repeated. To continue the process, a new network can be developed and connected with the previously existing ones, and to share and store information, social media tools are incorporated. Through joining various complementary networks, knowledge is created, shared, and stored in digital format available to other learners (Mikhaylov & Fierro, 2015).

The process, as depicted in Fig. 2, starts with an individual joining a new network through an introduction or as a new connection or a member of a new network. At the same time, the individual accesses information on the Internet and joins a social media or a professional site. The new information is stored and results in new knowledge that can be shared or stored and in turn results in new knowledge. Based on the new networks joined and new interests and competences developed, a new network can be created, resulting in new competence, which can be shared, and ultimately, the result is an increase in social capital, knowledge creation, and access to more networks.

To accomplish this process, learners should be able to develop new identities, as well as adapt their knowledge creation and sharing behaviors to their current identities and personalities, including the preferred learning styles, which would influence the type of a PLE a learner would create. Besides, a learner would need to integrate

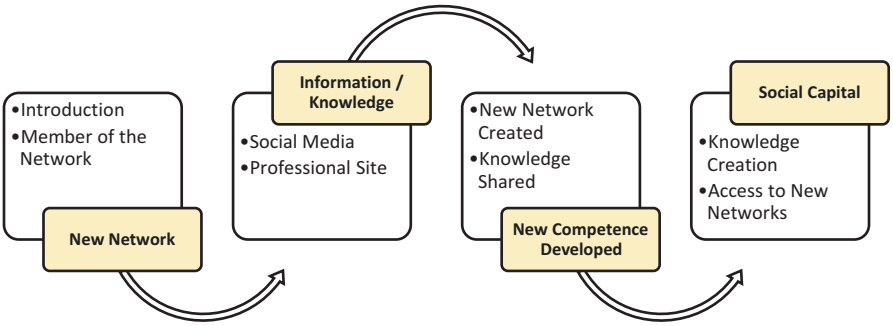

Fig. 2 A process of knowledge creation in PLNs and PLEs

various social, professional, and cultural identities. Learners who do so successfully are more likely to be satisfied with their knowledge creation process and to feel belonging to a global community, as well as to maintain personal integrity, to project trustworthiness, and to develop global social capital (Mikhaylov, 2014a).

While creation of a new or an enhanced professional, social, or academic identity might seem a daunting task, according to the cultural identity perspective, personal identities can be multiple, fluid, and context specific (Hall, 1992), and, while it is possible and desirable to develop a new transnational role identity or revise an existing role identity (Kohonen, 2004), it is more feasible to do in a novel cultural or learning environment (Kraimer, Shaffer, Harrison, & Ren, 2012). It is recognized that developing and revising a role identity are conductive to personal and professional growth (Kohonen 2004, 2008; Makela & Suutari, 2009) and that involvement in a community or a network based on this identity increases the significance of new identity, specifically a transcultural and global one (Kohonen, 2008).

The process of participation in multiple PLNs based on fluid identities is illustrated in Fig. 3. A learner can develop multiple fluid identities, which can be applicable to situational knowledge development. Some of the most common ones are presented in Fig. 3. The circles represent other possible shallow identities that can be used for connection and leveraging of social capital. These identities are dynamic and overlapping and can be activated in the process of knowledge sharing and creation.

5 Online Learners

In contrast to the widespread opinion that online learners are disadvantaged in social capital development, they benefit from the interconnected learning space and can develop professional and social networks and collaborative knowledge more successfully than their peers in traditional learning environments. Online learners are ideally situated to accomplish both the building of the individualized PLEs, both through the tools available on the learning platforms and web-based, and creating new professional and cultural identities. They are unlikely to engage in binding

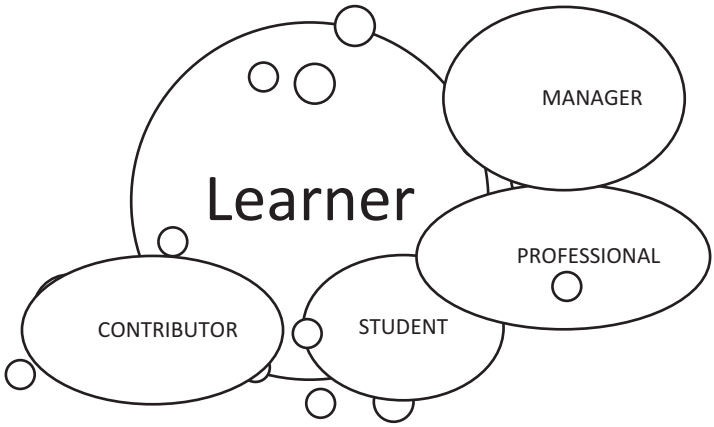

Fig. 3 Example of multiple fluid contextual identities

networks' development as they would not have access to situational and binding networks in their learning environment, and they would be unlikely to join national or regional culture-oriented networks or limit their interactions to representatives of the same country, industry, or profession.

Online learners are likely to develop a new identity or enhance an existing professional one and engage in the consolidation of perspectives and knowledge across professional and cultural domains (Jeannet, 2000) and, eventually, develop a global mindset or an ability to influence individuals, institutions, and groups different from them (Gupta & Govindarajan, 2002). While some online learning institutions attempt to compensate for a lack of face-to-face contacts among students and between a student and an instructor, such contacts are a weak indicator of both student satisfaction and learning outcomes. In contrast, the course design is the strongest predictor of satisfaction, while intrinsic motivation of a student affects learning outcomes most positively (Eom & Ashill, 2016). It is possible that the course design conducive to self-directed learning and the development and application of PLEs result in higher satisfaction, and an intrinsic motivation to apply them results in higher learning outcomes.

In a traditional classroom, university students do not use social media, blogs, sharing website, and other digital tools available on the web to a large extent, so the idea of digital natives is mostly a myth (Margaryan, Littlejohn, & Vojt, 2011). In addition, general preferences for communication are to use less rich media for professional high-risk communication and for users with low self-esteem and high anxiety (Joinson, 2004). While limited research is available on how online students construct and evaluate their identity, students in online courses tend to perceive an instructor with non-native English accent as less likable and rate such an instructor lower than a native speaker, even though a non-native accent does not impact learning outcomes (Sanchez & Khan, 2016). By extension, we might conclude that learners with a non-native accent would be anxious to appear more knowledgeable and likable and hide their accents; thus they would prefer to communicate in writing. Based on the anecdotal

evidence in online courses, students prefer written communication even in synchronic sessions where both audio and video features are available.

Apparently, there is a preference for less rich communication media, the one that allows students to use a shallow identity and that does not specify origin, language skills, and other personal characteristics but focuses on professional and academic ones. Arguably, the same shallow identities would permit learners to engage in behavior that can be considered a high interpersonal risk, for example, a disagreement, or allow to establish a connection with a stranger. Media users tend to express stronger opinions, values, and emotions when engaged in a less rich media, for example, a discussion board; therefore, there could be opportunities for building an understanding of values. Additionally, creation of collaborative knowledge is less risky in a less rich media environment, such as an online classroom as opposed to a traditional one. Also, research demonstrated that in an online discussion, high levels of cognitive engagement and critical thinking are evident (Thomas, 2002). Besides, a low context of messages ensures the focus on the message, shared opinions, and new information, not social cues, and establishes a more egalitarian mode of the exchange (Ruberg, Moore, & Taylor, 1996) and thus promotes learning and knowledge creation.

Finally, one of the common concerns with online learning is the role of instructors and their involvement in discussions and facilitations. Buckley (2011) suggests that in contrast to motivating student participation in a discussion, the frequency of instructor's postings negatively affects the length of the threads and limits the amount of discussion for more advanced students. Thus, students are more likely to exchange in a discussion and continue when they are left to their own devices and when they discuss the issues that are of interest to them. The self-regulated learning, as well as principles of connectivism (Siemens, 2014) and adult learning (Knowles, 1973) in general, suggests that learners are most likely to engage in knowledge creation when the conditions of moderate risks, a pragmatic value of knowledge, and equal status are present. When such conditions are satisfied, learners not only create and share knowledge but increase their situational social capital, which is required for developing networks in future.

6 Conclusions and Recommendations

Therefore, it can be concluded that online learners are likely to benefit from the interconnected learning space, variety of media, and web tools available to them, self-directed learning, and peer-to-peer feedback, as well as from socially safe feedback, and they can develop professional and social networks more successfully than their peers in traditional learning environments. Online learners can create fluid and situational contextual professional and academic identities, interact with their classmates and faculty in a more egalitarian and lower contextual mode, and are more likely to express opinions and ideas freely; they are more likely to develop an ability to influence individuals and groups different from themselves and thus develop a global mindset and transcultural competence.

However, to achieve these outcomes, online learners need to focus on the best approaches for development of long-lasting, functional networks oriented on knowledge sharing. The first and the most important step is to focus on developing an intergraded professional identity that incorporates professional, cultural, and academic competences, as well as the learner's values and preferences. The specific situational identities can differ, as they are fluid. A learner should be actively engaged with a variety of social media tools and platforms through a variety of complementary networks. Sharing information and creating collaborative knowledge are most likely to happen in a loose network; therefore a learner should engage in both formal and informal networks; share contents, ideas, and opinions with other network members; and attempt to connect several networks, as well as enrich their connections by finding additional interests and competences in common with other network members.

Also, international higher educational institutions (IHEIs) can take steps to promote networking among learners, as well as collaborative and cross-cultural knowledge creation. The IHEIs could assist students in the development of social networks, both inside and outside of the academic environment, and create opportunities for the social interactions and allow the students and faculty to explore various social and academic identities and share professional, social, and academic networks. While the attention to course design and tools is essential, for successful building of PLEs and development of social capital and cultural competences, the learners should have more freedom and flexibility to support their professional and academic interests and to engage with fellow students on equal terms. Although more research is needed on the specific ways in which online students utilize their social capital and develop networks, and any conclusion can be only speculative at this point, it appears that online education is better suited for collaborative knowledge development in networks.

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