

Oxford Handbooks Online

The Psychology of Online Lurking

Maša Popovac and Chris Fullwood

The Oxford Handbook of Cyberpsychology

Edited by Alison Attrill-Smith, Chris Fullwood, Melanie Keep, and Daria J. Kuss

Subject: Psychology, Social Psychology Online Publication Date: Oct 2018

DOI: 10.1093/oxfordhb/9780198812746.013.18

Abstract and Keywords

Lurking, or passive online participation, is often defined as non-participation or minimal participation in online groups or communities. Although lurking has previously been considered a negative behavior in online spaces, with lurkers accessing the social capital of online communities without providing anything in return, current perspectives consider lurking as a legitimate form of online participation. Current literature shows that lurking is a more nuanced activity than previously considered, as individuals may not only vary in their participation across different online groups but their participation may also vary over time within an online group. This chapter examines the key personal and situational factors associated with active or passive participation, as well as the differential outcomes linked to levels of engagement in online groups generally, followed by a more detailed exploration of lurking in the context of online support groups and education.

Keywords: Lurking, online, passive participation, passive use, online support groups, e-learning

Introduction

Anyone who has visited one of the multifarious online forums dedicated to video games (one of the authors of this chapter has spent countless hours frequenting Fallout 4 forums!) will know that participation levels vary considerably between users. Whereas more “active” members might regularly begin threads bemoaning game bugs and glitches, offer tips and advice to fellow gamers, share achievements or character creations, or ask for help with quests they are stuck on, other members may merely log on to read existing content or observe interactions between members of the community, seemingly without making a tangible contribution. This pattern of behavior is not unique

The Psychology of Online Lurking

to games forums and indeed all online groups include individuals who do not add content to the community. These individuals have become known as “lurkers” (Edelmann, 2013). Lurking is thus viewed as a passive behavior linked to observation, invisibility, or bystander behavior (Edelmann, 2013).

In terms definitions, scholars vary in their framing of the phenomenon. Some consider lurking to involve no posting at all (e.g., Neelen & Fetter, 2010; Nonnecke & Preece, 2003), while others consider lurking as some (but minimal) posting (e.g., Golder & Donath, 2004; Ridings, Gefen, & Arinze, 2006). We would contest that the definition of lurking should depend on the social norms associated with specific online groups, which will always constrain and influence how people interact in all online spaces (Van Dijck, 2013). Whereas it might be more common in one community for users to make infrequent contributions, members of other communities may expect their fellow members to actively post. In the latter community, members are likely to perceive lurkers as those who make no or minimal contributions, but in the former those who engage minimally may not be seen as lurking. As discussed by Malinen (2015), it is still unclear how long a user should remain passive before being considered a lurker in an online environment. Nonetheless, for the purposes of this chapter lurkers are considered as individuals who log onto online communities, but who contribute little or no written content, thus spending the majority of their time taking in information created by other members.

Whether in the context of online support groups or video gaming forums, research exploring the determinants and effects of active or passive online behaviors has increased. Two key viewpoints exist with regard to lurking behavior specifically. The first view is that lurking is chiefly a negative behavior as individuals benefit from the content posted by active members and fail to add any real value to a community (Preece, Nonnecke, & Andrews, 2004). Thus, lurkers have been described as “social loafers” or “freeloaders,” drawing upon the social capital (the psychological and emotional resources gained through our relationships with others; Coleman, 1988) in communities without providing anything in return (Kollok & Smith, 1996). Following this thinking, one of the principal focal points of early research was on increasing participation of lurkers in order for them to become legitimate members of a group. This is largely due to active and sustained participation being viewed as crucial for making online groups viable and successful (Burke, Marlow, & Lento, 2009; Koh, Kim, Butler, and Bock, 2007).

The alternate view is that lurkers are in fact legitimate members of communities since passive participation can be considered as another form of engagement in online groups. Interestingly, lurkers have been shown to make up the majority of participants, with some studies showing that up to 90 percent of users were lurkers (Mason, 1999; Muller, 2012). However, lurking rates also vary depending on the online environment. For example, lurkers have been shown to make up 45.5 percent of all users in a health support community compared to 82 percent of users in a software support community (Nonnecke & Preece, 2001). Individuals are often also members of multiple online communities or groups simultaneously and engage in varying degrees within these different spaces (Muller, 2012). More specifically, one study found that 84 percent of individuals both lurk

and contribute in at least one community (Muller, 2012). Therefore, lurking has been argued to simply be a different form of engagement. The extent of individuals' engagement within online spaces is likely to vary in relation to their personal needs and motivations as well as the characteristics of the online group. Thus, many factors contribute to levels of participation of users and, in order to understand lurking behavior, it is important to consider the determinants of these behaviors as well as the effects of active or passive use.

This chapter discusses the personal and social determinants of lurking in online environments more broadly, before focusing on lurking in the contexts of health (online support groups) and education (e-learning), more specifically, due to the plethora of academic literature exploring these communities.

Personal and Situational Determinants of Lurking

Lurking as a Transformatory Process

It has been suggested that participation in online groups or communities is not a fixed behavior. Instead, it can be a transformatory process where individuals move between active and passive participation at various stages of joining a group (Bryant, Forte, & Bruckman, 2005; Malinen, 2015). In the beginning stages of joining an online group, individuals may lurk in order to familiarize themselves with the group dynamics in preparation for becoming active, contributing members (Yeow, Johnson, & Faraj, 2006). Indeed, lurkers stated that the key reason for their passive behavior was the desire to first learn more about the group (Nonnecke & Preece, 2003; Nonnecke, Preece, & Andrews, 2004). Moreover, a quarter of lurkers indicated that telling stories or participating in conversations was their main reason for joining an online community in the first place, and 13 percent reportedly wanted to offer advice and expertise in the online community they had joined (Ridings, Gefen, & Arinze, 2006). Thus, many lurkers join groups with the intention of contributing and can be seen as potential posters.

Upon observation, individuals may choose not to actively participate due to poor usability or technical issues, due to not liking the group dynamics once they had become familiar with it, or not perceiving the group as a good fit for them (Nonnecke et al., 2004; Preece et al., 2004). For example, someone may join a support group in order to find out more about living with a specific health issue but finds that discussions within the group tend to focus more on medical symptoms. Alternatively, the individual may find that members in the group are very negative or aggressive. Therefore, the individual's purpose for joining the group is not fulfilled. Lurking is, thus, not only dependent on the motivations for joining an online group or community but also on a range of situational factors within

The Psychology of Online Lurking

the group itself. Therefore, lurking is argued to be a more complex and more nuanced activity than previously considered (Yeow et al., 2006), refuting the notion that all lurkers are simply “freeloaders.”

Apart from moving between passive and active participation, active members can also become passive over time if they become less enthusiastic or if they become bored with the dynamics of the online group. Additionally, members may appear on the surface to be inactive, but this may be because for all intents and purposes they are no longer a member of the group, but just have not withdrawn their membership status. Thus, consideration of personal and situational determinants is important to understand both active and passive participation at various stages of group membership.

Motivations for Lurking

Sun, Rau, and Ma (2014) established a conceptual framework outlining four factors influencing online participation that could be applied to understand motivations for lurking. The factors include: (i) personal characteristics, (ii) the nature of the online community (iii) commitment to the group and (iv) privacy concerns.

Personal characteristics include the goals individuals aim to achieve by joining an online group. This can include a desire for *information exchange*, *social interactions* (e.g., friendship in personal interest groups), or *support* (e.g., health or occupational groups) (Ridings & Gefen, 2004). The desire to fulfil informational needs above social needs may lead to different expectations about group participation and, in turn, drives behavior. For example, lurkers indicate that the information they obtain within groups is more important than social interaction as their needs are satisfied from reading content posted by others (Nonnecke & Preece, 2003; Nonnecke et al., 2004).

Lurkers in social networking sites also believed that their social or emotional needs would not be satisfied if they posted (Rau, Gao, & Ding, 2008). In contrast to this, active users tended to be attracted to more extroverted activities that hold social benefits such as professional networking and offering expertise (Nonnecke et al., 2004; Tonteri, Kosonen, Ellonen, & Tarkiainen, 2011), and are more likely to be motivated by altruism and reputation (Horng, 2016). This suggests that, rather than actively deciding not to participate in a group, lurkers may simply be unmotivated to participate as their goals are met through passive use. This may also help to explain variations in lurking behavior across different online contexts, such as the significantly higher prevalence rate of lurking in a software support community compared to a health support community (Nonnecke & Preece, 2001). It is logical to consider that individuals trying to fix a software issue are present in the software support community to find information that would assist in solving the specific problem they are experiencing, while individuals visiting a health community may also desire emotional support and, therefore, richer social exchanges. Furthermore, individuals may also have different sets of needs at different times, which can also help to explain variations in levels of engagement within

The Psychology of Online Lurking

communities. For example, at the onset of illness people may be more in need of emotional support and may thus be more likely to actively participate in an online group, whereas later on they may be more in need of informational support relating to medication adherence or treatment and may thus be less likely to participate (or “lurk”) in an online group (Fullwood, 2016). Therefore, lurking behavior can be attributed to the Uses and Gratifications approach (Blumler & Katz, 1974), as individuals use media to gratify their very unique set of needs; in turn, those needs shape their use of the medium (Orchard & Fullwood, 2010).

Personal characteristics also include the personality traits of users. Research has found that introversion influences participation (Ross et al., 2009) and that extroverts engage in more social online behaviors and are more likely to voice their opinions than introverts (Nov, Arazy, López, & Brusilovsky, 2013). Others have found that agreeableness (associated with co-operation, consideration, and warmth) is linked to the motivation to help others—leading to active use, while conscientiousness (associated with diligence, meticulousness, and attentiveness) is linked to the motivation of finding useful information—leading to passive use (Cullen & Morse, 2011). Those high in neuroticism (associated with moodiness and anxiety) were also found to be less likely to actively engage in online communities (Cullen & Morse, 2011). It may be that neurotic individuals have higher concern for their privacy and may not wish to self-disclose, or they may have a higher concern for how others may respond to their posts.

Another personal characteristic that guides active or passive participation is technological self-efficacy. Self-efficacy relates to an individual’s self-confidence and belief about their capabilities of enacting specific behaviors (Bandura, 1977, 1993). Those with higher technological self-efficacy tend to be more confident in engaging in various online spaces, and believe that their posts provide useful information that will be viewed positively by other users (Sun, Rau, & Ma, 2014). Linked to this, a strong positive relationship has been found between lurking and computer anxiety (Osatuyi, 2015). Thus, in addition to gratifying particular needs, individual differences and self-efficacy also contribute to varied participation in online groups.

The second component of the framework suggests that the nature of the online group, such as group identity, reciprocity, and reputation, will influence users’ desires to contribute to the group. Zhou (2011) found that the social identity of the group impacts on user participation. The reputation of the group was also an important determinant, as those who wanted to earn respect from others in the group were more likely to contribute to groups with a high reputation (Lakhani & Von Hippel, 2003). Poor quality of messages and low response rates in an online group were also found to impact users’ willingness to participate (Wise, Hamman, & Thorson, 2006). Thus, group characteristics and dynamics also influence user willingness to contribute.

Thirdly, user participation in online groups can evolve over time as individuals take on different roles within the community, and as they potentially become more committed to the group (Schneider, Von Krogh, & Jäger, 2013). Commitment to the group can solidify

The Psychology of Online Lurking

active participation, while lower commitment can lead to reduced contributions over time. Finally, privacy concerns also influence participation. Individuals are more likely to participate if they consider the community to be secure and reliable (Sun et al., 2014), and are more likely to lurk if they are worried about their privacy (Du, 2006; Osatuyi, 2015).

This section highlights that a range of intrinsic (e.g., personal characteristics of the individual) and extrinsic (e.g., the nature of the community) motivations can impact the extent of user participation. This links to self-determination theory (SDT), which posits that individuals are driven by intrinsic and extrinsic sources of motivation related to fulfilling three basic psychological needs: competence, autonomy, and relatedness (for further reading see Deci & Ryan, 2000, 2008, 2011), and the same can explain active and passive online behaviors.

Effects of Lurking

While participation in groups is seen to enhance social capital in offline contexts (e.g., Cullen & Sommer, 2011), research into online communities suggests that these benefits are observed more in active participants than lurkers (Laine, Ercal, & Luo, 2011). However, other studies have shown that lurkers are as well informed and familiar with group dynamics as active users (Edelmann, 2013). In fact, many lurkers considered themselves community members (Nonnecke et al., 2004) as interaction with the content created by others can make them feel connected to the group (Tonteri et al., 2011). Lurking can also result in vicarious support obtained through the content posted by others without the need for self-disclosure (Walther & Boyd, 2002). This may be particularly attractive to some users, particularly those with higher privacy concerns. However, the effects of lurking are likely to vary depending on the nature of the online community. The following sections consider lurking in more detail in the context of health and education by exploring the motivations and outcomes of lurking behaviors in these domains.

Lurking in Online Support Groups and Health Forums

Online health groups and communities not only provide a wealth of information but they also offer a means of social support to users by connecting individuals who may have similar health concerns (see the chapter “Online Support Communities” by Coulson, this volume). Using online support groups allows individuals to engage in discussions with others through chat rooms, discussion boards, and forums in order to share stories, advice, and offer support. For many users, connecting through shared experiences with others is the key reason for engaging in health-related groups and communities (Oh,

The Psychology of Online Lurking

Lauckner, Boehmer, Fewins-Bliss, & Li, 2013). Although information-seeking in relation to health is widespread, active use of online support groups through social exchange is less common (Van Uden-Kraan et al., 2009). The following sections outline the predictors of active or passive engagement in the context of online support groups in more detail as well as the outcomes associated with active or passive use.

Predictors of Active or Passive Participation in Online Support Groups

Chung (2014) outlined three key motivations for engagement in online support groups: (i) motivations for social interaction, (ii) motivation for information seeking, and (iii) the need for emotional support. These motivations guide the extent to which individuals engage in online support groups, and the features they use on these sites. For example, those with a strong motivation for social interaction and emotional support were found to be more likely to engage in one-to-one conversations with other users and were more likely to self-disclose, while those with a strong motivation for information seeking were less focused on the social networking features and focused more on discussion board features of online support groups, where information is more likely to be exchanged (Chung, 2014). Thus, motivations for use are crucial in understanding active and passive participation in online health behaviors.

Available offline social support can also impact on the extent to which individuals are motivated to engage in online support groups. Two competing perspectives exist in relation to this: social enhancement and social compensation. Social enhancement relates to the idea that those who already have sufficient social and instrumental support offline may be driven to enhance these resources even further by seeking out online interactions (Kraut et al., 2002). Social compensation, on the other hand, argues that those who have fewer resources available offline may compensate for this by seeking out these resources online (McKenna & Bargh, 1998). Han, Hou, Kim, and Gustafson (2014) considered these models in the context of an online cancer support group and found evidence for both. The findings showed that lurkers were more likely to live alone than active participants in the group, suggesting support for the social enhancement explanation. However, social compensation was also supported as individuals were more likely to engage in online support groups (at least in the short term) if they were depressed, and/or had less knowledge about cancer and lower perceived social support offline (Han et al., 2014). This highlights that participation in online support groups can fulfil different functions depending on social and psychological factors, and that these factors may not be barriers but rather motivators to interact with others (Han et al., 2012).

Outcomes of Active and Passive Participation in Online Support Groups

The Psychology of Online Lurking

Engagement in online support groups has been associated with numerous positive outcomes, including social and emotional support and information and advice about illness (Nimrod, 2016). It has also been linked to increased optimism about one's condition (due to learning about positive experiences of others), increased mood and coping, empowerment, higher confidence in relationships with doctors and treatment, as well as self-esteem and well-being (Nimrod, 2016; Van Uden-Kraan et al., 2008).

The benefits of online support groups, however, may also differ based on active or passive participation (Tanis, Das, & Fortgens-Sillmann, 2011), although the findings in this area are mixed. Malik and Coulson (2011) found that both active and passive users in an infertility group received benefits from group membership and there was no difference in loneliness, social support, infertility-related stress, or marital satisfaction between them. Similarly, according to Mo and Coulson (2010), there was no difference between lurkers and posters in online support groups in relation to self-care, self-efficacy, loneliness, depression, or optimism. However, this study also found that lurkers reported significantly lower scores on measures of perceived social support and satisfaction with relationships with other group members compared to posters (Mo & Coulson, 2010). Some argue that the process of formulating replies and explaining personal experiences and emotions can be an important contributor to the benefits obtained from using online support groups and working through feelings via self-reflection (Han et al., 2011; Pennebaker, 1997). In addition, offering support to others can also serve to enhance an individual's self-worth, belonging, and sense of purpose (Fullwood, 2016; Taylor & Turner, 2001). Thus, while lurkers may feel equally as informed and emotionally supported as more active members through reading messages and learning the perspectives of others (Mo & Coulson, 2010; Van Uden-Kraan et al., 2008), active members are likely to obtain additional benefits (Nimrod, 2016). For example, Barak and Dolev-Cohen (2006) found that the higher an individual's activity level, the lower the level of distress experienced a few months later. Moreover, on a practical level, participation in online support groups was linked to greater adherence to health goals and for a longer period of time than non-participation (Richardson et al., 2010). This could be due to receiving continued encouragement from group members. Thus, while online support groups are beneficial to both active and passive users, it is likely that engagement within these groups or communities may enhance benefits, particularly in the long term.

Lurking in e-Learning Environments

Internet-based electronic learning (e-learning) systems have revolutionized education, challenging institutions to develop pedagogies and practices which are more student-focused, flexible, and personalized (Wanner & Palmer, 2015). Over the past decade or so, e-learning has radically impacted how students learn at all stages of education (Moller, Foshay, & Huett, 2008). At the most rudimentary level, the Internet creates opportunities

The Psychology of Online Lurking

to learn in ways which would have been impossible without it and, most importantly, time and location now place far fewer restrictions on access to education (Garrison & Kanuka, 2004).

Evidence supports the notion that universities and other learning establishments are rapidly embracing “blended” or “hybrid” learning, i.e., the integration of online learning with traditional face-to-face methods (Goeman & Van Laer, 2012; Moskal, Dziuban, & Hartman, 2013). Furthermore, this now reflects the learning experiences for the vast majority of students in higher education, at least in more developed and industrialized nations (Johnson, Adams Becker, Estrada, & Freeman, 2015; NMC Horizon Report, 2015). The fact that aspects of a course may be delivered online makes it easier to balance other commitments, such as work and family life, with studying (Deschacht & Goeman, 2015; Vaughan, 2007). A number of factors have been proposed as drivers for the blended learning boom, including a demand for more accessible courses (Johnson, Adams, & Cummins, 2012; NMC Horizon Report, 2015), a more technologically savvy/digitally literate generation who desire to use their own devices during their learning (NMC Horizon Report, 2015), economic constraints, for instance, tighter budgets for universities and rising tuition fees (Allen & Seaman, 2013; Desai, Hart, & Richards, 2008), as well as evolving pedagogical approaches to teaching and learning (Allen & Seaman, 2013).

Advantages and Disadvantages to Blended Learning Approaches

As the vast majority of students’ higher education experiences will involve e-learning environments, discussing the merits and drawbacks of this approach may help to elucidate why some learners do not actively participate in online learning environments. One of the most cited disadvantages to online interactions is the paucity of social communication cues. For instance, non-verbal signals such as facial expressions and eye gaze cannot be communicated within the asynchronous, text-only discussion forums regularly found on Virtual Learning Environments (VLEs) like Blackboard or Canvas (Hill, Song, & West, 2009; Mazuro & Rao, 2011). There is abundant evidence that these cues play a significant role in human communication (e.g., see Argyle, 2013). Even online media that provides access to visual information (e.g., videoconferencing services like Skype) are not the same as face-to-face interaction, and there is ample evidence to suggest that non-verbal signals, although present, may be attenuated and therefore do not have the same performative impact (e.g., see Fullwood, 2007; Fullwood & Finn, 2010).

The fact that this important social information is filtered out in computer-mediated communication (CMC) convinced early researchers that online interactions were less friendly, colder, more impersonal, more task-focused, and more business-like in nature (Hiltz, Johnson, & Turoff, 1986; Rice & Love, 1987). More recent theoretical perspectives, however (e.g., Social Information Processing theory, Walther, 2008), argue that the more individuals are highly motivated to manage the impressions of others and develop

The Psychology of Online Lurking

relationships online, the more they are likely to compensate when certain cues are missing, i.e., gathering and interpreting social information from other cues available online. These cues include language choice, the use of emoticons, or other forms of “textspeak” (Fullwood, Quinn, Chen-Wilson, Chadwick, & Reynolds, 2015).

Notwithstanding this perspective, CMC still creates a social distance between the student and his or her lecturers and peers, and may be one reason why drop-out rates tend to be higher on courses which are exclusively or predominantly delivered online. These students are more likely to report feeling isolated and unsupported compared to students who attend in person (e.g., see Deschacht & Goeman, 2015; Diaz, 2000; Frankola, 2001; Levy, 2007). However, it is also important to acknowledge that the backgrounds of students signing up for online courses, or courses which have a higher online component, tend to be quite different, on average, to those who take “traditional” courses. For example, they may be more likely to have disabilities, come from lower socioeconomic backgrounds, be mature, or have dependents (Dekker, Pechenizkiy, & Vleeshouwers, 2009; Diaz, 2000; Rivera & Rice, 2002). Therefore, this must also be factored in to the equation when trying to explain attrition rates.

The educational advantages of blended or online learning approaches are well documented in the academic literature. For instance, via VLEs students can access learning resources at their own convenience (Garrison & Kanuka, 2004; Mazuro & Rao, 2011) so they can learn at a pace that is comfortable for them (Belfi et al., 2015), and develop higher levels of independence (Ginns, Prosser, & Barrie, 2007). E-learning widens participation (Davies & Graff, 2005), and asynchronous discussion forums can promote group learning, collaboration and communication skills (Fåhræus, 2004; Mazuro & Rao, 2011). Additionally, setting online discussion tasks can enable the development of higher order thinking skills because students are permitted time to reflect upon their contributions before making them (Cooner, 2010; Mazuro & Rao, 2011). Furthermore, according to the Online Disinhibition Effect, there is an expectation that online spaces are more egalitarian and socially liberating because cues to status and authority will be minimized (Suler, 2004). Theoretically, then, students who are shy or socially anxious would feel more comfortable contributing here than face-to-face. Although the research evidence for the impact of blended learning on actual student performance is somewhat mixed, a recent meta-analysis by Liu and colleagues (2016) supports the general perspective that blended learning approaches lead to more effective educational outcomes than non-blended instruction. However, the authors advise caution in interpreting these data given that different institutions will adopt blended learning in quite different ways, including the relative proportion of online versus offline activities and the specific tasks that students perform online between courses, which may be sources of heterogeneity.

Predictors of Active and Passive Participation in e-Learning Environments

The Psychology of Online Lurking

There is the argument that delivering learning online allows less independent or less motivated students to hide in the background or refrain from active participation. In the physical classroom, educators can call upon non-participating students to encourage them to join in class discussions, but this may be more difficult to achieve online. In e-learning environments there is considerable variation in terms of the amount (and quality) of contributions students make (Davies & Graff, 2005; Giesbers, Rienties, Tempelaar, & Gijsselaers, 2013). One explanation that may account for such a large variation in students' involvement in e-learning environments might lie in the individual differences of learners in their levels of motivation. Some learners are much more autonomous or intrinsically motivated than others, and are likely to engage in learning activities of all types simply because they find learning an enjoyable and challenging experience (Black & Deci, 2000; Giesbers et al., 2013). On the other hand, other learners may be more extrinsically focused and may require larger amounts of support and encouragement to participate, partly because they may feel that they have less control over the learning process (Giesbers et al., 2013).

Referring back to SDT (Deci & Ryan, 2008), three basic needs should be met in order for students to feel sufficiently motivated and happy to engage in the learning process. Students need to feel a level of control over their learning experience, connected to their fellow learners and teachers, and that they have the necessary skills and abilities to perform the learning tasks set for them. Furthermore, the extent to which these needs are satisfied will fluctuate according to contextual factors, for example, deadlines, quality of learning material, support given by teachers, and so on (Giesbers et al., 2013; Ryan & Deci, 2000). Research has found that levels of participation in e-learning environments can be predicted by the extent to which a student is extrinsically or intrinsically motivated (e.g., Fırat, Kılınc, & Yüzer, 2018; Vanslambrouck, Zhu, Lombaerts, Philipsen, & Tondeur, 2018; Waheed, Kaur, Ain, & Hussain, 2016). Lurkers may be more likely to have extrinsically focused motivations, and may feel less autonomous, less included, and that they have less control over their learning (Giesbers et al., 2013; Rienties et al., 2009). Although students will likely differ in their motivation levels, the implication is that through supporting students to become more autonomous, to feel more included, and to feel that they have more control over their learning, lurkers may be transformed into more active participants (Giesbers et al., 2013).

A further theoretical perspective which may help to explain lurking in an educational context is the Technology Acceptance Model (TAM) (Davis, 1989). The basic premise of TAM is that intention to use and actual engagement with any form of technology (including e-learning platforms) can be predicted by two factors: perceived ease of use (i.e., the extent to which a student might find using e-learning systems intuitive and uncomplicated) and perceived usefulness (i.e., the extent to which a learner might feel that engaging with an e-learning system will aid them to learn and improve their educational performance). Evidence in the academic literature supports the notion that TAM is a good predictor of students' intention to engage with e-learning platforms (e.g., Park, 2009) as well as their actual levels of participation (e.g., Van Raaij & Schepers, 2008). However, when applying TAM and SDT to understanding lurking behavior, the

The Psychology of Online Lurking

implication is that some learners lurk because extrinsic factors (e.g., lack of support) may be inhibiting their participation. However, as mentioned, many lurkers may specifically avoid making direct contributions because they are engaging in goal-directed behavior. In other words, they take what they need from existing contributions without feeling it valuable to them to add to the discourse. In this sense, some lurkers may be taking a more strategic approach to their education and choosing which activities they engage in based on their perceptions of what would most benefit their academic progression and performance (Mazuro & Rao, 2011). This is certainly not surprising in the current education climate where many students will need to balance working and family lives with their education.

Outcomes of Active and Passive Participation on Education Success

Generally, levels of student engagement have been shown to be a strong predictor of academic performance; unsurprisingly, students who put more effort into their studies are likely to achieve better grades (e.g., Hughes, Luo, Kwok, & Loyd, 2008; Ladd & Dinella, 2009). Similarly, there is some evidence to suggest that those who lurk on e-learning platforms receive poorer grades than those who actively post, and that the number of posts that lurkers read is also not related to academic performance (Palmer, Holt, & Bray, 2008). This suggests that even those lurkers who are more actively engaged in their learning are not benefitting substantially from sitting in the background. Although there is the argument that academic ability could be a mediator to this relationship (i.e., better students are just more motivated to engage in all aspects of learning), further evidence from the same study suggests that prior academic ability also predicted a student's final grade on the module, but, crucially, did not correlate with the number of posts made. In other words, both of these variables are significant predictors of academic performance independent of one another.

There is also evidence to support the perspective that lurkers are not at an educational disadvantage compared to active participants. Beaudoin (2002) categorized students into three groups depending on their level of engagement in an online course. High visibility students were those who logged at least 1,000 words in one of the two one-week online conferences; low visibility students were those who registered no log ins to one of the online conferences; and no visibility students were those who did not log in to either of the two conferences. Although the sample size was fairly modest ($n=55$), the preliminary findings showed that despite a difference in educational outcomes when comparing high-visibility students with no visibility, there was no difference between the high- and low-visibility students. This suggests that even when students do not actively contribute to discussions, some form of learning is still taking place.

In a much larger study of 513 students using the VLE platform Blackboard, Webb and colleagues (2004) noted that both the number of "accesses" and the number of "posts" made by students significantly and positively related to student grades. The worst performing students were those who never accessed the VLE and made no contributions

The Psychology of Online Lurking

at all. Although this might suggest that regularly accessing material and contributing to asynchronous discussions leads to improved academic performance, it is also further evidence to support the notion that “lurking” is still some form of “working” and can have some educational benefits (Mazuro & Rao, 2011). Mazuro and Rao (2011) also argue that non-participation may be characteristic of students who simply fail to engage with their studies generally. In this sense, the contention is that, although students who participate on all levels are likely to benefit most, lurking in e-learning contexts should not be viewed as entirely negative. Furthermore, posting does not necessarily imply that students are getting the most out of their learning experience. For example, Dennen (2008) found that some students focus on posting messages more than reading them because they may be motivated to fulfil course requirements. These students tend to have fewer positive perceptions regarding the impact of e-learning activity on their learning. Prolific posting is one thing, but the quality of the posts is another matter entirely.

Recommendations for Engaging Lurkers

Even though lurkers may still obtain positive benefits from participating in online communities, they should still be encouraged to participate in a more active sense whenever possible. Indeed, evidence suggests that students who participate on all levels get the most out of their education; this is also true of e-learning aspects (Webb, Jones, Barker, & van Schaik, 2004) and that active participators in online support groups are more likely to adhere to their health goals (Richardson et al., 2010). At the very least, more contributions will always add richness to any online community due to an escalation in the number of ideas, viewpoints, and experiences shared (Fullwood, 2016).

A number of strategies could be considered to encourage active participation from students in e-learning environments. First, educators should consider the relative benefits of engaging students in synchronous (i.e., taking place in real time) versus asynchronous (i.e., taking place outside of real time) discussions and may want to incorporate both into their lesson plans. Although asynchronous communication has the advantage of permitting students time to reflect on their contributions, which has been argued contributes to the development of higher order thinking skills (Cooner, 2010; Mazuro & Rao, 2011), synchronous communication has been shown to increase motivation for learning because students feel less restricted by course content and can more easily work in a collaborative way (Hrastinski, 2008). Referring back to the ideas proposed by Giesbers et al. (2013), synchronous modes of communication (e.g., videoconferencing or instant messaging) in which educators are directly involved may have a positive impact on students’ motivation levels, and as feedback is provided instantaneously, this may affect a student’s sense of competency. Additionally, particularly in a videoconferencing context, communication should be more personal and may positively affect a student’s sense of relatedness. Finally, a student’s sense of autonomy may be influenced by peers and educators who provide opportune process-related

The Psychology of Online Lurking

feedback. Moreover, it might also be more difficult for students to hide from the group in synchronous modes of communication given that lack of participation will be more immediately obvious to other contributors (Carr et al., 2004).

A further recommendation for encouraging participation from lurkers includes using “students as facilitators” in order to entice fellow students into contributing to online discussions. The idea here is that students might feel less intimidated sharing their thoughts with fellow students than with their lecturers. Hew and Cheung (2008) discuss a variety of successful student facilitation techniques, the most fruitful of which involved the student facilitator indicating their stance on a topic when they responded to another post or started a new thread. For example, beginning a reply with “I think that ... ” or “I’m not sure I agree with this because ... ” may help to put other potential contributors at ease in knowing that it is acceptable to share personal opinions. Mazuro and Rao (2011) note, however, that this strategy will not always lead to success, particularly if the student feels that his or her opinion is very different from the posters. This may have the effect of discouraging involvement. In order to counteract the potential for hostility that differing viewpoints can sometimes evoke, Mazuro and Rao (2011) discuss the importance of establishing ground rules for appropriate behavior, such as clarifying at the outset that differences in opinion are natural, and that contributors should be respectful of viewpoints that differ from their own. Finally, educators may elicit contributions from quieter students by asking them questions directly, or personally inviting them to post.

In terms of online support groups, non-participation can become problematic when a large proportion of group members do not make any contributions, and individuals do not receive responses to their messages. This not only affects the group dynamics and the level of support offered, but also prevents members from accessing a variety of views and opinions. Encouraging participation in online support groups, therefore, is an important part of ensuring success of the online community. Group moderators can play a significant role here by providing information about the group when new members join and actively encouraging them to post. Moreover, moderators can create an incentive for participation, e.g., posting a list of top contributors to the site (Fullwood, 2016). Ensuring quick responses to new members is also important in motivating engagement. Finally, creating separate groups for newcomers within an online community can encourage participation early on. As individuals may still be learning about the larger group dynamics, participation with other new members can foster commitment to the group and act as a stepping stone to interaction with more experienced group members.

Conclusion

Lurking, or passive online participation, has previously been considered a negative online behavior, with individuals drawing upon the social capital in an online environment without providing anything in return. However, current literature exposes the nuances and complexity of this online behavior with both personal and situational factors contributing to active or passive online participation. Indeed, not only do individuals vary with regard to their participation across different groups, but they can also shift between active or passive participation depending on their current goals and motivations. Reasons for joining a group vary from seeking information to social interaction or support, and the extent to which these goals can be gratified through active or passive participation affect the user's engagement. Therefore, it is argued that lurking is a strategic and goal-driven process (Preece et al., 2004; Nonnecke & Preece, 2003). In addition to an individual's goals, their individual differences, self-efficacy, and privacy concerns have also been shown to impact their levels of online participation. Moreover, situational factors such as the group dynamics, reputation, and the user's commitment to the group also influence users' willingness to participate. Thus, myriad factors contribute to active and passive participation in various online spaces and combine to influence individuals' intrinsic and extrinsic motivation to participate. As such, lurking may simply be another form of engagement in online spaces. With regard to the outcomes of active and passive use, studies have shown that both active and passive participation in online communities is associated with benefits to group members, although there is also evidence to suggest that active members obtain additional benefits through their interactions with others. This includes higher social support in the context of health or potentially higher academic performance in the context of e-learning. As such, enhancing participation is recommended, particularly in the context of online support and e-learning.

References

- Allen, I. E., & Seaman, J. (2013). *Changing Course: Ten years of tracking online education in the United States*. Oaklandm CA: Babson Survey Research Group and Quahog Research Group. Retrieved from <http://files.eric.ed.gov/fulltext/ED541571.pdf>
- Argyle, M. (2013). *Bodily communication*. New York: Routledge.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review* 84(2), 191.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist* 28(2), 117-148.

The Psychology of Online Lurking

Barak, A., & Dolev-Cohen, M. (2006). Does activity level in online support groups for distressed adolescents determine emotional relief. *Counselling and Psychotherapy Research* 6(3), 186-190.

Beaudoin, M. F. (2002). Learning or lurking? Tracking the "invisible" online student. *The Internet and Higher Education* 5(2), 147-155.

Belfi, L. M., Bartolotta, R. J., Giambrone, A. E., Davi, C., & Min, R. J. (2015). "Flipping" the introductory clerkship in radiology: Impact on medical student performance and perceptions. *Academic Radiology* 22(6), 794-801.

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education* 84(6), 740-756.

Blumler, J. G., & Katz, E. (Eds.) (1974). *The Uses of Mass Communications: Current Perspectives on Gratifications Research. Sage Annual Reviews of Communication Research Volume III*. Beverly Hills, CA: Sage.

Bryant, S. L., Forte, A., & Bruckman, A. (2005). Becoming Wikipedian: Transformation of participation in a collaborative online encyclopedia. In *Proceedings of the 2005 International ACM SIGGROUP conference on Supporting group work* (pp. 1-10) 6-9 November, Sanibel Island, FL. New York: ACM.

Burke, M., Marlow, C., & Lento, T. (2009). Feed me: Motivating newcomer contribution in social network sites. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 945-954), 4-9 April, Boston, MA. New York: ACM.

Carr, T., Cox, L., Eden, N., & Hanslo, M. (2004). From peripheral to full participation in a blended trade bargaining simulation. *British Journal of Educational Technology* 35(2), 197-211.

Chung, J. E. (2014). Social networking in online support groups for health: How online social networking benefits patients. *Journal of Health Communication* 19(6), 639-659.

Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology* 94, 95-120.

Cooner, T. S. (2010). Creating opportunities for students in large cohorts to reflect in and on practice: Lessons learnt from a formative evaluation of students' experiences of a technology-enhanced blended learning design. *British Journal of Educational Technology* 41(2), 271-286.

Cullen, R., & Morse, S. (2011). Who's contributing: Do personality traits influence the level and type of participation in online communities. In *2011 44th Hawaii International*

The Psychology of Online Lurking

Conference on System Sciences (HICSS) (pp. 1–11). 4–7 January, Kauai, Hawaii. New York: IEEE.

Cullen, R., & Sommer, L. (2011). Participatory democracy and the value of online community networks: An exploration of online and offline communities engaged in civil society and political activity. *Government Information Quarterly* 28(2), 148–154.

Davies, J., & Graff, M. (2005). Performance in e-learning: Online participation and student grades. *British Journal of Educational Technology* 36(4), 657–663.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13(3), 319–340.

Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry* 11(4), 227–268.

Deci, E.L., & Ryan, R.M. (2008). Self-Determination Theory: A Macrotheory of Human Motivation, Development, and Health. *Canadian Psychology* 49(3): 182–185.

Deci, E. L., & Ryan, R. M. (2011). Self-determination theory. In P. A. M Van Lange, A. W. Kruglanski, and E. T. Higgins (Eds.), *Handbook of Theories of Social Psychology Vol. 1* (pp. 416–433). London: Sage.

Dekker, G., Pechenizkiy, M., & Vleeshouwers, J. (2009). Predicting students drop out: A case study. In *Proceedings of the Second International Conference on Educational Data Mining (EDM)* (pp. 41–50), 1–3 July, Cordoba, Spain. Worcester, MA: IEDMS.

Dennen, V. P. (2008). Pedagogical lurking: Student engagement in non-posting discussion behavior. *Computers in Human Behavior* 24(4), 1624–1633.

Desai, M.S., Hart, J., & Richards, T.C. (2008). E-learning: Paradigm shift in education. *Education* 129(2), 327–335.

Deschacht, N., & Goeman, K. (2015). The effect of blended learning on course persistence and performance of adult learners: A difference-in-differences analysis. *Computers & Education* 87, 83–89.

Diaz, D. P. (2000). *Comparison of student characteristics, and evaluation of student success, in an online health education course* (Unpublished doctoral dissertation) Southeastern University, Fort Lauderdale, Florida.

Du, Y. (2006). Modeling the behavior of lurkers in online communities using intentional agents. In *International Conference on Computational Intelligence for Modelling Control and Automation and International Conference on Intelligent Agents, Web Technologies and Internet Commerce CIMCA '06* (p. 60). 28 November–1 December, Sydney, NSW, Australia. New York: IEEE.

The Psychology of Online Lurking

Edelmann, N. (2013). Reviewing the definitions of “lurkers” and some implications for online research. *Cyberpsychology, Behavior & Social Networking* 16(9), 645–649.

Fåhræus, E. R. (2004). Distance education students moving towards collaborative learning-A field study of Australian distance education students and systems. *Journal of Educational Technology & Society* 7(2), 129–140.

Firat, M., Kılınc, H., & Yüzer, T. V. (2018). Level of intrinsic motivation of distance education students in e-learning environments. *Journal of Computer Assisted Learning* 34(1), 63–70.

Frankola, K. (2001). Why online learners drop out. *Workforce* 80(10), 53–59.

Fullwood, C. (2007). The effect of mediation on impression formation: A comparison of face-to-face & video-mediated conditions. *Applied Ergonomics* 38, 267–273.

Fullwood, C. (2016). Online support groups: Enhancing the user experience with cyberpsychological theory. In A. Attrill & C. Fullwood (Eds.), *Applied Cyberpsychology: Practical applications of cyberpsychological research and theory*. New York: Palgrave Macmillan.

Fullwood, C., & Finn, M. (2010). Video-mediated communication and impression formation: An integrative review. In A. C. Rayler (Ed.), *Videoconferencing: Technology, Impact and Applications* (pp. 35–55). Hauppauge, NY: Nova Science.

Fullwood, C., Quinn, S., Chen-Wilson, J., Chadwick, D., & Reynolds, K. (2015). Put on a smiley face: Textspeak and personality perceptions. *Cyberpsychology, Behavior, and Social Networking* 18(3), 147–151.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education* 7(2), 95–105.

Giesbers, B., Rienties, B., Tempelaar, D., & Gijsselaers, W. (2013). Investigating the relations between motivation, tool use, participation, and performance in an e-learning course using web-videoconferencing. *Computers in Human Behavior* 29(1), 285–292.

Ginossar, T. (2008). Online participation: A content analysis of differences in utilization of two online cancer communities by men and women, patients and family members. *Health Communication* 23(1), 1–12.

Ginns, P., Prosser, M., & Barrie, S. (2007). Students' perceptions of teaching quality in higher education: The perspective of currently enrolled students. *Studies in Higher Education* 32(5), 603–615.

Goeman, K., & Van Laer, S. (2012). Blended multicampus education for lifelong learners. In *The future of learning innovations and learning quality. How do they fit together:*

The Psychology of Online Lurking

Proceedings of the European Conference LINQ 2012 (pp. 97–103). 23 October, Brussels, Belgium. Berlin: Gito.

Golder, S. A., & Donath, J. (2004). Social roles in electronic communities. *Internet Research* 5, 19–22.

Han, J. Y., Hou, J., Kim, E., & Gustafson, D. H. (2014). Lurking as an active participation process: A longitudinal investigation of engagement with an online cancer support group. *Health Communication* 29(9), 911–923.

Han, J. Y., Kim, J. H., Yoon, H. J., Shim, M., McTavish, F. M., & Gustafson, D. H. (2012). Social and psychological determinants of levels of engagement with an online breast cancer support group: Posters, lurkers, and nonusers. *Journal of Health Communication* 17(3), 356–371.

Han, J. Y., Shah, D. V., Kim, E., Namkoong, K., Lee, S. Y., Moon, T. J., Cleland, R., Bu, Q.L., McTavish, F.M. ... & Gustafson, D. H. (2011). Empathic exchanges in online cancer support groups: Distinguishing message expression and reception effects. *Health Communication* 26(2), 185–197.

Hew, K. F., & Cheung, W. S. (2008). Attracting student participation in asynchronous online discussions: A case study of peer facilitation. *Computers & Education* 51(3), 1111–1124.

Hill, J. R., Song, L., & West, R. E. (2009). Social learning theory and web-based learning environments: A review of research and discussion of implications. *The American Journal of Distance Education* 23(2), 88–103.

Hiltz, S. R., Johnson, K., & Turoff, M. (1986). Experiments in group decision making communication process and outcome in face-to-face versus computerized conferences. *Human communication research* 13(2), 225–252.

Hornig, S. M. (2016). A study of active and passive user participation in virtual communities. *Journal of Electronic Commerce Research* 17(4).

Hrastinski, S. (2008). The potential of synchronous communication to enhance participation in online discussions: A case study of two e-learning courses. *Information & Management* 45(7), 499–506.

Hughes, J. N., Luo, W., Kwok, O. M., & Loyd, L. K. (2008). Teacher-student support, effortful engagement, and achievement: A 3-year longitudinal study. *Journal of Educational Psychology* 100(1), 1.

Johnson, L., Adams, S., & Cummins, M. (2012). *Technology outlook for Australian Tertiary Education 2012–2017: An NMC horizon report regional analysis*. Austin, Texas: The New

The Psychology of Online Lurking

Media Consortium. Accessed on 10/08/2017 Retrieve from <https://eric.ed.gov/?id=ED532405>

Johnson, L., Adams Becker, S., Estrada, V., and Freeman, A. (2015). NMC Horizon Report: 2015 Higher Education Edition. Austin, Texas: The New Media Consortium. Accessed on 10/08/2017 from <http://files.eric.ed.gov/fulltext/ED559357.pdf>

King, S. A. (1994). Of electronic groups for recovering addicts. *Interpersonal Computing and Technology* 2(3), 47-56.

Koh, J., Kim, Y. G., Butler, B., & Bock, G. W. (2007). Encouraging participation in virtual communities. *Communications of the ACM* 50(2), 68-73.

Kollock, P., & Smith, M. (1996). Managing the virtual commons. In Susan Herring (Ed.), *Computer-mediated communication: Linguistic, Social, and Cross-Cultural Perspectives* (pp. 109-128). Amsterdam: John Benjamins.

Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues* 58(1), 49-74.

Küçük, M. (2010). Lurking in online asynchronous discussion. *Procedia Social and Behavioural Sciences* 2, 2260-2263.

Ladd, G. W., & Dinella, L. M. (2009). Continuity and change in early school engagement: Predictive of children's achievement trajectories from first to eighth grade? *Journal of Educational Psychology* 101(1), 190.

Laine, M. S. S., Ercal, G., & Luo, B. (2011). User groups in social networks: An experimental study on YouTube. In *2011 44th Hawaii International Conference on System Sciences (HICSS)* (pp. 1-10). 4-7 January, Kauai, Hawaii. New York: IEEE.

Lakhani, K. R., & Von Hippel, E. (2003). How open source software works: "Free" user-to-user assistance. *Research Policy* 32(6), 923-943.

Levy, Y. (2007). Comparing dropouts and persistence in e-learning courses. *Computers & Education* 48(2), 185-204.

Liu, Q., Peng, W., Zhang, F., Hu, R., Li, Y., & Yan, W. (2016). The effectiveness of blended learning in health professions: Systematic review and meta-analysis. *Journal of Medical Internet Research* 18(1), e2. doi: 10.2196/jmir.4807

Macedo-Rouet, M., Ney, M., Charles, S., & Lallich-Boidin, G. (2009). Students' performance and satisfaction with web vs. paper-based practice quizzes and lecture notes. *Computers & Education* 53(2), 375-384.

Malik, S. H., & Coulson, N. S. (2011). A comparison of lurkers and posters within infertility online support groups. *CIN: Computers, Informatics, Nursing* 29(10), 564-573.

The Psychology of Online Lurking

- Malinen, S. (2015). Understanding user participation in online communities: A systematic literature review of empirical studies. *Computers in Human Behavior*, *46*, 228–238.
- Mason, B. (1999). Issues in virtual ethnography. In K. Buckner (Ed.), Proceedings of Esprit i3 workshop on ethnographic studies in real and virtual environments: *Inhabited information spaces and connected communities* (pp. 61–69), 24–26 January, Edinburgh, Scotland. New York: ACM.
- Mazuro, C., & Rao, N. (2011). Online discussion forums in higher education: Is lurking working. *International Journal for Cross-Disciplinary Subjects in Education* *2*(2), 364–371.
- McKenna, K. Y., & Bargh, J. A. (1998). Coming out in the age of the Internet: Identity “demarginalization” through virtual group participation. *Journal of Personality and Social Psychology* *75*(3), 681.
- Mo, P. K., & Coulson, N. S. (2010). Empowering processes in online support groups among people living with HIV/AIDS: A comparative analysis of “lurkers” and “posters.” *Computers in Human Behavior* *26*, 1183–1193.
- Moller, L., Foshay, W. R., & Huett, J. (2008). Implications for instructional design on the potential of the web. *TechTrends*, *52*(4), 67.
- Moskal, P., Dziuban, C., & Hartman, J. (2013). Blended learning: A dangerous idea? *The Internet and Higher Education* *18*, 15–23.
- Muller, M. (2012). Lurking as a personal trait or situational disposition? Lurking and contributing in enterprise social media. In *Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work CSCW '12* (pp. 253–256), 11–15 February, Seattle, Washington. New York: ACM.
- Neelen, M., & Fetter, S. (2010). Lurking: A challenge or a fruitful strategy? A comparison between lurkers and active participants in an online corporate community of practice. *International Journal of Knowledge and Learning* *6*(4), 269–284.
- Nimrod, G. (2016). Beneficial participation: Lurking vs. posting in online support groups. In R. Ahmed & Bates, B. R. (Eds.), *Health communication and mass media: An integrated approach to policy and practice* (pp. 81–98). New York: Routledge.
- Nonnecke, B., & Preece, J. (2001). Why lurkers lurk. *AMCIS 2001 Proceedings*, 294.
- Nonnecke, B., & Preece, J. (2003). Silent participants: Getting to know lurkers better. In C. Lueg & D. Fisher (Eds.), *From Usenet to CoWebs: Interacting with social information spaces* (pp. 110–132). London: Springer Verlag.
- Nonnecke, B., Preece, J., & Andrews, D. (2004, January). What lurkers and posters think of each other [online community]. In *Proceedings of the 37th Annual Hawaii International*

The Psychology of Online Lurking

Conference on System Sciences, 2004. New York: IEEE. doi: 10.1109/HICSS.2004.1265462

Nonnecke, B., Andrews, D., & Preece, J. (2006). Non-public and public online community participation: Needs, attitudes and behavior. *Electronic Commerce Research* 6(1), 7–20.

Nov, O., Arazy, O., López, C., & Brusilovsky, P. (2013, April). Exploring personality-targeted UI design in online social participation systems. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 361–370). ACM.

Nov, O., Naaman, M., & Ye, C. (2010). Analysis of participation in an online photo-sharing community: A multidimensional perspective. *Journal of the Association for Information Science and Technology* 61(3), 555–566.

Oh, H. J., Lauckner, C., Boehmer, J., Fewins-Bliss, R., & Li, K. (2013). Facebooking for health: An examination into the solicitation and effects of health-related social support on social networking sites. *Computers in Human Behavior* 29(5), 2072–2080.

Orchard, L. J., & Fullwood, C. (2010). Current perspectives on personality and Internet use. *Social Science Computer Review* 28(2), 155–169.

Osatuyi, B. (2015). Is lurking an anxiety-masking strategy on social media sites? The effects of lurking and computer anxiety on explaining information privacy concern on social media platforms. *Computers in Human Behavior* 49, 324–332.

Palmer, S., Holt, D., & Bray, S. (2008). Does the discussion help? The impact of a formally assessed online discussion on final student results. *British Journal of Educational Technology* 39(5), 847–858.

Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning. *Journal of Educational Technology & Society* 12(3), 150.

Pennebaker, J. W. (1997). *Opening up: The healing power of emotional expression*. New York: Guilford.

Preece, J., Nonnecke, B., & Andrews, D. (2004). The top 5 reasons for lurking: Improving community experiences for everyone. Special Issue of *Computers in Human Behavior: An Interdisciplinary Perspective* 20(2), 201–223.

Rau, P. L. P., Gao, Q., & Ding, Y. (2008). Relationship between the level of intimacy and lurking in online social network services. *Computers in Human Behavior* 24(6), 2757–2770.

Rice, R. E., & Love, G. (1987). Electronic emotion: Socioemotional content in a computer-mediated communication network. *Communication Research* 14(1), 85–108.

The Psychology of Online Lurking

Richardson, C. R., Buis, L. R., Janney, A. W., Goodrich, D. E., Sen, A., Hess, M. L., Mehari, K.S., Fortlage, L.A., Resnick, P.J., Zikmund-Fisher, B.J., Strecher, V.J., ... & Strecher, V. J. (2010). An online community improves adherence in an Internet-mediated walking program. Part 1: Results of a randomized controlled trial. *Journal of Medical Internet Research* 12(4), e71.

Ridings, C. M., & Gefen, D. (2004). Virtual community attraction: Why people hang out online. *Journal of Computer-Mediated Communication* 10(1). doi: 10.1111/j.1083-6101.2004.tb00229.x

Ridings, C., Gefen, D., & Arinze, B. (2006). Psychological barriers: Lurker and poster motivation and behavior in online communities. *Communications of the Association for Information Systems* 18(1), 16.

Rienties, B., Tempelaar, D., Van den Bossche, P., Gijssels, W., & Segers, M. (2009). The role of academic motivation in computer-supported collaborative learning. *Computers in Human Behavior* 25(6), 1195-1206.

Rivera, J. C., & Rice, M. L. (2002). A comparison of student outcomes & satisfaction between traditional & web-based course offerings. *Online Journal of Distance Learning Administration* 5(3). Retrieved from <https://docplayer.net/10007747-A-comparison-of-student-outcomes-satisfaction-between-traditional-web-based-course-offerings.html>

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior* 25(2), 578-586.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology* 25(1), 54-67.

Schneider, A., Von Krogh, G., & Jäger, P. (2013). "What's coming next?" Epistemic curiosity and lurking behavior in online communities. *Computers in Human Behavior* 29(1), 293-303.

Setoyama, Y., Yamazaki, Y., & Namayama, K. (2011). Benefits of peer support in online Japanese breast cancer communities: Differences between lurkers and posters. *Journal of medical Internet research* 13(4).

Suler, J. (2004). The online disinhibition effect. *Cyberpsychology & Behavior* 7(3), 321-326.

Sun, N., Rau, P. P. L., & Ma, L. (2014). Understanding lurkers in online communities: A literature review. *Computers in Human Behavior* 38, 110-117.

The Psychology of Online Lurking

- Tanis, M., Das, E., & Fortgens-Sillmann, M. (2011). Finding care for the caregiver? Active participation in online health forums attenuates the negative effect of caregiver strain on wellbeing. *Communications* 36(1), 51-66.
- Taylor, J., & Turner, R. J. (2001). A longitudinal study of the role and significance of mattering to others for depressive symptoms. *Journal of Health and Social Behavior* 42(3), 310-325.
- Tonteri, L., Kosonen, M., Ellonen, H. K., & Tarkiainen, A. (2011). Antecedents of an experienced sense of virtual community. *Computers in Human Behavior* 27(6), 2215-2223.
- Van Dijck, J. (2013). *The culture of connectivity: A critical history of social media*. Oxford: Oxford University Press.
- Van Raaij, E. M., & Schepers, J. J. L. (2008). The acceptance and use of a virtual learning environment in China. *Computers and Education* 50, 838-852.
- Van Uden-Kraan, C. F., Drossaert, C. H. C., Taal, E., Shaw, B. R., Seydel, E. R., & Van de Laar, M. A. F. J. (2008). Empowering processes and outcomes of participation in online support groups for patients with breast cancer, arthritis, or fibromyalgia. *Qualitative Health Research* 18(3), 405-417.
- Van Uden-Kraan, C. F., Drossaert, C. H., Taal, E., Smit, W. M., Moens, H. J. B., Siesling, S., Seydel, E.R., & Van de Laar, M. A. (2009). Health-related Internet use by patients with somatic diseases: Frequency of use and characteristics of users. *Informatics for Health and Social Care* 34(1), 18-29.
- Vanslambrouck, S., Zhu, C., Lombaerts, K., Philipsen, B., & Tondeur, J. (2018). Students' motivation and subjective task value of participating in online and blended learning environments. *The Internet and Higher Education* 36, 33-40.
- Vaughan, N. (2007). Perspectives on blended learning in higher education. *International Journal on eLearning* 6(1), 81.
- Waheed, M., Kaur, K., Ain, N., & Hussain, N. (2016). Perceived learning outcomes from Moodle: An empirical study of intrinsic and extrinsic motivating factors. *Information Development* 32(4), 1001-1013.
- Walther, J. B. (2008). The social information processing theory of computer-mediated communication. In L. Baxter & D. O. Braithwaite (Eds.), *Engaging theories in interpersonal communication* (pp. 391-404). Newbury Park, CA: Sage.
- Walther, J. B., & Boyd, S. (2002). Attraction to computer-mediated social support. In C. Lin & D. Atkin (Eds.), *Communication technology and society: Audience adoption and uses* (pp. 153-188). Cresswell: Hampton Press.

The Psychology of Online Lurking

Wanner, T., & Palmer, E. (2015). Personalising learning: Exploring student and teacher perceptions about flexible learning and assessment in a flipped university course. *Computers & Education* 88, 354–369.

Webb, E., Jones, A., Barker, P., & van Schaik, P. (2004). Using e-learning dialogues in higher education. *Innovations in Education and Teaching International* 41(1), 93–103.

Wise, K., Hamman, B., & Thorson, K. (2006). Moderation, response rate, and message interactivity: Features of online communities and their effects on intent to participate. *Journal of Computer-Mediated Communication* 12(1), 24–41.

Yeow, A., Johnson, S. L., & Faraj, S. (2006). Lurking: Legitimate or Illegitimate Peripheral Participation? In *Proceedings of the International Conference of Information Systems, (ICIS 2006)*, 10–13 December, Milwaukee, WI.

Zhou, T. (2011). Understanding online community user participation: A social influence perspective. *Internet Research* 21(1), 67–81.

Maša Popovac

Maša Popovac, University of Buckingham, UK

Chris Fullwood

Chris Fullwood, University of Wolverhampton, UK

