

The Web of Identity: Selfhood and Belonging in Online Learning Networks

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Abstract

In this paper, the reflexive relationship between social interaction and understanding of self in online learning networks is examined. In keeping with constructionism, we acknowledge the significance of social interaction in learning and identity formation. It is through identification with and differentiation from others that individuals are able to establish their sense of self. Therefore, a sense of self is inherently connected to one's sense of belonging within a community (-ies). Building on the work of Goffman (impressions management) and Foucault (technologies of the self), a model of identity and community formation is introduced: the Web of Identity (WoI). According to the WoI model, community members rely on technical, structural, political, cultural, and idiosyncratic perspectives coupled with performance strategies in a continuous cycle of internalization, understanding, enactment, and revision of their individual identities. We discuss how individuals construct their identities through relational dialogue and interaction in which they express, share, and build upon their histories, practices, and goals. It is an ongoing reciprocal process that constantly changes both personal and collective narratives. The combined perspectives and strategies guide the individual's behaviour, but do not completely restrict it. The individual is free to choose how to perform and may choose performances that support or contravene accepted social practices. Ideally, this process guides the individual towards cognitive resonance, a process in which he/she behaves in accordance with his/her internalized conceptions of society and self. If an individual's actions do not resonate with social expectations, accepted practices, and self, the individual may modulate his/her actions or may cause shifts in accepted practices, expectations, or self identity. Such shifts filter through the WoI performance strategies. The paper concludes with suggestions for further research in identity formation in online learning networks. We recommend study of current social networks and learning management systems to identify existing mechanisms that permit expression of WoI strategies. In addition, we recommend research into how social software systems can be developed or facilitated to encourage strategy use. Since, it is through these performances that the individual enacts his/her identity, we wish to know how, in actual practice, strategy use will affect conceptions of self and community in educational environments.

Keywords

Identity, community, online community, social networking, social constructivism, impressions management, relational dialogue, cognitive resonance, networked learning.

Introduction

The growing popularity of social networking technologies such as Facebook and Ning are now prompting researchers to examine the potential of online community and collaborative space for students and faculty. To investigate how an online environment can be conducive to community formation, this paper examines the relationship between self and belonging in online social settings as well as the factors that may affect this relationship. The Web of Identity (WoI) model described in this paper permits an exploration of the different strategies that individuals use to enact their identities. Such strategies complement current theories of networking such as Actor Network Theory (ANT) and relational sociology by informing how the dynamics of action and interpretation affect individual identity and network affiliation.

Literature Review

Researchers have grappled with theories of identity formation, but have not adequately identified the processes involved at the level of the individual. Both Identity Theory and Social Identity Theory focus on the relationship between already-established roles or groups on identity (Desrochers, Andreassi & Thompson, 2002). Similarly, Burke's Differentiated Model of Role Identity Acquisition focuses on the alignment of behaviour to roles within a given reference group, but fails to explain how "standard" reference groups or communities initially form (Collier, 2001). So, the question remains: how do individuals come to identify with and distinguish themselves from their communities?

Personal and community identity co-evolve through social interaction. Ricoeur (1992) saw a strong relationship between self and social interaction, proposing that personal identity involves both temporal continuity of the self (*idem*) and selfhood (*ipse*) allowing differentiation of an individual from others in a given community. Learning theorists such as Vygotsky (1978) and Piaget recognized social feedback as a mechanism through which one can verify the adequacy of constructs and concepts of self (Driscoll, 2005). In a more constructionist sense, Ferreday, Jones, and Hodgson, (2006) suggest that individuals learn through "relational dialogue" through which they "construct meaning about who [they] are as well as creating norms and values that determine what is seen as acceptable knowledge within a given social and cultural context. Hence, it is through social interaction that individuals learn acceptable behaviours as well as share, acquire, and shape cultural symbols in a continual cycle of reciprocity between self and community (Hutton, 1988; Merchant, 2006).

Relational dialogue is one of the most significant factors in online networks. Textual interaction, in some online environments, may be the only means of forming impressions of self and others. In this respect, words *are* action. In social dialogue, according to Mead (1934), the me (the self) is an internalization of all others (society), while the I is the source of actions and change. The actions or words of the I change society, which are then internalized in the I in the I me. Buckingham (2008) supplies an example of the dialectical relationship between individual and community identity:

On one level, I am the product of my unique personal biography. Yet who I am (or who I think I am) varies according to the social situation in which I find myself, and the motivations I may have at the time, although I am by no means entirely free to choose how I am defined. (p. 1)

The self knows its own narrative and chooses to perform certain parts of it depending upon the audience and the circumstance (Conrad, 2007; Goffman, 1959; Walther, 1996). Indeed, the term identity implies both difference from others and resonance with others. Online, harmony and discord in identification with others occurs through processes similar to those of offline identity. Online interaction is often equally real and may be strongly reflective of an individual's offline life (Chayko, 2008; Christensen, 2003). Technological mediation merely influences how impressions are accessed (time, place, manner, and meaning) and managed (Goffman, 1959).

Just as in the real world, individuals actively manage online impressions using "dramaturgical" techniques learned from socialization within communities. Socialization within communities results in its members acquiring a sense of shared history, purpose, norms, hierarchy, ritual, belonging, and continuity (Lapadat, 2007; Schwier, 2007; Rovai, 2002). These elements of community are the source of the technical, political, structural, cultural, and personal techniques that constitute the Web of Identity (WoI) model presented in this paper. This model complements current theories such as relational sociology and Actor Network Theory (ANT), which support the ideas that production of meaning occurs through interaction and that one's actions occur prior to one's identity (Mützel, 2009). Both theories focus on how activities affect social relationships and the "collaborative emergence of actors" (Mützel, 2009, p. 878). ANT helps us understand how media allows actors to compare their conceptions with those of others actors and how asymmetries "in the distribution of symbolic resources" arise (Chouldry, 2004, p. 5). Whether through ANT's process of *translation* (connections established through activity) or relational sociology's *discursive interaction* (relational dialogue), neither theory offers information about strategies-enactment enabling active meaning-making and relationship-building. This is where the WoI model can make a significant contribution.

Towards a Model of Online Identity

Goffman (1959) viewed an instance of social interaction as a performance. He suggested that during a performance, an actor must actively consider several elements during a performance: one's stance or position,

the outward appearance (the mask), an understanding of what a performance should look like, maintenance of presentation during the performance, the possibility for misrepresentation, and the need for deception in some instances. The performances themselves are held within regions delineated by boundaries or "barriers to perception" (p. 10). These closed social settings, he proposed, could be analyzed through four perspectives (1959):

- Technical: the ability to which individuals can create, express, extend, and share him/herself (Chayko, 2008)
- Political: the degree to which individuals or groups can demand, control, sanction, and enforce behaviour of others
- Structural: the horizontal and vertical social structures that restrict social contact and social distance.
- Cultural: the morals, values, customs, tastes, decorum, and norms of a given group of people.

Because these are perspectives, we cannot see them; rather, we see through them. To identify them tangibly, we must witness their enactment. For this reason, Goffman added a fifth element, the dramaturgical, which he defined as "the techniques of impressions management in the establishment and the identity and interrelationships of the several performance teams which operate in the establishment" (p. 240). However, Goffman's perspectives were originally developed to examine social establishments—not identities of individual actors. To inform the analysis of personal identity, one must consider another factor, personal agency. Foucault (1988) referred to this as "technologies of the self" and outlined four technologies that individuals use to understand identity (p. 18):

- 1. Production: enable production, transformation, and manipulation of things.
- 2. Power: enforce rules of behaviour.
- 3. Sign systems: allow communication though language and other cultural symbols.
- 4. Self: expression of personal preferences and proclivities: "individuals . . . effect by their own means a number of operations on their own bodies and words, thoughts, conduct, and way of being so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality" (Sarup, 1996, p. 84).

Table 1 shows a rough correspondence between Goffman's perspectives and Foucault's technologies.

Table 1. Correspondence between Goffmanian and Foucauldian concepts

Goffman	Foucault	Strategies of impressions management
Technical-	Technologies of	Display of quality, competency, and standards. (May be based on
Dramaturgical	Production	ability to produce, transform, or manipulate objects or situations.)
(TD) Perspective		
Political-	Technologies of	Display of persuasion, manipulation, authority, threat, punishment,
Dramaturgical	power	coercion, and control.
(PD) Perspective	•	
Structural-	N/A	Display of status, level of formality, maintenance of social
Dramaturgical		distance, restriction of contact, gossip, ostracism. (May be based
(SD) Perspective		upon the type of relationship with the audience as per game rules,
		social hierarchy, and/or received practices such as caste.)
Cultural-	Technologies of	Maintenance of moral standards and cultural values through rituals,
Dramaturgical	sign systems	norms, lifestyle congruent with an audience, and signs and symbols
(CD) Perspective		(abstract systems, language, money, physical decoration, and social
()		practices).
		practices).
N/A	Technologies of	Display of individual needs, motivations, and idiosyncratic abilities
	the Self	and tendencies. (May be based upon race, physical attributes,
		sexual preference, gender, creativity, geographical location, and
		personal history).

(Koole, 2009. Adapted from the work of Foucault, 1988 and Goffman, 1959.)

In figure 1, Goffman's perspectives and Foucault's technologies have been combined. The dramaturgical perspective overlies the other categories as it provides the visible actions of impressions management. Although social structures may result from expression of power strategies, Goffman's structural perspective is retained because it focuses on the maintenance of social structures once they have come into being. Foucault's technologies of the self have been added and named Personal Agency-Dramaturgical (PaD). The PaD acknowledges individual idiosyncrasies, needs, or personal motivations, which may help account for the variability in how individuals perform their identities.

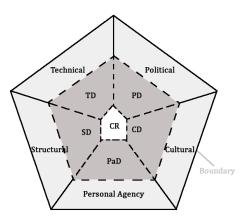


Figure 1: Web of Identity (TD = technical-dramaturgical, PD = political-dramaturgical, SD = structural-dramaturgical, CD = cultural-dramaturgical, PaD = personal agency-dramaturgical, and CR = cognitive resonance).

In any performance, any of the techniques may influence any other (represented by the non-solid lines in Figure 2). For example, impressions of status (SD) might be influenced by religious affiliation (CD) (through an overt display of adherence to culturally-defined ethical practices). When the techniques are used together, they shape the coordination of activity, intersubjectivity, emotional states, and views of personal and group history. This is what is referred to in Figure 2 as cognitive resonance (CR) in which members of a community share an understanding of their collective and individual identities (Chayko, 2008).

The Web of Identity in Online Learning Networks

The Web of Identity (WoI) model can be used as a lens through which to examine the formation of online identity and affiliation. The WoI takes place within a region or setting (physical or virtual) and is often delineated by a barrier (boundary) to entry whether physical, psychological, or virtual. The types of messages and the importance of the messages exchanged within an interaction may influence the variations on impressions management strategies chosen by the participants (Chayko, 2008). One of the purposes of this paper is to begin an examination of the effects of learner affiliation (identity formation) within learning networks. Therefore, the strategies enacted by learners will also be influenced by the needs of learners within (and possibly across) domains of study. For purposes of analysis here, we will assume that the WoI strategies are enacted within boundaries of a given field of study or learning purpose.

Technical-Dramaturgical (TD) Strategy

While use and access to digital media is dependent upon a variety of factors such as wealth, class, and gender, it is important to acknowledge that these media provide "symbolic resources" for both conformity and resistance to socializing forces (Buckingham, 2008, p. 5). Through web pages, blogs, pictures, video, audio, and other tools, individuals can choose, create, display, and sustain various aspects of their personal narratives (Chayko, 2008). Online technologies both provide synchronous and asynchronous access to narratives of individuals who are geographically dispersed (Giddens, 1991), fostering a sense of social presence (social and emotional connectedness), or even ambient co-presence (awareness of continuous availability) as in the case of mobile communications (Swan, Richardson, Ice, Garrison, Cleveland-Innes & Arbaugh, 2008). Ambient co-presence may increase ontological security (trust in one's constructs, identity, and identity of others) because members of their social network are reliably available, thereby increasing a sense of trust through consistent interaction (Chayko, 2008; Giddens, 1991). Optimistic as this may seem, technology can also constrain expression and

access, creating a digital divide wherein only those with the knowledge and economic means can engage in online interaction (Stald, 2008).

- Implication: Learning communities require trust in the experts and information. Can networked learning or an awareness of the WoI strategies help learners determine the authenticity and reliability of online resources?
- Implication: Those without the technical skills, network access, and technology will be excluded from these learning networks.
- Implication: Will learners identify with members of networks if ontological security cannot be established? To what extent will learners share their ideas in such an environment?

Political-Dramaturgical (PD) Strategy

While some view the Internet as enhancing opportunities and freedom of discourse, Foucault would argue that discourse, itself, is a vehicle of social control (Turkle, 1994). He sees discourse as a "set of rules," the interpretation of which is defined by a dominant class (Sarup, 1996, p. 69). Individuals who threaten or contravene accepted practices and rules may be punished (Handley, Sturdy & Fincham, 2006). Individuals who adhere to rules may avoid negative consequences, and may, instead, be rewarded. PD strategies, therefore, involve exercise of power, coercion, and reward to ensure accountability and predictability of behaviour. "When one is not accountable for one's own words, there is a lack of social and privacy control; a lack of reciprocity between writer and subject" (Chayko, 2008, p. 138).

• Implication: In traditional learning communities, the tutor or the ordained expert is dominant. This expert condones or rejects ideas that he/she deems inappropriate. This is a source of discomfort for traditional teachers as online networks may alter the behaviour of teachers and learners, and hence, the enactment of their identities and their ability to control information and behaviour itself.

Structural-Dramaturgical (SD) Strategy

This strategy is very closely related to the PD strategy. But rather than overt displays of control, SD involves maintenance of social hierarchy. Social hierarchy provides the stability for an individual to maintain a "coherent, unified, fixed identity" (Sarup, 1996, p. 14). Caste is an example of a stable social hierarchy. Online, an individual may belong to multiple communities and fit within multiple and overlapping hierarchies which may or may not reflect the physical world. Within these communities, a member will form mental maps of the social setting and where he/she fits within it. Status may change as individuals engage in various kinds of dialogue. To be connected suggests "symbolic importance" (Chayko, 2008, p. 126). Gossip, for example, shows that an individual possesses knowledge that is inaccessible to others. Flirting, humour, and secret sharing also affect hierarchy and intimacy (Chayko, 2008). Receiving volumes of email or mobile calls in public can also convey social importance. Controlling or gaining access to such online networks, therefore, can influence social position.

- Implication: Traditional education has been conducted through rituals in which students show a degree of deference towards the ordained expert(s). Referencing these experts, acknowledging source and identity through the use of specified citation and reference styles is but one example of academic deference. What is the extent to which traditional structures are transcended in online networks?
- Implication: As learners and experts enter into dialogue with multiple online contacts in a variety of networks, how might their status change? What kinds of mental maps can they envision in these online environments?
- Implication: Quality and quantity of network connections (friends) may contribute to an individual's sense of importance.

Cultural-Dramaturgical (CD) Strategy

Rituals and norms are seen by many sociologists as mechanisms for sustaining relationships (Stald, 2008). Rituals are culturally sanctioned performances (Nilsson & Svensson, 2007). Norms apply within community boundaries and are developed through practice over a period of time (Sarup, 1996). In fact, community boundaries may be delineated by nothing more than behaviour itself (Erickson in Sarup, 1996). Through interaction with others, individuals learn the norms and values of a given community. Failure to do so may result in rejection, humiliation, anxiety, chastisement, or other negative outcomes. Online, "anxiety is . . . produced as we attempt to master the 'rules' and norms of modern technological use" (Chayko, 2008, p. 127).

Members of a physically dispersed community rely on culturally determined symbols and rituals (such as text messaging codes and etiquette) to cultivate a sense of personal and group identity (Chayko, 2008).

Implication: Online interaction requires a set of skills and knowledge of online rituals and norms. Nonobservance of such rituals may result in exclusion. Spelling conventions, grammar, text messaging codes,
and ambient availability may provide new ways for learners to differentiate each other and identify
themselves with one another.

Personal-Agency-Dramaturgical Strategy (PaD)

Each human being has a different history of experiences that affects needs, motives, creativity, autonomy, and emotions. These unique narratives increase the complexity of social interaction. While the above strategies may influence an individual's beliefs, values, habits, routines, and unconscious behaviours (Pitts, 2005 in Ferreday et. al., 2006), choice is not completely eliminated (Giddens, 1991). Though situated within highly constraining rules of power, cultures, castes, or technologies, individuals may still choose how to express their unique abilities or preferences, accounting for some otherwise unexplainable observed performances.

• Implication: The Internet has often been heralded as the great equalizer as visible traits such as gender, race, and physical characteristics are no longer directly observable. However, studies indicate that characteristics such as gender cannot be hidden in sustained or frequent interaction (Ferreday et. al., 2006; Chayko, 2008). What forms of bias and judgment are arising in online networks? What characteristics cannot be hidden from other members of these networks?

Cognitive Resonance (CR)

Cognitive resonance refers to an individual's identity as reflected or refracted through the above strategies. It is the individual's current conception of self in which he or she has integrated experiences and beliefs of the external world into his or her personal narrative. Like relational sociologists suggest, individuals attempt to establish control; but, in the case of CR, it is control of meaning and identity. Reaching resonance implies the internalization of the "generalized other" into the "me" (Mead, 1934, p. xxiv). One's identity may be defined through "similarity, complementary differentiation, or some blend of the two" (Mead, 1934, p. 26). When cognitive resonance is in harmony, we assume that "others think about things more or less as we do unless we are presented with specific evidence to the contrary" (Chayko, 2008, p. 25). However, "resonance" connotes echoing, movement, or reflection. (We might also consider translation (ANT) as a process inherent in CR.) As such, it is an ongoing process in which one's self-conception and the conception of others is constantly echoed, reflected, and changed through social interaction. The WoI strategies, outlined above, continually modulate or filter an individual's social enactments, resulting in a gradient of harmony or discord with other community members. Evidence of harmony or discord is filtered back through the individual's perspectives and expressed through the strategies to achieve a comfortable level of resonance, harmony. Such concept threshold points (Land, Cousin & Meyer, 2005) may result in rejection and/or ontological adjustment of self or community (G. Parchoma, personal communication, January 8, 2010). The individual may, at times, choose to behave in discord with his/her self identity or with expected social practices, ultimately leading towards the explicit challenging of societal practices or even marginalization of oneself.

• Implication: In the process of achieving resonance in online learning networks, the learner must constantly evaluate their interactions to assess the authenticity and reliability of their perceptions of these networks. Learners must constantly adjust their strategies in an effort to manage their appearance, and hence, their membership in these communities. Learners must constantly seek access to and exit from networks that may or may not resound with their sense of self. To what extent does the quest for harmony with self and perceptions of community traits contribute to or distract from the learning process?

Conclusion

The strategies outlined in the Web of Identity (WoI) model above can be used to explore how technology, power, social structure, cultural norms and symbols, and personal constructs and perceptions affect learners' conceptualization of their identity and of those with whom they interact. Numerous additional research questions have arisen from this paper: Are there other processes through which individuals establish relationships and meaning? In online environments such as Facebook, Elgg, and learning management systems (LMSs), do individuals display status, coerce others, punish others, share symbols, display idiosyncrasies, and demonstrate competency? To what extent are participants aware of these strategies? Popular social networks and LMSs should be examined in order to determine to what extent they provide mechanisms for members to use

WoI strategies. Does community form more easily when such mechanisms are provided? If not provided, will communities provide their own mechanisms to express the WoI strategies? Do communities break down when cognitive resonance is in disharmony or when there are apparent asymmetries in the distribution of resources? Or do such states increase members' motivation to re-establish resonance and result in stronger (or different) networks? Answers to these questions may allow educators to design online environments in ways that encourage relationship formation and, ultimately, complement learning. Regardless, practitioners must be cognizant of the both the potential and implications of interaction in online networks on the formation of self and learning. How can we facilitate community formation in online learning networks?

References

- Buckingham, D. (2008). Introducing identity. In D. Buckingham (Ed.), *Youth, identity, and digital media* (pp. 1-24). Cambridge, MA: The MIT Press. doi:10.1162/dmal.9780262524834.001
- Chayko, M. (2008). Portable communities: The dynamics of online and mobile connectedness. Albany: State University of New York Press.
- Chouldry, N. (2004). Actor network theory and media: Do they connect and on what terms? In A. Hepp, F. Krotz & S. Moores (Eds.), Connectivity, networks and flows: Conceptualizing contemporary communications (pp. 93-111). Cresskill, NJ: Hampton Pr.
- Christensen, N. B. (2003). *Inuit in cyberspace: Embedding offline identities online*. University of Copenhagen, Denmark: Museum Tusculanum Press.
- Collier, P. (2001). A differentiated model of role identity acquisition. Symbolic Interaction, 24(2), August 23, 2009-217-235. doi:10.1525/si.2001.24.2.217
- Conrad, D. (2007). Chapter 1- The pedagogy of confession: Exploring identity and the online self. In M. Osborn, M. Houston & T. Nuala (Eds.), *The pedagogy of lifelong learning: Understanding effective teaching and learning in diverse contexts* (pp. 203-213). New York: Routledge Taylor and Francis Group.
- Desrochers, S., Andreassi, J. & Thompson, C. (2002). *Identity theory*. Retrieved August 23, 2009, from http://wfnetwork.bc.edu/encyclopedia entry.php?id=242&area=All
- Driscoll, M. P. (2005). Psychology of learning for instruction (3rd ed.). Boston: Pearson.
- Ferreday, D., Jones, C. R., & Hodgson, V. (2006). Dialogue, language and identity: Critical issues for networked management learning. *Studies in Continuing Education*, 28(3), July 2, 2009.
- Foucault, M. (1988). Technologies of the self. In L. H. Martin, H. Gutman & P. H. Hutton (Eds.), *Technologies of the self: A seminar with Michel Foucault* (pp. 16-49). Amhurst, MA: The University of Massachusetts Press.
- Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Stanford, CA: Stanford University Press.
- Handley, K., Sturdy, A., & Fincham, R. (2006). Within and beyond communities of practice: Making sense of learning through participation, identity and practice. *Journal of Management Studies*, 43(3), July 1, 2009.
- Hutton, P. H. (1988). Foucault, Freud, and the technologies of the self. In L. H. Martin, H. Gutman & P. H. Hutton (Eds.), *Technologies of the self: A seminar with Michel Foucault* (pp. 121-144). Amhurst, MA: The University of Massachusetts Press.
- Land, R., Cousin, G., & Meyer, J. H. F. (2005). Threshold concepts and troublesome knowledge (3)*: Implications for course design and evaluation. In C. Rust (Ed.), *Improving student learning diversity and inclusivity* (pp. 53-64). Oxford: Oxford Centre for Staff and Learning Development.
- Lapadat, J. C. (2007). Discourse devices used to establish community, increase coherence, and negotiate agreement in an online university course. *Journal of Distance Education*, 21(3), August 8, 2009-59-92.
- Mead, G. H. (1934). In Morris C. W. (Ed.), *Mind, self & society: From the standpoint of a social behaviorist* (13th ed.). Chicago: The University of Chicago Press.
- Merchant, G. (2006). Identity, social networks and online communication. *E-Learning*, 3(2), March 3, 2006. doi:10.2304/elea.2006.3.2.235
- Mützel, S. (2009). Network as culturally constituted processes: A comparison of relational sociology and actornetwork theory. *57*(871), February, 5, 2010. doi:10.1177/0011392109342223
- Nilsson, S., & Svensson, L. (2007). Interaction and self-presentation online: An analysis of blogs, virtual communities and places of serendipitous interaction. Paper presented at the *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2007*, 7305-7309. Retrieved from http://go.editlib.org/p/26935
- Rovai, A. (2002). Building sense of community at a distance. *International Review in Open and Distance Learning*, 3(1), May 20, 2009.

- Sarup, M. (1996). In Raja T. (Ed.), *Identity, culture and the postmodern world*. Edinburgh: Edinburgh University Press.
- Schwier, R. A. (2007). Shaping the metaphor of community in online learning environments. In G. Calverley, M. Childs & L. Schneiders (Eds.), *Video for education* (pp. 68-76). London, UK: DIVERSE and the Association for Learning Technologies.
- Schwier, R. A., & Daniel, B. K. (2007). Did we become a community? Multiple methods for identifying community and its constituent elements in formal online learning environments. In N. Lambropoulos, & P. Zaphiris (Eds.), *User- evaluation and online communities* (pp. 29-53). Hershey, PA: Idea Group Publishing.
- Stald, G. (2008). Mobile identity: Youth, identity, and mobile communication media. In D. Buckingham (Ed.), Youth, identity, and digital media (pp. 143-164). Cambridge, MA: The MIT Press. doi:10.1162/dmal.9780262524834.143
- Swan, K. P., Richardson, J. C., Ice, P., Garrison, D. R., Cleveland-Innes, M., & Arbaugh, J. B. (2008). Validating a measurement tool of presence in online communities of inquiry. *E-Mentor*, 2(24), September 3, 2009-1-12.
- Turkle, S. (1995). Life on the screen. New York: Simon & Schuster.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, 32(1), 3-43.

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