

Social Competence of Digital Natives: Impact of Social Networking Sites Use

Emergent Research Forum Paper

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Abstract

The digital natives of today are the first generation to grow up immersed in information and communication technologies and in particular social networking sites (SNSs). There is much hype in the media about the negative effects of SNSs, at the same time there are concerted efforts to reach these digital natives through social media by politicians, advertisers, organisations, and agencies. There is much isolated research on social media, digital natives, youth well-being, etc. But there is very little research that brings these diverse disciplinary threads together in a holistic manner. The purpose of our research is to address this lacuna by exploring the impact of social networking sites on digital native well-being in particular social competence. In this paper we explore this area and come up with three propositions that could become the foundation for future research.

Keywords

Digital Natives, Social Competence, Social Networking Sites, Identity Formation, Relationship Building

Introduction

The digital natives of today are the first generation to grow up immersed in information communication technologies (Tapscott 2008). A survey by (Prensky 2004) concluded, that digital natives “are not just using technology differently today, but are approaching their life and their daily activities differently because of the technology”. Digital natives are comfortable using a whole host of systems from transaction to decision to collaboration support for personal and professional purposes (Vodanovich et al. 2010).

However, ubiquitous internet spaces such as social networking sites (SNS) can have both positive and negative effects on a person’s well-being. Loneliness, depression and daily stress has been positively linked with greater Internet usage Kraut and colleagues, (1998), although such negative impact of Internet may vary for different personal characteristics and social variables (Hamburger et al. 2000). In contrast, studies have shown that the Internet can enhance social involvement (Kalpidou et al. 2011; Larose et al. 2001; Tomai et al. 2010). Some studies even report that Internet usage not only saw a marked decrease in loneliness and depression, but also saw an increase in perceived social support and self-esteem (Shaw et al. 2002; Svendsen et al. 2011).

Digital natives experience their adolescence in a digital environment and face specific developmental challenges. Existing literature shows that loneliness and perceived social support from family and close friends (Subrahmanyam et al. 2007), a socially supportive network, (Argyle 1992; Henderson et al. 1985) relationships and friendships (Argyle 1992) have all been found to contribute to youth well-being (Hartup et al. 2001). The well-being of digital natives can be broken down in numerous ways. The concept of social competence has been used in contemporary literature as one such attribute that contributes to youth well-being (Reis et al. 2000; Smart et al. 2003). Of particular interest in this study is to investigate the impact of the ubiquitous use of social networking sites by digital natives, on

their social competence offline and online. It is also interesting to explore the idea that this impact may not be uniform across this group and that it may be moderated by personality and gender. A series of propositions that can be used to test these ideas are proposed. The article primarily describes the theoretical development underpinning these propositions.

Theoretical Development

Social Competence in Ubiquitous Spaces: The Impact of SNS

Social competence has been defined as a set of skills and behaviours necessary to get along with others and be well-liked. For instance, Gresham, Sugai & Horner (2001) defined social competence as the ability of digital natives to “establish and maintain satisfactory interpersonal relationships, gain peer acceptance, establish and maintain friendships, and terminate negative or pernicious interpersonal relationships” (Gresham et al. 2001 p. 331). Consistent with the prior research that centres social success upon effective interaction (Gresham et al. 2001; Stump et al. 2009), social competence refers to a person’s ability to get along with other people and is one of important indicators for psychological well-being and development (Desjarlais et al. 2010).

The ability to create and maintain new relationships becomes especially crucial in adolescence as the hub around which young people’s world revolves changes from the family to the peer group. Such developmental tasks for digital natives are now accomplished through SNSs. The main SNSs used by the digital generation as referred to by eBizMBA (a list based on traffic ranking) (www.ebizmba.com) are Twitter, Facebook, MySpace, YouTube and Google+. Valkenberg et al (2006) have classified various uses of SNSs, such as social browsing and networking, into two main categories, Relationships and Self-Expression. In the following section, we will explore how these two forms of using SNSs could affect digital natives’ social competence development.

Relationship building Using SNS for Social Competence

An important developmental characteristic of digital natives is the need to sustain existing relationships (Mesch 2009) and the formation of new social relationships (Grinter et al. 2001). Adolescent friendships have been found to be reliable predictors of overall well-being, as well as self-esteem and social adjustment during adolescence and adulthood (Azmitia et al. 1999; Berndt 2002). However, digital natives tend to spend less time for face-to-face communications that supports both the maintenance of individual friendships and group interaction (Grinter et al. 2001; Schiano et al. 2002; Valkenburg et al. 2007).

Relationship building using SNSs refers not only to the ability to meet new people and connect with existing offline contacts (Boyd et al. 2008) but also refers to the types of, quality and the depth of relationships formed (Bukowski et al. 1994; Chan et al. 2004; McKenna et al. 2002). Peer communications, enabled by SNSs, are highly desirable because they provide a context in which the rules of the larger world can be learned, practiced and reinforced (Samter 2003; Yang et al. 2013); and help an adolescent making sense of life experience and constructing viable relationships between self and society (McCall 1987; Youniss et al. 2000). In the classical interpersonal communication literature, a full friendship development process typically can be understood as one in which a stranger evolves to an acquaintance, to a new friend, and then to a close friend (e.g. Canary et al. 2008; Trenholm et al. 2007). Teenage friendship development processes in SNSs are no exception. This process is somewhat accelerated by the unique features of SNSs such as lack of “gating features” which facilitate the ease of self-disclosure and the formation of “strong ties” (McKenna et al. 2000; McKenna et al. 2002).

The depth and quality of the friendship developed is also an important indicator to the strength of relationships formed and maintained via the Internet. There has been some debate over the stimulation versus displacement theories of whether the Internet enhances or takes away from creating and maintaining good quality friendships. The stimulation hypothesis suggests that online communication may enhance the quality of existing friendships because the numerous technologies available online encourage greater communication channels with friends strengthen existing relationships (Gross 2004; Subrahmanyam et al. 2007; Valkenburg et al. 2008). Conversely proponents of the displacement hypothesis argue that the Internet motivates digital natives to form

online contacts with strangers rather than to maintain friendships with their offline peers. Because online contacts are seen as superficial weak-tie relationships that lack feelings of affection and commitment, ubiquitous spaces are believed to reduce the quality of existing friendships (Kraut et al. 1998; Nie et al. 2002). Digital natives perceive the ability to intimately self-disclose as important predictors of reciprocal liking, caring and trust (Collins et al. 1994; Reich et al. 2012) making the Internet responsible for a potential increase in digital native friendship quality and, in turn, their well-being.

Using SNS for Identity Formation and Social Competence

Adolescents may find the struggle with identity formation, which consists of self-definition, self-expression and self-verification, a difficult task (Crocetti et al. 2008). At this stage in life they are experimenting with their identities and at the same time learning skills in expressions of self. While physical constraints such as the body, biological sex, race, or age can have a profound effect on self-definition and self-presentation (Collins 2003), many of these attributes become flexible in online environments. In a virtual world, digital natives employ text and images in their profiles and blogs to describe who they are, what they like, and what they do. Through their posts, users send greetings, exchange messages, make plans, flirt, and maintain contact. These features of SNSs allow users to reveal information about themselves and their lives (Jones et al. 2008). The anonymity afforded to digital natives within virtual worlds allows adolescents more flexibility in exploring their identity through their language, their role play, and the personae they assume (Calvert et al. 2002; Reid et al. 2013).

Identity formation also encompasses the validation and feedback adolescents receive to their profiles. Boyd (2007 p. 15) states that “teens are going online in order to see and be seen by those who might be able to provide validation”. In this way, digital natives can determine the appropriateness of their attitudes, behaviours, and values, thus re-enforce the formation of their identity (Derlega et al. 1979; Subrahmanyam et al. 2011).

There were three key concepts discussed in this section in relation to SNSs; social competence, relationship building and self-expression. Taken together these concepts enable the distillation of key elements that can be used to explain the relationship between use of and engagement with social networking technologies and their impact on the well-being and development of digital natives. We propose a series of propositions that could be used to explore the potential relationships between these concepts.

Proposition 1 (P1): The use of SNSs Relationship Building and Self-Expression leads to higher Social Competence of a digital native

P1a: The ability to form relationships through SNS leads to higher Social Competence in digital natives

P1b: The ability to express oneself through SNS leads to higher Social Competence in digital natives

Moderating Effects of Personality and Gender

In addition to predicting general online behaviour, the five traits from the Five Factor Model (Costa et al. 1992) have been linked to SNSs in particular. The Five Factor Model (“Big 5”) splits up personality types into constructs of *extraversion*, *neuroticism*, *conscientiousness*, *agreeableness*, and *openness to experience*. The first trait, *extraversion*, reflects a tendency to be sociable and able to experience positive emotions; the second trait, *neuroticism*, reflects a person’s tendency to experience psychological distress and high levels of this trait are associated with a sensitivity to danger; the third factor, *conscientiousness*, reflects the degree to which an individual is organised, diligent, and scrupulous. *Agreeableness*, the fourth factor, is another aspect of interpersonal behaviour, reflecting a tendency to be trusting, sympathetic, and cooperative. The fifth trait, *openness to experience*, represents an individual’s willingness to consider alternative approaches, be intellectually curious, and enjoy artistic pursuits (Amichai-Hamburger et al. 2010) This model has received considerable

empirical support and is now the standard taxonomy to organise and measure personality traits (Costa et al. 1992; Goldberg 1990).

While personality factors have been demonstrated to affect Internet use (Amichai-Hamburger et al. 2010; Correa et al. 2010; Hamburger et al. 2000; Ross et al. 2009) and some aspects of social competence such as perceived social support (Swickert et al. 2002), there is a paucity of research on how individuals with different levels of personality types are differentially affected by the same type of use of ubiquitous spaces (Ehrenberg et al. 2008; Ross et al. 2009; Swickert et al. 2002). However there have been no studies which look into the moderation effect of personality on the relationship between social networking use and social competence.

Amichai-Hamburger et al (2002) note that while *extraverted* individuals are able to express their true identity offline, *introverts* find it easier to express their identity online which also affects their ability to build relationships. Similar to *introverts*, those scoring high on the trait of *neuroticism* demonstrated a strong interest in using the Internet for communication (Wolfradt et al. 2001). Individuals high on the trait of *neuroticism* have also been reported as having the lowest levels of perceived social support (Swickert et al. 2002) and in turn are more likely to express their true selves in an anonymous forms of online communication such as chat rooms (Amichai-Hamburger 2002). However once again the majority of SNSs demand a certain level of truthfulness in construction of identity (Boyd 2007) and therefore may influence individuals of this personality type in self-expression and relationship building.

Research has demonstrated that the personality trait *conscientiousness* can be negatively related to the use of the Internet and other forms of CMS (Swickert et al. 2002). Perhaps this is because individuals of this trait are dutiful and responsible and avoid technologies like SNSs as they view it as a form of procrastination or distraction (Ross et al. 2009). However, it would be interesting to see whether digital natives follow this prediction as generally they view SNSs as part and parcel of daily activities and not a form of procrastination.

According to Landers and Lounsbury (2006) individuals scoring low on the trait of *agreeableness* were associated with individuals who were unpleasant to be around, did not possess common social graces. However, the former authors also note that less *agreeable* individuals may find the less demanding environment of online communication more amenable to their personality (Landers et al. 2006) and therefore may be able to express themselves more fully in technologies such as SNSs.

Traditionally, the personality trait *openness to experience* has been associated with individuals who are keen to try out new modes of communication and seek out novel experiences (Butt et al. 2008) online. However, as Ellison et al (2007) point out that as SNSs become more mainstream, especially for digital natives, the role of this personality type in moderating the relationship between the use of SNSs and the impact on social competence becomes less clear. On the other hand, the findings by Amichai-Hamburger et al (2002) suggest that individuals who are more open are more expressive in SNSs.

Given the above evidence, we expect the impact of using SNSs on social competence development is not uniform among digital natives, but vary for their different personalities.

Proposition 2: The effect of using SNSs for Relationship building and Self-Expression on Social Competence is moderated by Personality

Recent research has not uncovered gender differences in use of SNSs (Barker 2009) Similarly, while the gender gap seems to be narrowing in terms of Internet use (Haferkamp et al. 2012; Johnson 2011; Subrahmanyam et al. 2001) and impact on well-being (Subrahmanyam et al. 2007) in general, there are some exceptions to this research. In general, females are more likely to use the Internet to assuage social interaction and are also more likely to engage in behaviour consistent with feminine gender role norms that promote relationship maintenance, while males are more likely to spend their time online engaging in more task-focused activities and are more likely to engage in behaviour consistent with their gender role norm that promotes achievement-orientation (Muscanell et al. 2011). More specifically a study by Schouten (2007) indicates that boys are more likely to freely self-express online than their female counterparts, while females are more likely to use SNSs for relational purposes

(Barker 2009). Therefore, it will be interesting to see whether these gender differences are reflected in our digital native sample.

Proposition 3: The effect of using SNSs for Relationship building and Self-Expression on Social Competence is moderated by Gender

Conclusion and Future Research

The digital natives of today are born with a smart device in their hands! Some of them even have Facebook pages before they are born. They are digitally literate, highly connected, experiential, social, and are comfortable using a whole host of systems from transaction to collaboration support for personal and professional purposes. Such literacy, connectedness, and use has come at a price as evidenced by the growing number of reports in the media about bullying, loss of privacy, isolation, etc. However there are two sides to this issue and this research explores how the use of social networking sites impacts on the social competence of digital natives. We suggest that the use of social networking sites to build relationships and self-expression leads to higher social competence of digital natives. Furthermore we go onto suggest that this relationship is moderated by personality and gender.

While ubiquitous spaces have brought about potential new configurations of society and the environment in which digital natives find themselves, their engagement with these spaces also reveals a continuation of activities carried out by youth of the past. Digital natives, just like their digital immigrant counterparts did in their youth, are faced with the complex processes of becoming independent from their parents, gaining social acceptance from their peers and establishing a coherent identity.

Therefore, while the processes of transitioning to adulthood have not varied, the environments in which these processes are unfolding are changing dramatically. Ubiquitous spaces demand new strategies by digital natives to accomplish the key developmental and well-being tasks of adolescence. Of equal importance is the onus on academics, researchers and practitioners involved in ubiquitous spaces for digital natives, to understand, appreciate and in turn support digital natives in making the all-important transition to adulthood within this new environment.

References

- Amichai-Hamburger, Y. 2002. "Internet and personality," *Computers in Human Behavior* (18:1), pp 1-10.
- Amichai-Hamburger, Y., and Vinitzky, G. 2010. "Social network use and personality," *Computers in Human Behavior* (26:6), pp 1289-1295.
- Argyle, M. 1992. *The social psychology of everyday life*, (Routledge: New York).
- Azmitia, M., Lippman, D. N., and Ittel, A. 1999. "On the relation of personal experience to early adolescents' reasoning about best friendship deterioration," *Social Development* (8:2), pp 275-291.
- Barker, V. 2009. "Older adolescents' motivations for social network site use: the influence of gender, group identity, and collective self-esteem," *CyberPsychology & Behavior* (12:2), pp 209-213.
- Berndt, T. J. 2002. "Friendship Quality and Social Development," *Current Directions in Psychological Science* (11:1), pp 7-10.
- Boyd, D. 2007. "Why youth ♥ social network sites: The role of networked publics in teenage social life," *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*, pp 119-142.
- Boyd, d. m., and Ellison, N. B. 2008. "Social Network Sites: Definition, History, and Scholarship," *Journal of Computer-Mediated Communication* (13:1), pp 210-230.
- Bukowski, W. M., Hoza, B., and Boivin, M. 1994. "Measuring friendship quality during pre-and early adolescence: The development and psychometric properties of the Friendship Qualities Scale," *Journal of Social and Personal Relationships* (11:3), p 471.

- Butt, S., and Phillips, J. G. 2008. "Personality and self reported mobile phone use," *Computers in Human Behavior* (24:2), pp 346-360.
- Calvert, S. L., Jordan, A. B., and Cocking, R. R. 2002. *Children in the digital age: Influences of electronic media on development*, (Praeger Publishers/Greenwood Publishing Group.
- Canary, D. J., Cody, M. J., and Manusoy, V. L. 2008. *Interpersonal communication: A goals based approach* (4th ed.) Bedford/Martin Boston
- Chan, D. K. S., and Cheng, G. H. L. 2004. "A comparison of offline and online friendship qualities at different stages of relationship development," *Journal of Social and Personal Relationships* (21:3), p 305.
- Collins, D. 2003. "Pretesting survey instruments: an overview of cognitive methods," *Quality of Life Research* (12:3), pp 229-238.
- Collins, N. L., and Miller, L. C. 1994. "Self-disclosure and liking: A meta-analytic review," *Psychological Bulletin* (116:3), p 457.
- Correa, T., Hinsley, A. W., and de Zúñiga, H. G. 2010. "Who interacts on the Web?: The intersection of users' personality and social media use," *Computers in Human Behavior* (26:2), pp 247-253.
- Costa, P. T., and McCrae, R. R. 1992. "Neo Personality Inventory–Revised (NEO PI-R),".
- Crocetti, E., Rubini, M., Luyckx, K., and Meeus, W. 2008. "Identity formation in early and middle adolescents from various ethnic groups: From three dimensions to five statuses," *Journal of Youth and Adolescence* (37:8), pp 983-996.
- Derlega, V. J., and Grzelak, J. 1979. "Appropriateness of self-disclosure," *Self-disclosure: Origins, patterns, and implications of openness in interpersonal relationships*, pp 151-176.
- Desjarlais, M., and Willoughby, T. 2010. "A longitudinal study of the relation between adolescent boys and girls' computer use with friends and friendship quality: Support for the social compensation or the rich-get-richer hypothesis?," *Computers in Human Behavior* (26:5), pp 896-905.
- Ehrenberg, A., Juckes, S., White, K. M., and Walsh, S. P. 2008. "Personality and self-esteem as predictors of young people's technology use," *CyberPsychology & Behavior* (11:6), pp 739-741.
- Ellison, N. B., Steinfield, C., and Lampe, C. 2007. "The benefits of Facebook "friends": Social capital and college students' use of online social network sites," *Journal of Computer Mediated Communication* (12:4), pp 1143-1168.
- Goldberg, L. R. 1990. "An alternative" description of personality": The Big-Five factor structure," *Journal of Personality and Social Psychology* (59:6), p 1216.
- Gresham, F. M., Sugai, G., and Horner, R. H. 2001. "Interpreting outcomes of social skills training for students with high-incidence disabilities," *Exceptional Children* (67:3), pp 331-344.
- Grinter, R., E, and Eldridge, M., A. 2001. "y do tngrs luv 2 txt msg?," in *Proceedings of the seventh conference on European Conference on Computer Supported Cooperative Work*, Kluwer Academic Publishers: Bonn, Germany.
- Gross, E. F. 2004. "Adolescent Internet use: What we expect, what teens report," *Journal of Applied Developmental Psychology* (25:6), pp 633-649.
- Haferkamp, N., Eimler, S. C., Papadakis, A.-M., and Kruck, J. V. 2012. "Men are from Mars, women are from Venus? Examining gender differences in self-presentation on social networking sites," *Cyberpsychology, Behavior, and Social Networking* (15:2), pp 91-98.
- Hamburger, Y. A., and Ben-Artzi, E. 2000. "The relationship between extraversion and neuroticism and the different uses of the Internet," *Computers in Human Behavior* (16:4), pp 441-449.
- Hartup, W. W., Neil, J. S., and Paul, B. B. 2001. "Friendship: Development in Childhood and Adolescence," in *International Encyclopedia of the Social & Behavioral Sciences*, Pergamon: Oxford, pp. 5809-5812.

- Henderson, M., and Argyle, M. 1985. "Social Support by Four Categories of Work Colleagues: Relationships Between Activities, Stress and Satisfaction," *Journal of Occupational Behaviour* (6:3), pp 229-239.
- Johnson, G. M. 2011. "Internet activities and developmental predictors: Gender differences among digital natives," *Journal of Interactive Online Learning* (10:2), pp 64-76.
- Jones, S., Millermaier, S., Goya-Martinez, M., and Schuler, J. 2008. "Whose space is MySpace? A content analysis of MySpace profiles," *First Monday* (13:9).
- Kalpidou, M., Costin, D., and Morris, J. 2011. "The relationship between Facebook and the well-being of undergraduate college students," *CyberPsychology, behavior, and social networking* (14:4), pp 183-189.
- Kraut, R., Patterson, M., Vicki, L., Sarah, K., Tridas, M., and William, S. 1998. "Internet paradox. A social technology that reduces social involvement and psychological well-being?," *The American Psychologist* (53).
- Landers, R. N., and Lounsbury, J. W. 2006. "An investigation of Big Five and narrow personality traits in relation to Internet usage," *Computers in Human Behavior* (22:2), pp 283-293.
- Larose, R., Mastro, D., and Eastin, M. S. 2001. "Understanding Internet Usage: A Social-Cognitive Approach to Uses and Gratifications," *Social Science Computer Review* (19:4) November 1, 2001, pp 395-413.
- McCall, G. J. 1987. "The self-concept and interpersonal communication," in *Interpersonal Processes: New Directions in Communication Research*, M. E. Roloff and G. R. Miller (eds.), SAGE: Newbury Park, CA, pp. 63-76.
- McKenna, K. Y. A., and Bargh, J. A. 2000. "Plan 9 from cyberspace: The implications of the Internet for personality and social psychology," *Personality and Social Psychology Review* (4:1), p 57.
- McKenna, K. Y. A., Green, A. S., and Gleason, M. E. J. 2002. "Relationship Formation on the Internet: What's the Big Attraction?," *Journal of Social Issues* (58:1), pp 9-31.
- Mesch, G. S. 2009. "Social context and communication channels choice among adolescents," *Computer Human Behaviour* (25:1), pp 244-251.
- Muscanell, N. L., and Guadagno, R. E. 2011. "Make new friends or keep the old: Gender and personality differences in social networking use," *Computers in Human Behavior*.
- Nie, N. H., Hillygus, D. S., and Erbring, L. 2002. "Internet use, interpersonal relations, and sociability: A time diary study," *The Internet in everyday life*, pp 213-243.
- Prensky, M. 2004. "The emerging online life of the digital native: What they do differently because of technology, and how they do it," *Retrieved May* (25), p 2005.
- Reich, S. M., Subrahmanyam, K., and Espinoza, G. 2012. "Friending, IMing, and hanging out face-to-face: overlap in adolescents' online and offline social networks," *Developmental psychology* (48:2), p 356.
- Reid, G. G., and Boyer, W. 2013. "Social Network Sites and Young Adolescent Identity Development," *Childhood Education* (89:4) 2013/07/01, pp 243-253.
- Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., and Ryan, R. M. 2000. "Daily Well-Being: The Role of Autonomy, Competence, and Relatedness," *Pers Soc Psychol Bull* (26:4) April 1, 2000, pp 419-435.
- Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., and Orr, R. R. 2009. "Personality and motivations associated with Facebook use," *Computers in Human Behavior* (25:2), pp 578-586.
- Samter, W. 2003. "Friendship interaction skills across the life span," in *Handbook of communication and social interaction skills*, J. O. Greene and B. R. Burleson (eds.), Erlbaum: Mahwah.
- Schiano, D., J., Chen, C., P., Isaacs, E., Ginsberg, J., Gretarsdottir, U., and Huddleston, M. 2002. "Teen use of messaging media," in *CHI '02 extended abstracts on Human factors in computing systems*, ACM: Minneapolis, Minnesota, USA.

- Schouten, A. P., Valkenburg, P. M., and Peter, J. 2007. "Precursors and underlying processes of adolescents' online self-disclosure: Developing and testing an "Internet-attribute-perception" model," *Media Psychology* (10:2), pp 292-315.
- Shaw, L., and Gant, L. 2002. "In defense of the internet: the relationship between Internet communication and depression, loneliness, self-esteem, and perceived social support," *CyberPsychology & Behavior* (5:2).
- Smart, D., and Sanson, A. 2003. "Social competence in young adulthood, its nature and antecedents,").
- Stump, K. N., Ratliff, J. M., Wu, Y. P., and Hawley, P. H. 2009. "Theories of social competence from the top-down to the bottom-up: A case for considering foundational human needs," *Social Behavior and Skills in Children*), pp 23-37.
- Subrahmanyam, K., Greenfield, P., Kraut, R., and Gross, E. 2001. "The impact of computer use on children's and adolescents' development," *Journal of Applied Developmental Psychology* (22:1), pp 7-30.
- Subrahmanyam, K., and Lin, G. 2007. "Adolescents on the net: internet use and well-being," *Adolescence* (42:168) Winter2007, pp 659-677.
- Subrahmanyam, K., and Šmahel, D. 2011. "Constructing Identity Online: Identity Exploration and Self-Presentation," *Digital Youth*), pp 59-80.
- Svendsen, G. B., Johnsen, J.-A. K., Almås-Sørensen, L., and Vittersø, J. 2011. "Personality and technology acceptance: the influence of personality factors on the core constructs of the Technology Acceptance Model," *Behaviour & Information Technology:ahead-of-print*), pp 1-12.
- Swickert, R. J., Hittner, J. B., Harris, J. L., and Herring, J. A. 2002. "Relationships among Internet use, personality, and social support," *Computers in Human Behavior* (18:4), pp 437-451.
- Tapscott, D. 2008. *Grown up digital: How the net generation is changing your world*, (McGraw-Hill Professional.
- Tomai, M., Rosa, V., Mebane, M. E., D'Acunti, A., Benedetti, M., and Francescato, D. 2010. "Virtual communities in schools as tools to promote social capital with high schools students," *Computers & Education* (54:1), pp 265-274.
- Trenholm, S., and Jensen, A. 2007. *Interpersonal communication* (Oxford University Press: Oxford, England.
- Valkenburg, P. M., and Peter, J. 2007. "Preadolescents' and adolescents' online communication and their closeness to friends," *Developmental Psychology* (43:2), p 267.
- Valkenburg, P. M., and Peter, J. 2008. "Adolescents' Identity Experiments on the Internet: Consequences for Social Competence and Self-Concept Unity," *Communication Research* (35:2) April 1, 2008, pp 208-231.
- Valkenburg, P. M., Peter, J., and Schouten, A. P. 2006. "Friend networking sites and their relationship to adolescents' well-being and social self-esteem," *CyberPsychology & Behavior* (9:5), pp 584-590.
- Vodanovich, S., Sundaram, D., and Myers, M. 2010. "Research Commentary---Digital Natives and Ubiquitous Information Systems," *INFORMATION SYSTEMS RESEARCH* (21:4), pp 711-723.
- Wolfradt, U., and Doll, J. 2001. "Motives of Adolescents to Use the Internet as a Function of Personality Traits, Personal and Social Factors," *Journal of Educational Computing Research* (24:1).
- Yang, C. C., and Brown, B. B. 2013. "Motives for Using Facebook, Patterns of Facebook Activities, and Late Adolescents' Social Adjustment to College," *Journal of Youth and Adolescence* (42:3), pp 403-416.
- Youniss, J., and Yates, M. 2000. "Adolescents public discussion and collective identity," in *Communication: An Arena of Development*, N. Budwig, I. Č. Užgiris and J. V. Wertsch (eds.), Ablex Publishing Corporation: Stamford, CT, pp. 215-233.

