

# The “Digital Divide,” Social Media, and Education-Related Outcomes

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## ABSTRACT

Various scholars and practitioners advocate that instructors incorporate social media platforms such as Facebook and Twitter in higher education to enhance positive education-related outcomes. The push for integration relates to the perceived educational needs of the current generation of students who are enrolled in higher education and are known as “digital natives.” However, this literature review illustrates that the oft-cited divide between digital natives and digital immigrants, which is used as rationale for course enhancement via social media, is specious. In addition, extant research suggests that the use of Facebook and Twitter in higher education is correlated with at least three positive outcomes: an increase in student engagement; an increase in student perceptions of instructor credibility; and an increase in student perceptions of instructor immediacy. However, research about the effects of supplementing traditional in-class interaction with Facebook and Twitter is in its infancy. The authors conclude that the integration of social media into higher education should be undertaken with care because Millennial students may not be as technologically-savvy as originally thought, and because extant studies about the benefits of integrating social media into higher education are limited.

**Keywords:** *reflection levels, gained explicitly, secondary Schools, textbooks*

## INTRODUCTION

Arthur Levine, President of the Woodrow Wilson Fellowship Foundation and President Emeritus of Teachers College at Columbia University, writes that there is a mismatch between institutions of higher education and their students regarding goals and dynamics of education. Levine (2010) asserts:

What is certain is that higher education needs to change, because students won't [sic], and the digital revolution is not a passing fad. To be sure, the purposes of the university have not changed. They remain the preservation and advancement of knowledge and the education of our students . . . . What must change, however, is the means by which we educate the digital natives who are and will be sitting in our classrooms – employing calendars, locations, pedagogies, and learning materials consistent with ways our students learn most effectively. It means that the curriculum must meet our students where they are, not where we hope they might be or where we are (para. 12 and 13).

Levine is not the only scholar who advocates changing methods of instruction to match the focus of “digital natives.” Researchers in education and educational technology, scholars in economics and management, university advisors, student affairs professionals, and communication faculty and practitioners promote the integration of social media in university courses and activities to meet the needs of digital natives (Heilberger & Harper, 2008; Helvie-Mason, 2011; Jenness, 2011; Selwyn, 2011; Tapscott, 2011; Tay & Allen, 2011).

This literature review focuses on the issues associated with incorporating Facebook and Twitter in higher education.

Specifically, the researchers begin by providing a brief description of Facebook and Twitter, and how students use these social media platforms. The “digital divide;” that is, the social media disconnect between “digital natives” and “digital immigrants,” is analyzed, and research concerning student engagement, perceptions of instructor credibility and perceptions of instructor immediacy and their relationship to Facebook and Twitter is presented. Implications for integrating Facebook and Twitter into higher education courses are provided in the conclusion.

### **Characterization and Student Use Of Facebook And Twitter**

Created in 2004, Facebook was originally established for students at Harvard University but expanded to other university audiences and eventually opened to anyone over the age of 13. In September 2012, Facebook revealed that it has over 1.01 billion monthly active users and approximately 584 million users are active on the site on a daily basis (Olanoff, 2012). Facebook is a social media platform utilized by people who want to stay in touch with friends and family, and by organizations (companies, political groups, religious organizations, universities, etc.) that want to market and advertise their products, services, and viewpoints (Fact Sheet, 2012). Users can create a profile and request to “friend” others who already have profiles to gain access to their status updates. Status updates consist of brief comments that are visible to “friends,” as are photos and videos posted for sharing (Helvie-Mason, 2011). Research illustrates that whether or not Facebook is purposefully integrated into the university classroom, students are using Facebook in university settings to reflect on the university experience; exchange practical and academic information; display supplication and/or disengagement; and to banter (Selwyn, 2009).

Twitter is described as an information network that allows users to share ideas, stories, news, and personal information. Users request to follow other users and in turn, a user’s account may be “followed” in return. “Tweets” are small bursts of information limited to 140 characters. Users may also see photos, videos, and conversations in tweets (“About Twitter,” 2012). The approximately 170 million active Twitter users may choose to send and receive tweets on a personal Twitter page, as text messages on cell phones, and as instant messages on a computer (Lunden 2012; Daniells, 2012; Watson, 2011). People use Twitter to chat, share resources (such as URLs) and to report news; these functions have been replicated when instructors invite students to use Twitter both in and out of the classroom. Specifically, students use tweets to share, collaborate, brainstorm, engage in problem-solving, and create (Dunlap & Lowenthal, 2009).

### **Digital Natives and Millennial Students**

In his landmark 2001 article, Marc Prensky proclaimed there is a “digital divide” between “digital natives” and “digital immigrants.” Those who were born between the years 1980 and 2000 are deemed “native speakers of the digital language of computers, video games and the Internet” (Prensky, 2001, p. 1). This generation of “digital natives” is identified by many labels, including, “Millennials, Generation Y, Generation Me,” and the “iY Generation” to name a few. Concerning the manner in which Millennial students learn, Prensky stated, “Students think and process information fundamentally differently from their predecessors” (Prensky, 2001, p. 1). Prensky’s concept of the “digital natives’ and their computer-influenced styles of learning were reinforced by other educational scholars who also stressed the importance of adapting pedagogy to this generation of students. In fact, the idea that digital natives have different learning styles incited anxiety among academics and administrators in higher education. This in turn created an immediacy to implement more online courses and digital media use in academia (Yu, Tian, Vogel, & Kwok, 2010; Helvie-Mason, 2011; Tapscott, 2011).

The idea of a binary divide between digital natives and digital immigrants has been criticized for the lack of empirical support and the failure to consider differences among the members of the Millennial Generation. For example, in their review of evidence about digital natives, Bennet, Maton, and Kervin (2008) suggest that seminal literature about digital natives is “supported by anecdotes and appeals to common-sense beliefs” and that “this literature has been referenced, often uncritically, in a host of later publications” (p. 777). Helsper and Enyoun (2010) assert that “a generational distinction between natives and immigrants, us and them, is not reflected in empirical data” (p. 515). Other academics contend that claims about digital natives should be empirically challenged, such as the neuropsychological assumption that Millennials possess a different learning style compared with previous generations; a claim frequently used in arguments for pedagogical change (Brown & Czerniewicz, 2010; Selwyn, 2009b).

Educational researchers also question the assumption of generational differences and maintain that we should consider differences concerning the use of technology and learning styles among Millennial students. Helsper and Eynon (2010) found that breadth of use, experience, self-efficacy, and education are just as important, if not more, than age in explaining how people become digital natives (p. 504). Similarly, a study conducted by Bennet and Maton (2010) found that “young people grow up with different histories of access to technology and therefore different opportunities” (Bennett & Maton, 2010, p. 323). Bennett and Maton’s (2010) findings are supported by the Pew Institute’s (2006-2012) study on *Adult Gadget Ownership Over Time* which indicates that access and ownership of technology by adults and Millennial students is not much different. The study reports that by December 2011, 57% of adults owned a laptop, 55% owned a desktop, and 84% owned a cell phone. Additional studies suggest that Millennial students aren’t necessarily digital natives. Research conducted by the EDUCASE Center for Applied Research (ECAR) about undergraduate students and Information Technology (IT) found that although only 53% of students owned a desktop computer, 87% owned laptops, 11% owned netbooks, and 55% owned a smartphone (Dahlstrom, Grunwald, de Boor, & Vockley, 2011). Furthermore, Brown and Czerniewicz (2010) found that familiarity and experience using digital technology is a more relevant factor than age in the determination of digital use. This conclusion is also supported in Helsper and Enyon’s (2010) research, in which they site gender, education, experience, and breadth of use as important variables affecting how students use technology.

In all, “there is a pressing need to develop and promote realistic understandings of young people and digital technology if information professionals . . . are to play useful and meaningful roles in supporting generations of current young people” (Selwyn, 2009b, p. 366). We can promote a realistic understanding of the potential educational benefits of students’ technology use by considering a more nuanced conception of the “digital divide.” We can also develop a more realistic understanding of the relationship between the use of social media in the academy and positive education-related outcomes by examining theory and research associated with student engagement, perceptions of instructor credibility, and perceptions of instructor immediacy.

### Student Engagement

Student engagement was originally conceptualized as “the amount of physical and psychological energy that the student devotes to the academic experience” (Astin, 1984, p. 297). Although Astin’s conceptualization of student engagement is still referred to in the literature, the characterization of student engagement now includes the time and effort students invest in activities that are linked to positive education-related outcomes. Specifically, Astin’s definition of engagement is limited to time associated with purely academic outcomes. The current characterization includes not only the college or university academic experience but also interaction with peers, faculty, and involvement in co-curricular activities (Kuh, 2009; Pascarella & Terenzini, 2005). Kuh (2009) discovered that in-class engagement (“academic engagement”) and out-of-class engagement (“co-curricular” engagement) in educationally relevant activities are the two major components of student engagement.

Student engagement is associated with a variety of desired education-related outcomes and the concept has been studied extensively since 1984. Pascarella and Terenzine (2005) conducted a meta-analysis of studies regarding how college affects students and found that close faculty-student interaction is related to improved critical thinking and intellectual development on the part of students. This type of student engagement promotes student persistence and degree completion. Similarly, engagement in college-sponsored activities and having close on-campus friendships are correlated with student persistence and educational attainment. In addition, a high level of student engagement is correlated with a high level of knowledge acquisition and cognitive growth (Jenness, 2011; Pascarella & Terenzine, 2005). Student engagement is also positively related to moral and ethical development, psychosocial development, and self-esteem (Kuh, 2009; Yu, Tian, Vogel, & Kwok, 2010).

In *Good Practice in Student Affairs*, Baxter Magolda provides three principles to use when engaging students in active learning. These principles concern including students’ experiences in the teaching-learning process, validating students as “knowers,” and mutually constructing meaning (Magolda, 1999). For those students who are comfortable using social media, integrating such technology in the classroom has the potential to enhance and create a more active learning opportunity, thus meeting Magolda’s first principle. Furthermore, the utilization of technology acknowledges and *validates* that a student’s ability to process and assimilate information in a fast-paced environment is a valuable way of thinking, thereby fulfilling Magolda’s second principle (Magolda, 1999). Utilizing social media to enhance classroom learning enables the mutual construction of meaning by faculty and students through course-related discussions, thus achieving Magolda’s third principle. These discussions may also occur in conversations and communication outside of class. This is not to say that active learning promotes “letting students decide anything they wish, but rather advocates working jointly with students to put educators’ knowledge alongside student’s and engaging in genuine exploration of both” (Magolda, 1999, p. 27).

Further support for the use of social media platforms such as Twitter may be found in Arthur Chickering's theory of student identity development. Chickering, as stated in Evans, Forney, and Guido-DiBrito (1998), concludes that the student-faculty relationship can hold significant value in the development of college students. Specifically, Chickering suggests that students need to see faculty as individuals outside the classroom and may seek to engage students in a variety of interactions (Evans, Forney, & Guido-DiBrito, 1998). Twitter is a social media platform that can provide student-faculty interaction outside of the classroom. Writing about student-faculty interaction inside of the classroom, Taylor (2011) contends that in-class discussions are "less engaging for the majority of students, as the few most verbal and extroverted students tend to monopolize class discussion" (Taylor, 2011, p. 117). This may be rectified somewhat with social media platform integration within the classroom. When communicating online, people "feel less vulnerable about self-disclosing and acting out" (Suler, 2004, p. 322) and this may help reticent students engage in in-class discussions. The online "disinhibition effect" occurs when individuals or students separate online actions, personality, and lifestyle from those that take place offline. Suler (2004) further states that in the separation of actions, personality, and lifestyle, students essentially compartmentalize their online self. However, this compartmentalization "does not exist separate from the environment in which that self is expressed" (Suler, 2004, p. 325). Therefore, when utilizing a social media platform such as Twitter or Facebook in an educational setting, the expressed online self as student, although somewhat separated from the "real-life" self, is still a student because both online and offline environments are seated in academia.

### Facebook and Student Engagement

Although student engagement has been studied extensively in terms of face-to-face contexts, few studies have researched the association between Facebook and student engagement. Heilberger and Harper (2008) analyzed a 2007 study conducted by Heilberger (as cited in Heilberger & Harper, 2008) of 377 undergraduates, along with a report from the Higher Education Research Institute (HERI) (2007) based on responses from 31,500 first-year students at 114 colleges and universities. The HERI study revealed that 94% of respondents indicated that they use social networks on a weekly basis but they do not spend less time studying or engaging in other activities when compared to peers who do not use social networks. Heilberger found that 63.3% of students who spend one hour or less on Facebook each day report that they participate in at least one student organization, compared to 78.1% who report that they spend more than one hour a day on Facebook (Heilberger & Harper, 2008). In addition, 15% of students who reported more than six hours per week using social media also spent more than six hours per week participating in student groups and clubs (HERI, 2007). Heilberger and Harper concluded that:

students who spend more time on social networks [such as Facebook] are also spending more time on real-life social activities such as interacting and connecting with friends and participating in student clubs or groups, and they have a stronger connection to their institution and feel better about their social life (2008, p. 27).

Student affairs professional Reynol Junco has conducted many studies about the relationship between social media use and education-related outcomes. Junco (2012a) researched the relationship between student engagement and the frequency of Facebook use, and the frequency of engaging in specific Facebook activities as they relate to student engagement. Using a 19-item National Survey of Student Engagement (NSSE) instrument, Junco found that in general, time spent on Facebook is negatively associated with student engagement. In addition, communicative activities, such as creating or commenting on content, is positively related to engagement, while non-communicative activities, such as playing games and checking up on friends, is negatively related to student engagement. However, Junco (2012a) also found that time spent on Facebook is positively related to time spent engaging in co-curricular activities. Facebook activities such as commenting on content, viewing photos, and creating or RSVP'ing to events are positively associated with out-of-class engagement. Junco (2012a) concluded that depending on the outcome variable, time spent on Facebook and time spent engaged in specific Facebook activities can be positively predictive, negatively predictive, or positively and negatively predictive of engagement. Junco (2012b) encourages additional research about the relationship between Facebook and student engagement because "a more engaged student is a more successful student" (p. 11). Moreover, because gains in academic performance occur when students use social media to communicate about course content, further research about the association between Facebook use and student engagement is warranted (Junco, 2012b).

## Twitter and Student Engagement

Similar to the limited research concerning Facebook and student engagement, there are few studies about the effect of Twitter on student engagement. Junco, Heilberger and Loken (2010) sought to discover a causal link between the use of Twitter and other social media and student engagement. Student respondents were taught how to use Twitter and were asked to follow a single Twitter account and to follow each other. Using the 19-item NSSE scale and an examination of tweets, the authors found “students engaged with faculty and each other in a vibrant and connected virtual learning environment” (Junco et al, 2010, p. 8). NSSE scores were higher for the students who used Twitter than for students who did not. The use of Twitter not only resulted in a detailed discussion of themes in an assigned book (more so than would have been possible in a limited class period) but also facilitated the creation of relationships during academic discussions. Students shared values and interests and these connections occurred across diverse groups (Junco et al., 2010). Students also generated more and different types of questions about course content than would have been generated in typical class discussions. Specifically, some students were uncharacteristically candid, which influenced the researchers to suggest that Twitter helps “students feel more comfortable asking questions they may not be comfortable with asking in class” (Junco et al., 2010, p. 9). Overall, the authors concluded that the use of Twitter improved contact between students and faculty (because its use tapped into students’ digital lifestyles). The use of Twitter also encouraged students to cooperate (in that they asked questions about course content, worked together on service learning projects, and provided emotional support to each other); and promoted active learning (because its use helped students relate course information to their experiences both inside and outside of class) (Junco et al, 2010).

Similar results concerning the benefits of student Twitter use were obtained in a study conducted at the University of Leicester in England. As reported in *Science Daily*, biologist and lead researcher Alan Cann, Ph.D., set up a system for first-semester students to communicate with faculty and classmates by tweeting. Cann said that using Twitter created a sense of community among students and was used as a peer support tool. Twitter was also used as a contact path between students and faculty (“Twittering the Student Experience,” 2009). Specifically, Twitter helped to develop student peer support groups (with an increase of tweets occurring just prior to exams); develop personal learning networks (which were particularly helpful when students were physically isolated from their peers); and to develop and arrange social meetings (“Twittering the Student Experience,” 2009).

Twitter has also been studied in relation to its effect on student interaction and engagement in large general education courses. Elavsky, Mislán, and Elavsky (2011) studied the use of Twitter during actual class time to determine whether its use can influence student perceptions of a large lecture hall course as being more intimate, interesting, interactive, and amiable. The researchers encouraged Twitter use during each class session and the Twitter feed was projected in real time during class at least one day per week. At the end of the semester, 3207 tweets had been posted. Results indicated that the quantitative level of student engagement with Twitter was not as widespread as expected, but “the technology did seemingly enhance student interaction above and beyond class-time parameters (in that they engaged with each other and class themes outside of class time in ways that could be empirically documented)” (Elavsky et al., 2011, p. 223). In addition, students reported their use of Twitter improved the overall class experience, the perception of class size (more interconnected and smaller), and their engagement with the class. Students also said using Twitter influenced them to believe they had gotten more out of the course (Elavsky et al., 2011).

## Instructor Credibility

Similar to the studies regarding the relationship between Facebook, Twitter and student engagement, research about the relationship between social media and student perceptions of instructor credibility is limited. “Credibility” refers to the degree to which a speaker is perceived as believable (McCroskey, 1992). Instructors are perceived by their students as credible based on how well they are able to relate to their students (Teven & Hanson, 2004). Specifically, “instructor credibility” is the degree to which students perceive an instructor as credible in terms of her/his competence, trustworthiness, and caring (McCroskey & Teven, 1999). “Competence” relates to the extent to which an instructor is perceived to know what she/he is talking about; “trustworthiness” refers to the degree that an instructor is perceived as honest; and “caring” concerns the extent to which an instructor is perceived to have the best interests of her/his students’ in mind (Mazer, Murphy & Simonds, 2009). Instructor communication behaviors, both inside and outside of the classroom, have the most influence on the perception of credibility (Obermiller, Ruppert & Atwood, 2012). Instructors may attempt to create student perceptions of credibility by engaging in self-disclosure with students, either face-to-face or online. Perceptions of instructor credibility are associated with a variety of desired education-related outcomes. Benefits associated with perceived instructor credibility include the perception of greater learning, increased satisfaction with an instructor and course, and high student evaluations of

an instructor and course (Teven & McCroskey, 1997). Perceived instructor credibility is also related to student motivation to learn (Martin, Mottet, & Chesebro, 1997) and enhanced communication between instructor and student (Meyers and Bryant, 2004).

Perceptions of instructor credibility can be explained and predicted in terms of expectancy violations theory (EVT). "Expectancies" refer to behavioral patterns associated with specific individuals that are considered appropriate, desired and/or preferred. For example, students may expect their professors to be knowledgeable about a particular topic; honest when answering questions; and caring when discussing grades. "Violations of expectancies" occur when individuals deviate from appropriate behavior to the extent that the deviation is noticeable to others. Perceived expectancy violation may occur if a professor appears not to know about a particular topic; doesn't answer questions honestly; or seems not to care about students' grades. EVT suggests that expectancy violations draw attention to a communicator and intensifies the listeners' information processing needed to make sense of the situation (Burgoon, 1993; Floyd, Ramirez, & Burgoon, 1999). EVT also explains that communicators possess characteristics that are valenced. The "communicator reward level" suggests that we place communicators on a continuum that ranges from positive to negative, depending on their reward level. Communicators who have a high reward level present us with more positively valued messages than negatively valued messages. Interestingly, when expectancy violations are associated with rewarding communicators, we tend to "forgive" them and the violation more so than violations associated with less rewarding communicators (Burgoon, Buller, & Woodall, 1996). EVT also suggests that behaviors are positively and negatively valenced and that the "violation valence" occurs when observers interpret the behavior as either positive or negative. For example, if a well-liked and highly regarded professor meets a student's expectations by publically commending an oral report, the student's expectations are met. If the instructor criticizes the oral report and embarrasses the student, the instructor has committed a negative violation. If the instructor informs the class that the student's speech is the best speech the professor has ever heard, the instructor has committed a positive violation. Both high and low reward communicators can commit positive or negative expectancy violations, and EVT predicts that positive and negative violations committed by high reward communicators will result in more positive interpretations of the behavior. However, low reward communicators who commit positive and negative expectancy violations result in negative evaluations of the behavior (Dunbar & Segrin, 2012).

#### **FACEBOOK, TWITTER, AND PERCEPTIONS OF INSTRUCTOR CREDIBILITY**

Mazer et al. (2009) conducted a small-scale study that examined the influence of self-disclosure via Facebook and perceptions of instructor credibility. Self-disclosure was manipulated and occurred in three experimental groups (high, medium, and low self-disclosure) in terms of photos, biographical information, and posts on "The Wall." The researchers found that students report higher levels of instructor credibility when instructors engage in a high amount of self-disclosure on Facebook compared with a low level of self-disclosure. Therefore, the authors suggest that instructors can "strategically reveal photographs and personal information that present them as competent, trustworthy, and caring instructors" (Mazer et al. 2009. p. 180).

Instructor self-disclosure on Facebook is not without its risks, however. Although Mazer, Murphy, and Simonds (2007) contend that the amount of self-disclosure on Facebook does not affect student perceptions about an instructor's appropriate use of Facebook, the authors suggest that instructors:

decide what information they want to reveal to their students in an effort to create a comfortable classroom environment that fosters student learning. At the same time, teachers must also determine what information to conceal from their students in order to avoid the negative ramifications of such communication and to protect their credibility in the classroom (p. 4).

Mazer et al. (2009) also found that while their research suggests that disclosure of personal photos, communication from family and friends, and personal opinions can influence students to perceive commonalities between themselves and their instructors, instructors should use caution when considering what to disclose on Facebook to facilitate perceptions of credibility. While the authors don't associate their findings with EVT, it may be that those professors who are perceived as "high reward" may be able to post more personal information on Facebook without experiencing a decrease in student perceptions of their credibility.

Teclehaimanot and Hickman (2011) studied which specific Facebook instructor behaviors are deemed appropriate and inappropriate by students and found that the least appropriate behavior is sending pokes. In contrast to the results found by Mazer et al. (2009), Teclehaimanot and Hickman's (2011) research reveals that students are

somewhat uncomfortable when instructors comment on their posts (overall, instructor comments on student posts border between appropriate and inappropriate). This finding also supports the warning that instructors should be strategic when deciding to share personal information with students on Facebook to create the perception of credibility. Professors may want to assess their “reward value” and determine whether their disclosures may be perceived as a positive or negative expectancy violation prior to posting on Facebook.

Current research about the relationship between Twitter and student perceptions of instructor credibility is limited to one study. As previously mentioned, instructors may attempt to create perceptions of credibility by engaging in self-disclosure with students, either face-to-face or online. The lack of research concerning Twitter and perceived instructor credibility influenced Kirsten Johnson to pose three research questions in her study about Twitter and student perceptions of instructor credibility. These questions concerned whether disclosing social information, scholarly information, or a combination of social and scholarly information enhances perceived instructor credibility (Johnson, 2011). Results indicate that student respondents who saw social tweets only rated a professor as more credible than student respondents who saw only the scholarly tweets only. The author suggests these results may reflect that “caring” rather than “competence” is the most important component of perceived instructor credibility as evidenced on social networking sites (Johnson, 2011). Johnson (2011) concludes:

The nature of Twitter with its short updates, options to share pictures, and to easily post links may make it the ideal place to share information and carry on conversations with students outside of class. The use of social networking sites and platforms allows for conversations among users to continue and enrich a student’s perception of the teacher (p. 34).

### **Instructor Immediacy**

“Immediacy” refers to the physical or psychological closeness between people involved in interaction. Implicit communication theory provides the foundation for the concept of immediacy. Implicit communication theory explains that messages are communicated explicitly and implicitly. While explicit messages are verbal and convey content, implicit messages are nonverbal and convey emotion. However, immediacy refers to both verbal and nonverbal communication (Mehrabian, 1981; Whitt, Wheelless & Allen, 2004; Velez & Cano, 2008). Research illustrates that immediacy behaviors are associated with higher instructor evaluations by students and increased perceptions of learning (Christophel, 1990; McCroskey, Richmond, Sallinen, Fayer, & Barraclough, 1995). Verbal immediacy behaviors that can create an immediate classroom environment include using personal examples, addressing students by their first names, and using humor (Gorham, 1988). Students whose instructors use nonverbal immediacy behaviors such as gesturing, smiling at a class, and speaking with vocal variation perceive their instructors as having a high degree of credibility (Thweatt & McCroskey, 1998). Nonverbal immediacy behaviors and increased perceptions of learning are also related to students’ willingness to talk during class discussions and in out-of-class communication (Cooper & Simonds, 2006; Jaasma & Koper, 1999). Immediacy may also be communicated in online contexts. Mediated immediacy refers to “the communicative cues in mediated channels that can shape perceptions of psychological closeness between interactants” (O’Sullivan, Hunt, & Lippert, 2004). Examples of communicative cues that affect perceptions of instructor immediacy include punctuation, language, and font use (O’Sullivan et al., 2004). Mediated immediacy is additionally affected by self-disclosure on personal webpages (O’Sullivan et al., 2004).

### **Facebook, Twitter and Perceptions Of Instructor Immediacy**

In their study of Facebook and computer-mediated self-disclosure, Mazer, et al. (2007) found that instructors who engage in a high degree of self-disclosure on Facebook by posting photos, biographical information, and placing posts on “The Wall” are perceived by students as more immediate (in regards to a positive classroom climate) than instructors who engage in a low degree of self-disclosure. Respondents’ open-ended comments about Facebook sites that are high in self-disclosure emphasized instructor strengths. Such comments include “She seemed like she would relate well to her students and make the classroom atmosphere enjoyable;” “I feel she is genuine and honest;” and “I think that as a teacher I would get along with her because of our common characteristics” (Mazer et al, 2007, p. 11).

J.A. McArthur (2011) researched student perceptions of instructor credibility and instructor immediacy related to the use of Twitter. Perceptions of instructor immediacy were measured using a modified version of the Nonverbal Immediacy in College Classroom Instruction (NICCI) scale. The NICCI scale has been used in prior research to predict instructor immediacy in terms of student perceptions of in-class, nonverbal behaviors. Students in McArthur’s study

were also asked to answer questions about the appropriateness of Twitter as a way to contact the instructor and classmates. McArthur (2011) found perceptions of instructor immediacy are significantly and positively correlated with the level of student-instructor interaction on Twitter, as well as positively correlated with student perceptions of the appropriateness of Twitter as a classroom communication tool. The frequency of instructor Twitter use and student Twitter use is also significantly and positively correlated with perceived instructor immediacy.

An interesting finding in McArthur's research concerns the NICCI, which measures student perceptions of instructor nonverbal behaviors in the classroom. MacArthur determined that:

A significant correlation between instructor Twitter use and immediacy indicates that students perceive that the instructor's demonstration of these non-verbal actions in the classroom is increased if the instructor interacts digitally with them on Twitter. This finding is compelling because the scale measures solely in-class, non-verbal behaviors. Fully understanding the impact of technology on non-verbal communication, in relation to the classroom as well as other forums, can help educators harness social media tools for maximum instructional benefit (2011, p. 14).

McArthur concludes that while out-of-class instructor availability influences students to perceive instructor behaviors more positively, most out-of-class opportunities to interact (such as meeting during office hours, using email, etc.) are one-to-one avenues of communication. Twitter, on the other hand, enables instructors to engage with and create learning opportunities for many students at once.

### Implications for Course Integration

Recall that Facebook and Twitter are social media platforms that utilize status updates. Early and limited research shows that both platforms can increase student engagement, can promote instructor credibility, and can increase student perceptions of instructor immediacy. However, statistics reveal that Millennial students are not using Twitter as much as they are Facebook. Facebook incorporates activities and items including, but not limited to, photos, video, chat, status updates, and a variety of other applications, including online casual gaming. The focus for Facebook is primarily on one's self, sharing the details of one's life, and interacting with a pre-established social community of friends. However, Twitter encourages a focus on building community related to interests and topics, which are social, cultural, and/or academic. Therefore, the foundational premise of the technology tool may be what lends one platform to encourage out of class engagement (Facebook) and the other (Twitter) as a better tool for integration within courses.

Nevertheless, some instructors may worry that incorporating Twitter into their course will cheat students out of paying "mindful attention to the subject in front of them" (Hart, 2009, para. 12). However, implementing Twitter into the classroom can fulfill the student need for timely or instant feedback and account for the ways in which some Millennial students assimilate and file information in the fast-paced way they are accustomed to (Evans et al, 1998). Furthermore, faculty must consider and understand that in order to successfully enhance a course with a social media tool such as Twitter, students must have access, be self-disciplined and motivated, open-minded, willing to commit time to online activity, work collaboratively, have the ability to reflect, and believe learning can happen anywhere at any time (Palloff & Pratt, 2003).

### CONCLUSION

Through an extensive review of the literature, the researchers have taken a small step into understanding and revealing the potential of the burgeoning field of social media integration into academia. Overall, it's important to note that:

rather than being a wholly good (or wholly bad) thing for higher education, social media are perhaps best understood in more ambiguous terms. This is especially the case when one considers the complex and often compromised realities of students' *actual* uses of social media within educational contexts and in their wider everyday lives (Selwyn, 2011, p. 4).

Bennet and Maton (2010) assert that "the lack of evidence for the existence of an entire generation of digital natives seriously undermines arguments made for radical change to education because of a proclaimed disjuncture between the needs of young people and their educational institutions" (p. 325). In addition, while the limited research results concerning the integration of Facebook and Twitter into higher education holds promise, the integration of social media in higher education should be undertaken with care. In particular, faculty and administration should realize and understand that Millennial students must be taught digital literacy and should be guided in course-related social media use (Selwyn, 2011; Bennett, Maton, & Kervin, 2007). Nevertheless, through



experience, access and willingness to master and integrate social media platforms such as Twitter and Facebook, faculty will have the potential to create connections, build community, and increase student engagement and perceptions of instructor credibility and immediacy both in and out of the classroom.

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