Full length article

Enhancing self-efficacy for career development in Facebook

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ARTICLE INFO

Article history:
Received 31 January 2015
Received in revised form 17 October 2015
Accepted 19 October 2015
Available online 13 November 2015

Keywords:
Facebook
College students
Technology affordance
Self-efficacy
Online survey

ABSTRACT

The literature has two competing perspectives on Facebook: One claims positive effects of Facebook on individuals, while the other suggests detrimental effects. The contrasting perspectives are due to the technology-deterministic approach centering on Facebook "use" as opposed to non-use, neglecting the idiosyncrasies of members and the roles of their context. Accordingly, this study focuses on current college student members and enhancement of their self-efficacy for career development in Facebook, given college students' loyalty to Facebook and their increasing financial uncertainties in the US. We posit that Facebook provides two affordances (i.e., affordance of virtual people watching and affordance of garnering social support), which in turn increase chances of two important sources of self-efficacy—i.e., gaining vicarious experience and social persuasions. An online survey with 260 college student Facebook members was conducted; the results of data analyses corroborated our hypotheses. These findings identify the unique affordances of Facebook for self-efficacy development, thereby expanding the social cognitive theory by demonstrating that technology affordances translate into effective sources of self-efficacy.

1. Introduction

The literature has two competing perspectives on Facebook: One claims positive effects that Facebook brings to individuals, while the other suggests detrimental effects. The two strands are in sharp contrast on many important issues. In regards to privacy, for example, negative viewers claim unintended disclosure of personal information in Facebook and subsequent threats to privacy (Debatin, Lovejoy, Horn, & Hughes, 2009), while the counterpart posits that self-disclosure in Facebook increases relational closeness (Ledbetter et al., 2010). Likewise, critiques associate Facebook use with first-year college students' low self-esteem (Debatin et al., 2009), while advocates maintain Facebook increases college students' self-esteem (Kalpidou, Costin, & Morris, 2011). Facebook is criticized by some for lowering academic performance (Junco, 2012; Kirschner & Karpinski, 2010), while the results from a nationwide survey correlate Facebook use with higher grades (Pasek, Moore, & Hargittai, 2009).

We propose that the contrasting and ambiguous results are due, at least in part, to the monolithic approach centering on Facebook "use" as opposed to non-use. Specifically, many previous researchers compared Facebook users with non-users (or less frequent users), assuming that the frequency of Facebook "use" will bring universal results without regard for the goals, circumstances, abilities and perspectives of users. An identical technology brings varying outcomes to people because they appropriate technology in a way that serves their goals most appropriately under the given circumstances (Leonardi, 2014). Witnessing organizations' massive successes and utter failures with the same technology, DeSanctis and Poole (1994) criticize technology determinism and suggest that researchers recognize that individuals perceive and appropriate a given technology adaptively to their needs, thereby accruing varying results from its use.

Along this line, a group of researchers have recently proposed the concept of technology affordance—an opportunity of an action provided by a technology to a user situated in particular context (Faraj, Jarvenpaa, & Majchrzak, 2011; Leonardi, 2014; Markus & Silver, 2008). Applying this affordance concept, we posit that the impact of Facebook can vary widely, not simply depending on the frequency of use, but depending on *what users want in the particular context* and *what abilities Facebook affords users to manage the particular context that they are in.* As such, by employing the concept of technology affordance, we attempt

to resolve the previously mentioned ambiguous results and provide more accurate understanding of the impact Facebook has on users.

Following the suggestions of previous researchers who underscore the importance of incorporating users' context (Xu et al. 2014a, 2014b), we center on how Facebook helps current college students foster their career development self-efficacy in the unfavorable financial circumstances. The reason we focus on this topic is two-fold—current college students' loyalty to Facebook and their increasing financial predicament in the US. First, current college students remain the heaviest users of Facebook compared to any other age groups (Pew Research Group, 2014). Despite recent reports on Facebook losing its stronghold among young audiences, 95% of college students still patronize Facebook (Viner, 2014), which is much higher than any other age cohort (Pew Internet, 2014). Indeed, the emergence of social media has changed individual interaction patterns, ways of communication, and relationship maintenance among youth (Rainie & Wellman, 2012; Xu et al., 2012).

Secondly, to foster their career development as they cope with their difficult economic circumstances in the United States, current college students need enhanced self-efficacy—a belief in their capabilities to organize and execute the courses of action required to manage prospective situations (Bandura, 1995). Challenges faced by current college students include the high cost of tuition, which has increased exponentially in the past few decades (Baum & Ma, 2012). The traditional path to a college education often leads to massive debt, which has become a public concern since the national student debt load is currently more than $1 trillion dollars (Smith, 2014). In addition, underemployment among college graduates under 25 has increased by more than 30% from 12% in 2003 to 16% in 2013 (Shierholz, Davis, & Kimball, 2014), leading to a large share of college graduates who can find only part-time jobs or low-skill jobs such as those without college degrees obtained before the economic crisis induced by sub-prime mortgages.

To overcome the predicament, one's self-efficacy matters (Bandura, 1995). Self-efficacy determines how persistently, resiliently, and tenaciously one pursues his/her goals despite setbacks and adversities. Accordingly, we investigate whether Facebook has proper affordances to foster college students' self-efficacy. Among many domains of self-efficacy, we focus on career development self-efficacy because (i) career development is one of college students' primary goals (Zimmer, 2014) and (ii) college students can overcome their financial predicament by obtaining and developing successful careers (Super, Savickas, & Super, 1996).

Drawing on the social cognitive theory, we suggest that Facebook provides unique affordances that facilitate college students' career development self-efficacy. Two sources of self-efficacy—vicarious experience and social persuasion (Bandura, 2001)—are provided by Facebook, given its affordance for allowing people to watch others closely (Joinson, 2008) and to garner social support from a large crowd. These affordances are unique to Facebook, because Facebook allows an individual to observe a large number of people on a regular basis and to gather many encouraging comments promptly and easily.

To examine whether these two affordances translate into sources for developing self-efficacy, we employed an online survey, using 260 college students as respondents. We revised the existing instruments and developed new ones to fit the context of this study by undertaking interviews and conducting two-rounds of card sorting method (Moore & Benbasat, 1991). The results of data analyses using a structural equation model show that the affordance of virtual people-watching and the affordance of garnering social support are significant sources of college student's career development self-efficacy.

2. Background

2.1. Current college students and Facebook

Current college students contrast clearly with college students of predecessor age cohorts, such as baby boomers (born between 1946 and 1964) and Generation X (born between mid-1960 and 1980), in the ways they use technology in general and Social Networking Sites (SNSs) in particular, and in the ways they view their abilities to prosper financially (Smith, 2014).

First, many current college students have integrated SNSs into their daily lives (Smith, 2014). An SNS is a web-based service that allows "individuals to (1) construct a public or semi-public profile …, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd & Ellison, 2007). We focus on Facebook given its dominant status among SNSs (Chou & Edge, 2012).

Despite Facebook's expansion to older audiences and the growth of other SNSs, such as Pinterest and Instagram, current college students are still the heaviest patrons of Facebook. 95% of college students use Facebook (Shweiki Media, 2014), the percentage of which is higher than that of any other age groups (Pew Internet, 2014). The average number of contacts they have on Facebook is 250, considerably higher than for any other age group (Pew Research Center, 2014), and 40% of the college students check Facebook six times per day (Viner, 2014), post 3.45 times per day (Merchant et al., 2014), and spend nearly 8 h per week on Facebook (Campusbooks, 2014). To them, Facebook is essentially an information technology-enabled social space. It is a great example of the "new social operating system" created by intertwining technological and social networks (Rainie & Wellman, 2012).

Another notable difference between current college students and predecessors is their outlook for the future despite their financial burdens. Current college students have higher levels of student loan debt, poverty, and underemployment, and lower levels of wealth and personal income than their predecessor generations had at the same stage of their life (Pew Research Center, 2013). Underemployment rates among college graduates has increased (Shierholz et al., 2014), while the cost for higher education rose by nearly 100%, from $10,649 per person in 2003 to $20,326 per person in 2013 (Louis, 2013). Nonetheless, college students maintain a positive outlook on their economic future, believing it will be better than the present (Pew Research Center, 2014). Young adults tend to have a positive outlook but current college students have more positive outlooks than their predecessors (Pew Research Center, 2014). Current college students believe they will achieve a level of prosperity that exceeds what previous age cohorts believed even though these older generations had much better economic circumstances at the same age (Pew Research Center, 2014).

We examine whether and how Facebook, which is an integral part of current students' lives, affects their outlook for future, especially testing the possibility that their positive future outlook reflects their self-efficacy fostered by Facebook.

2.2. Career development self-efficacy (CDSE)

To investigate whether and how Facebook affects current students' outlook, we employ the concept of career development self-efficacy (CDSE). This aspect of self-efficacy is particularly relevant to achieving financial stability and prosperity, and our research focuses on the relationship between Facebook and current college students' beliefs in achieving prosperity. We define CDSE as "an individual's degree of confidence with respect to performing job-related tasks and fulfilling academic expectations for future careers." Building on the work of Taylor and Betz (1983), we focus

on individuals' beliefs in their abilities to perform tasks related to their future jobs and to fulfill academic requirements to qualify themselves for those jobs. College students acquire job-related experience through part-time jobs and/or internships and engage in educational or training programs associated with the occupational fields in which they wish to build their future careers. For instance, a student who wants to be a certified public accountant may work as a summer intern at a large accounting firm and take courses on taxation and auditing. If she is confident in her performance as an intern and in her accounting courses, she has a high level of CDSE. In sum, we define CDSE as being based on college students' abilities to perform professional and academic tasks that are potentially relavant to developing their future careers.

2.3. Sources of self-efficacy

We propose that Facebook provides users with unique chances to earn the important sources of self-efficacy, thereby facilitating their CDSE. Four principal sources of self-efficacy are enactive mastery experiences, vicarious experiences, social persuasion, and physiological/affective states (Bandura, 1989; 1997).

Enactive mastery experiences build self-efficacy based on one's direct experiences with success and failure. Vicarious experience, in comparison, is gained when a person observes someone else's successes and failures, and transfers that person's competence to himself or herself. One cannot and does not need to experience all domains of life, yet can still learn valuable lessons by observing one's social models. The process of learning by observing social models is called observational learning, which serves as an important and efficient source of self-efficacy whereby one can bypass the lengthy process of learning by trial and error (Bandura, 2001). Social persuasion becomes a source of self-efficacy when a person who receives feedback and comments from others about his or her competency level internalizes the comments in evaluations of himself or herself. Lastly, physiological/affective states influence self-efficacy when a person bases judgments of competency on his or her emotional states while performing the task. If the person feels stressed or nervous while engaged in a task, he or she uses this emotional state as an indication of low competency in that task.

2.4. Affordance of Facebook in facilitating CDSE

We propose that Facebook affords users the unique opportunities to gain access to some of these four sources of self-efficacy, thereby fostering their CDSE. For the illustration of how these occur, the concept of technology affordance is useful.

The affordance concept was proposed by the ecological psychologist Gibson (1979) and was then modified for and adopted in the computer-mediated communication (CMC) field for understanding capacities of computerized systems to aid in users' goal achievements. Researchers have defined technology affordances as *the opportunities for action* provided to a user by a computerized system under particular circumstances (Bloomfield, Latham, & Vurdubakis, 2010; Markus & Silver, 2008). For instance, an electronic discussion forum helps democratize group decision-making processes by providing opportunities to speak for introverted team members who would not have spoken in a face-to-face discussion. As such, the concept of affordance helps researchers focus on users and the functions that the technology provides to users in particular circumstances. The affordance concept, therefore, is contrasted to the technology determinism in which "use" of a technology is postulated to bring universal outcomes. After repeatedly witnessing a similar technology brings to users both successes and failures, DeSanctis and Poole (1994) criticize the technology determinism, and conclude that researchers must take into account users' goals and context, not only their "use" of technology, to properly interpret and predict outcomes from technology use.

Given the pitfalls of technology determinism, many researchers shift their attention to what *opportunities* a technical object provides to users who have specific goals under a particular circumstance—i.e., technology affordance (Markus & Silver, 2008). As such, we borrow the concept of affordance in our examination of how Facebook provides users unique opportunities to foster their CDSE.

In order to analyze the affordances of Facebook in facilitating CDSE, we follow the approach that Treem and Leonardi (2012) and Argyris and Monu (2015) used to identify affordances of social media in particular circumstances. Treem and Leonardi derived from the previous literature what actions that social media applications enable users to take in the context of intra-organizational communication. Argyris and Monu (2015) also reviewed the previous literature to generate the list of all the potential communicative acts that corporate public relations professionals can take using social media applications.

Along this line, we reviewed the literature to identify previous cases in which individuals utilized Facebook and increased self-efficacy. In so doing, we used multi-database search engines, such as ABI/INFORM complete, with keywords combining Facebook with self-efficacy and with the four sources of self-efficacy. Once we gathered all the cases, we analyzed how Facebook helped individuals gain access to the four sources of self-efficacy. Table 1 summarizes our literature review.

The results of our literature review show that several previous studies consider self-efficacy as one of the primary motivators of Facebook use (Blachnio, Przepiorka, & Rudnicka, 2013). The main assertion of those studies is that people have intrinsic needs to develop self-efficacy, and such intrinsic needs motivate people to patronize Facebook (Blachnio et al., 2013). Despite their assertions, we have found surprisingly very few studies that have investigated how Facebook users' self-efficacy changes, as a result. Several previous researchers have asserted that people are drawn to Facebook due to its potential ability to enhance self-efficacy, but none of them has studied whether users' self-efficacy level is actually influenced by their Facebook experience.

In regard to enactive mastery experience as a source of self-efficacy, we found very few studies relating it to Facebook. The lack of previous studies on this topic is in sharp contrast to a large number of studies conducted on virtual worlds websites such as SecondLife.com and Massively Multiplayer Online Role-Playing Games in which users create pseudo-identities and control their characters' actions (Turkle, 1994, 1999). Virtual worlds enable individuals to experience occupational fields that they could not have in their real lives, thereby enhancing individuals' self-efficacy (Turkle, 1994, 1999). In contrast, Facebook operates based on real-life connections, not on virtual worlds. Thus, although Facebook is a valuable source of information and connections for job searching, but Facebook rarely affords users the abilities to *directly* experience many of professional career fields in its platform, for instance, architecture, chemical engineering, nursing, and accounting.

Similarly, there is little research on physiological states users experience while conducting a job-related task on Facebook. The lack of research on this topic should not be confused with numerous studies on enjoyment, pleasure, and hedonic values of using Facebook (Sago, 2013; Sledgianowski & Kulviwat, 2009; Yang & Lin, 2014). While many researchers have discussed positive and negative emotions that users experience on Facebook, in the context of self-efficacy, the physiological state refers to the emotional state that individuals feel while being *engaged in the task that builds their self-efficacy*. As Facebook rarely enables users to directly

Table 1
Summary of the previous research on Facebook and self-efficacy.

	Sources	Relevant findings
Self-efficacy in general[a]	Blachnio et al. (2013)	• Literature review paper on the primary motivators of Facebook use
	Hong and Gardner (2014)	• Self-efficacy as a influencer on activities on SNS
	Pulman (2010)	• Web 2.0 use increases patients' self-efficacy
	Yu, Tian, Vogel, and Kwok (2010)	• Self-efficacy bridges user activities in Facebook.
	Wang and Fesenmaier (2003)	• Self-efficacy is positively related to members' active contributions to the online community
Virtual people watching	Chen et al. (2011)	• Observational learning in online shopping context
	Joinson (2008)	• People-watching is selected as the second important reasons for using Facebook
	Marwick (2012)	• Virtual people-watching that is happening in Facebook in general
	Trottier (2012)	• Virtual people-watching that is happening in Facebook in general
	Eftekhar, A., Morris, N., & Fullwood 2014	• Facebook provides photo-sharing features that make it easy to watch others.
Social Support	Lampel and Bhalla (2007)	• The impact of positive comments on voluntary contributions to the online community
	Liu and Brown (2014)	• The impact of positive feedback on social capital
	Moon and Sproull (2008)	• The role of feedback in managing voluntary workforce

[a] There are more studies that discuss self-efficacy as a motivator to use Facebook. However, these are not included because we are interested in Facebook and resultant self-efficacy increase.

experience many professional fields, as explained above, Facebook users are unable to experience the physiological states relevant to CDSE.

We found several studies on observational learning on Facebook. Note, however, that the researchers investigated observational learning in the context of purchase decisions or focused on virtual people-watching in Facebook in general, but few studies expanded observations to self-efficacy development. These researchers argue that Facebook makes it easy for users to watch others. Facebook facilitates virtual people-watching by granting members the access to a large number of profiles and de-factor permission to watch others' updates (Argyris & Monu, 2015). Facebook lets users update their statuses at any time in a variety of forms, such as uploading photos, updating profiles, and so on (Eftekhar, Morris, & Fullwood, 2014); these status updates are in turn displayed to their Facebook contacts immediately, enticing users to intently watch one another and follow others' posts (Trottier, 2012). Moreover, the knowledge that they are being watched by a large crowd engages users in purposeful management of their online images (Trottier, 2012). In fact, this virtual people watching is ranked as the second primary motivator for using Facebook (Joinson, 2008). Facebook removed the option of hiding users' public information, such as name, profile picture, and cover photo, from public view. This means users' public information is shown to anyone on Facebook with or without the users' consent. As such, users cannot entirely opt out of becoming an object of observation (Otterbacher, 2011).

Facebook also makes it possible to watch others intently without feeling guilty of invading others' privacy (Marwick, 2012). Before Facebook was introduced, going through the photo albums or journals of others without explicit permission had severe social ramifications. In contrast, Facebook users choose to display their updates, giving de-facto permission to their contacts to read their statuses (Marwick, 2012). In this study, we examine whether this affordance of virtual people watching translates into an opportunity for observational learning, thereby becoming a source of CDSE.

In addition, we found several studies related to social persuasion. However, most of these studies discuss the effects of supportive comments on user activities but do not develop them into an argument that social persuasion that leads to self-efficacy. For instance, Lampel and Bhalla (2007), Liu and Brown (2014), and Moon and Sproull (2008) have maintained that positive comments that members received from others facilitates their voluntary contributions to the online community, noting that voluntary gift-giving activities do not persist in the absence of acknowledgments of other members.

Facebook has several features to help users to garner positive comments on photos, posts, and status updates. Facebook provides buttons for approval, "like," but not for disapproval, "dislike," perhaps in its attempt to filter out negative responses. In addition, Facebook lets users adjust privacy settings to control who sees which posts (Ellison & Boyd, 2013). This feature allows users to avoid the social consequences of unfriending a person - the user can still keep that person in her contact list, while choosing not to display particular posts to her. For instance, a college student might hide the pictures taken at his fraternity party from his mother, but would not risk unfriending her. That is, Facebook allows users to screen the audience according to how personal their relationships are and whether they agree on specific topics. Using this affordance, one can control negative and contentious comments while making positive and supportive feedback appear salient. Facebook, in this sense, is distinguished from other social media websites, such as micro-blogging sites (e.g., Twitter). Twitter is used to spread users' status updates to a large crowd including both personal connections and strangers alike (Chorley, Colombo, Allen, & Whitaker, 2015); as such, Twitter does not allow users to keep someone on their follower lists while simultaneously preventing him from reading a particular post. Perhaps as a consequence, trolling and harassment are often problems on Twitter (Sherr, 2014). We maintain that the Facebook affordance of garnering social support will improve users' CDSE.

Therefore, we focus on two affordances of Facebook—the affordance of virtual people watching and the affordance of garnering social support—which are postulated to translate into vicarious experience and social persuasion, respectively. The former is defined as the abilities that Facebook provides users to watch others efficiently. The latter is defined as the abilities that Facebook affords users to garner encouraging comments with the features designed to indicate agreement (e.g., "like" and "comments") and to filter out negative ones (e.g., privacy settings for particular posts).

3. Hypotheses

We explore our research question—how Facebook affordances affect college students' career development self-efficacy—through the hypotheses summarized in our research model (Fig. 1).

3.1. Facebook affordance fostering vicarious experience

We postulate that the Facebook affordance for virtual people watching fosters observational learning. According to Social Cognitive Theory, multiplicity of modeling helps the acquisition of

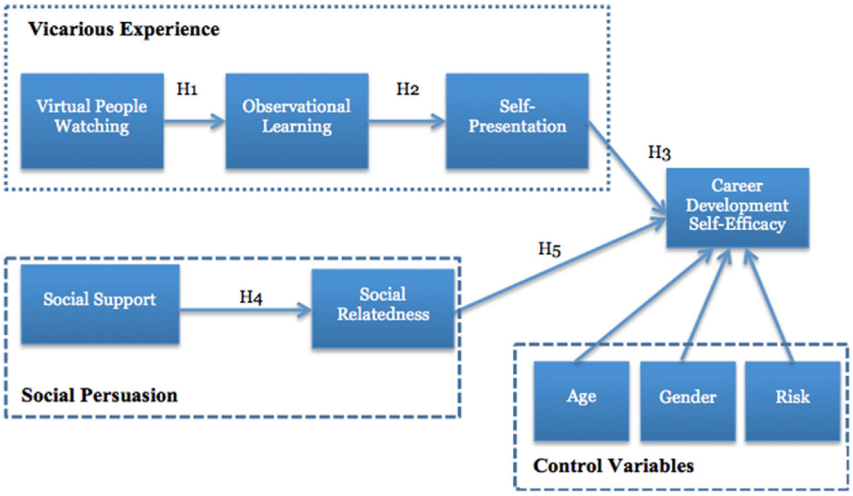

Fig. 1. A research model presenting the constructs and hypotheses of the study.

modeled behavior (Bandura, 1997). In other words, the effects of observational learning increase as individuals observe the modeled behavior more frequently. Facebook helps people watch their models repeatedly, and Facebook users can choose to "subscribe" to the status updates of contacts they are particularly interested in; Facebook displays these selected contacts' status updates at the top of their "newsfeed." Therefore, Facebook increases the multiplicity of modeling by making the modeled behavior salient (Marwick, 2012; Trottier, 2012).

Empirical evidence supports the positive impact of multiplicity of modeling on observational learning in SNSs. Chen, Wang, and Xie (2011) have shown that the more consumers observe fellow customers purchasing a specific product, the more they buy that product. Cognizant of this impact, marketers display other customers' purchase behaviors to induce "socially modeled" purchases (Chen et al., 2011). Accordingly, we maintain that Facebook has an affordance that increases the frequency of watching others virtually, which facilitates users' acquisition of the modeled behaviors.

H1. Virtual people-watching will lead to observational learning.

To retain what has been learned by observing others, one codes the learned behaviors symbolically (Bandura & Jeffrey, 1973). That is, for better retention, the observer codes the model's behavior in symbolic forms, such as visual imagery, verbal instructions, and simple cues (Bandura & Jeffrey, 1973). This symbolic coding is also referred to as a cognitive rehearsal whereby the observer verbally recites the model's actions, thus increasing the retrieval of the learned behaviors in similar situations (Bandura & Jeffrey, 1973). For instance, when a passenger tries to learn an unfamiliar route by watching the driver, the passenger recites, e.g., "Right-Right-Left-Right." This verbal coding of vicariously learned behavior enhances the retention of observationally learned behaviors (Bandura & Jeffrey, 1973).

Facebook facilitates such verbal expression of learned behaviors by granting users the opportunity to showcase themselves, because users can update their statuses anytime they choose (Eftekhar et al., 2014). In other words, Facebook provides an easy-to-use and accessible forum for users to cognitively rehearse observationally learned behaviors for later retrieval. As such, observational learning will lead to self-presentation in Facebook.

Additional theoretical justification for this relationship is found in the symbolic self-completion theory (Gollwitzer, 1986). This theory posits that it is necessary to make a learned behavior a social reality in order to obtain a sense of achievement and fulfillment; to make it social reality, individuals must make what they learned *be noticed by an audience* (Gollwitzer, 1986). For example, a small boy who learned from another boy at kindergarten how to tie his shoelaces runs to his mother saying, "Mom! See what I learned at school today!" The boy must have an audience (e.g., his mom) who acknowledges his newly learned behavior.

Facebook is an ideal social setting where individuals can have their achievements noticed by friends, family, and the rest of their contacts. For instance, by receiving "likes" or by simply having their achievements displayed to others, their learning becomes social reality through which they can feel the sense of achievement. It is important to note, however, that self-presentation in Facebook, following observational learning, manifests in ways that accentuate users' socially desirable aspects. Facebook members are mindful of the audience watching their status changes; thus, a majority of Facebook members try to display socially desirable depictions of themselves (Kim, Chan, & Kankanhalli, 2012). As Facebook users watch others, they come to realize they are being watched (Marwick, 2012; Trottier, 2012); this realization leads them to actively engage in constructing their self-portrayed images and forming strategies for impression management (Trottier, 2012). Therefore, we claim that observational learning will be positively associated with self-presentation.

H2. Observational learning will lead to self-presentation.

Self-presentation theory suggests that when users present themselves to an audience, their attitudes change in such a way that they come to believe they are what they present (Baumeister, 1982; Gollwitzer, Sheeran, Michalski, & Seifert, 2009). This is particularly so when it comes to important matters directly related to self-concept, such as accomplishments, credentials, and capabilities. Like anyone else, college students may potentially magnify their socially desirable aspects in Facebook. Although people may easily disregard inaccurate accounts of issues that matter little to them, they cannot dismiss pivotal claims regarding themselves (Baumeister, 1982; Gollwitzer et al., 2009). CDSE is one of the most important self-assessments to college students because preparation for a career is the key objective of attending college (Zimmer, 2014). One selectively pays attention to incoming information that is relevant and important to one's current priorities (Nielsen & Sarason, 1981). Because preparation for a career is one of their priorities, college students are unlikely to disregard the cognitive dissonance between their presented selves and actual

selves on such an important matter as CDSE. As such, they will come to believe that they have what they present themselves as having (Baumeister, 1982). Accordingly.

H3. Self-presentation will increase users' CDSE.

3.2. Affordances of Facebook in fostering social persuasion

We argue that the Facebook affordance to garner social support increases users' perceptions of social relatedness, thereby fostering CDSE. As we mentioned in the previous section, Facebook helps users reap supportive comments by feeding others with their status updates in real time and simultaneously filtering potentially disagreeable comments. Supportive feedback refers to comments in which participants affirm or approve of another person's actions (Moon & Sproull, 2008). Specifically in Facebook, the status updates are displayed to others with commenting and "like" features whereby others can affirm or approve of the updates.

We postulate that, as a result of the social support of their contacts on Facebook, users feel more related to their contacts. Social relatedness refers to one's ability to establish satisfying connections with members of a group (Felsman & Blustein, 1999; Minnaert, Boekaerts, & de Brabander, 2007). People socialize better with others who are supportive and agreeable than with those who are contradictory and negative (Mauss et al., 2011). Supportive comments evoke positive emotions, which enable individuals to respond adaptively to social challenges and benefit from social opportunities (Keltner & Kring, 1998), thereby enabling them to socialize better with others. Positive feelings caused by supportive comments, therefore, cultivate socialization among members (Mauss et al., 2011), increasing their perceived social relatedness. As such, we postulate that the Facebook affordance to garner supportive comments will be positively associated with users' perception of their social relatedness to other members.

H4. Social support will increase users' perceived social relatedness.

Social relatedness increases users' CDSE. To mature adults, social relatedness brings practical benefits for career adjustments in the form of mentorship, feedback, and access to better information (Felsman & Blustein, 1999). To young adults, social relatedness brings emotional resources, such as perceived security and a sense of comfort, with which they can be committed to career development and freely explore future career options (Felsman & Blustein, 1999).

Self-determination theory corroborates the relationship between social relatedness and CDSE. Social relatedness is known to be one of the most volitional and highest-quality motivators for determination, persistence, and resilience (Deci & Ryan, 2000). Individuals with close interpersonal relational supports more successfully master the behaviors that enable them to take risks and overcome developmental challenges (Felsman & Blustein, 1999). Because of this, one who achieves a sense of social relatedness through Facebook may be more motivated, persistent, and resilient in pursuing and developing their careers than others who do not have the same level of social relatedness. This leads to our final hypothesis:

H5. Social relatedness will increase users' CDSE.

4. Methodology

4.1. Sample

There were four selection criteria for respondents. First, the respondents had to be full-time students at any type of college, including universities, two-year professional colleges, and community colleges. The inclusion of professional and community colleges serves our purpose of measuring participants' CDSE, as the students in these institutions are proximal to making career decisions. Second, the respondents had to be between the ages of 17 and 24. Third, the respondents had to be active rather than passive members (also known as lurkers, Butler, Sproull, Kiesler, & Kraut, 2007; Nonnecke, Preece, & Andrews, 2004) of Facebook. The inclusion of passive members would have impeded a proper examination of self-presentation, which is one of the constructs of interest to this study. Based on Ellison, Steinfield, and Lampe (2007) and Butler et al. (2007), we defined active members as those who post at least once and spend at least 20 min per week on Facebook. Fourth, the respondents had to be a member of Facebook for at least six months prior to the survey.

The online survey was conducted to verify the reliability and validity of the instruments as well as to test the hypotheses. The 260 respondents consisted of 127 males (49%) and 133 females (51%) with a mean age of 20.52 (SD = 1.60). Their majors ranged from those offered at professional schools, such as paralegal studies, medical assistants, Web design, and computer graphics, to those offered at universities, such as business administration, computer science, psychology, and philosophy.

4.2. Materials

We first selected scales verified by previous studies as benchmarks and then prefaced them with Facebook as the target object. For social support, we selected the scale of Dillard, Shen, and Vail (2007); for social relatedness, we selected the scale of Ilardi, Leone, Kasser, and Ryan (1993) and Vlachopoulos and Michailidou (2006); for self-presentation, we selected the scale of Kim et al. (2012); and for college students' CDSE, we selected the scale of Taylor and Betz (1983). We did not find appropriate scales for virtual people-watching or observational learning, so we developed new scales for the current study. All measures were based on seven-point Likert scales ranging from (1) strongly disagree to (7) strongly agree. In the subsequent section, we describe the processes whereby we developed new instruments and modified existing ones for the purpose of this study.

4.3. Instrument development

Following Bandura (2006), we conducted interviews to ensure that the previously validated instruments accurately reflected our research context (e.g., self-efficacy in Facebook) and the newly developed instruments (for virtual people watching and observational learning) reflected the corresponding constructs. We interviewed seven undergraduate students who were randomly recruited through campus-wide advertisements at both a large public university and a medium-size private university in the northeast region of the United States. The interview participants received an honorarium of $20 for their participation. The students were active Facebook members with demographic factors identical to the respondents of the primary online survey (e.g., average age of 20, nearly equal numbers of male and female participants). During interviews, students were asked to list all of the activities they performed in regard to each construct included in the survey. They were then presented with the instruments and asked if any of the items of the instrument appeared irrelevant or lacked any important activities or situational variables the interviewees thought relevant to Facebook. Based upon the interview results, we modified the instruments.

Next, following Moore and Benbasat (1991), we employed a card-sorting method to ensure the content validity of the scales.

Two rounds of card-sorting were conducted, each with five undergraduate student judges who were recruited and compensated in the same manner as the interviewees mentioned above. The participants were read the definition of each of all the constructs included in this study and were asked to categorize the instrument items into the constructs to which he or she believed the items belonged. There was an "unclear" category to which the participant could sort items that did not fit into any of the constructs. Participants worked individually so their sorting was not influenced by other participants. The card-sorting results helped identify any ambiguity or confusion in the scale items.

The virtual people watching (VPW) measure included three items: observe other members frequently, follow other members frequently, and read other members posts frequently, on Facebook. The observational learning (OBL) measure included three items: learn insights, internalize, and incorporate others' success and failure experiences into my outlook of life. The items for the self-presentation (SP) measure were: try to enhance my image, establish a favorable online image, present a desirable and favorable online image, to other members of Facebook. The social support (SUP) measure had three items: find other members supportive, other members provide support to me, and other members on Facebook are NOT supportive (reversed). The three items for social relatedness (SR) were: socialize well, get along well, and handle myself well in social interactions, with other members of Facebook. Lastly, the four items for the CDSE measure were: achieve most of the academic goals, learn new skills to accomplish difficult academic tasks, succeed at job-related endeavors, and perform effectively on job-related tasks.

4.4. Reliability and validity of the measures

We used IBM SPSS version 19 and Smart Partial Least Squares (PLS) version 2.0 to assess the psychometric properties of the scales. PLS structural equation modeling is a component-based approach (Lohmöller, 1989; Ringle, Wende, & Will. 2005) that allows the simultaneous testing of the measurement model (the psychometric properties of the scales used to measure a variable) and the estimation of the structural model (the strength and direction of the relationships between the variables).

First, we assessed internal consistency by examining Cronbach's alpha (produced by SPSS) and composite reliability (produced by Smart PLS) for each construct. All constructs had Cronbach's alpha and composite reliability above the benchmark level of 0.70 (see Table 2; Barclay, Thompson, & Higgins, 1995).

Next, we tested discriminant validity, following the two requirements of Gefen and Straub (2005). The first criterion requires that the correlation of latent variables with the measurement items should show an appropriate pattern of loadings, one in which the measurement items load highly on their theoretically assigned constructs. Specifically, all the loadings of the measurement items on their assigned latent variables should be an order of magnitude larger than any other loading (Gefen & Straub, 2005). The exploratory factor analysis results (Table 3) showed that each item loads highly on its latent variable and less on other variables, demonstrating adequate discriminant validity. The second criterion requires that the square root of every average variance extracted (AVE) be much larger and at least on an order of magnitude larger than any correlation among any pair of latent constructs, and should be at least 0.50 (Table 2).

Table 3
Factor loadings and cross loadings.

	SUP	VPW	OL	SP	SR	CDSE
SUP1	**0.86**	0.26	0.43	0.22	0.42	0.11
SUP2	**0.82**	0.35	0.42	0.26	0.36	0.10
SUP3	**0.76**	0.22	0.29	0.06	0.37	0.17
VPW1	0.23	**0.84**	0.31	0.36	0.38	0.15
VPW2	0.33	**0.86**	0.34	0.35	0.42	0.15
VPW3	0.28	**0.77**	0.16	0.31	0.44	0.17
OL1	0.46	0.33	**0.86**	0.32	0.27	−0.01
OL2	0.32	0.14	**0.73**	0.20	0.08	−0.04
OL3	0.34	0.32	**0.82**	0.27	0.20	−0.04
SP1	0.17	0.33	0.30	**0.72**	0.24	0.10
SP2	0.14	0.33	0.28	**0.85**	0.35	0.28
SP3	0.19	0.28	0.23	**0.78**	0.30	0.28
SP4	0.22	0.38	0.29	**0.83**	0.30	0.31
SR1	0.37	0.46	0.18	0.29	**0.84**	0.34
SR2	0.46	0.36	0.28	0.23	**0.81**	0.34
SR3	0.36	0.39	0.15	0.40	**0.81**	0.45
CDSE1	0.19	0.16	−0.01	0.33	0.34	**0.79**
CDSE2	0.19	0.18	0.10	0.27	0.36	**0.79**
CDSE3	0.04	0.12	−0.07	0.21	0.40	**0.84**
CDSE4	0.11	0.14	−0.07	0.23	0.42	**0.89**

Additionally, we conducted an exploratory factor analysis to check for a common method bias in the collected data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The primary factor explained only 33% of the variance, far lower than the suggested threshold of 50%, which argues against the existence of common method bias in the collected data (Podsakoff et al., 2003).

4.5. Control variables

We included three control variables that may affect online user behaviors—age, gender, and perceived risk of using the Internet (Alcántara-Pilar, Barrio-García, & Porcu, 2013)—to prevent contamination of the results of the hypotheses testing.

5. Results

We used the online survey data to test our hypotheses, employing Smart PLS 2.0 with a bootstrapping technique (5000 random samples, n = 260). The sample size of 260 exceeds the widely accepted convention that the sample size for structural equation modeling be at least 10 times the number of indicators.

All paths regarding vicarious experience and social persuasion were supported (Fig. 2). None of the paths involving the three control variables were significant. The path coefficient between

Table 2
Inter-construct correlations and average variance extracted.

	Cronbach's alpha	Composite reliability	Mean	S.D.	SUP	VPW	OL	SP	SR	CDSE
Social support (SUP)	0.74	0.85	4.59	1.15	**0.81**[a]					
Virtual people watching (VPW)	0.78	0.86	5.43	1.00	0.35[b]	**0.82**				
Observational Learning (OL)	0.73	0.84	4.55	1.09	0.46	0.31	**0.80**			
Self-Presentation (SP)	0.81	0.87	5.29	1.00	0.23	0.41	0.34	**0.80**		
Social Relatedness (SR)	0.76	0.86	5.56	0.93	0.46	0.50	0.23	0.36	**0.82**	
Career Development Self-Efficacy (CDSE)	0.84	0.89	5.86	0.84	0.16	0.19	−0.02	0.29	0.29	**0.82**

[a] Diagonal cells indicate the square root of the average variance extracted (AVE) of the corresponding construct.
[b] Other cells indicate inter-construct correlations.

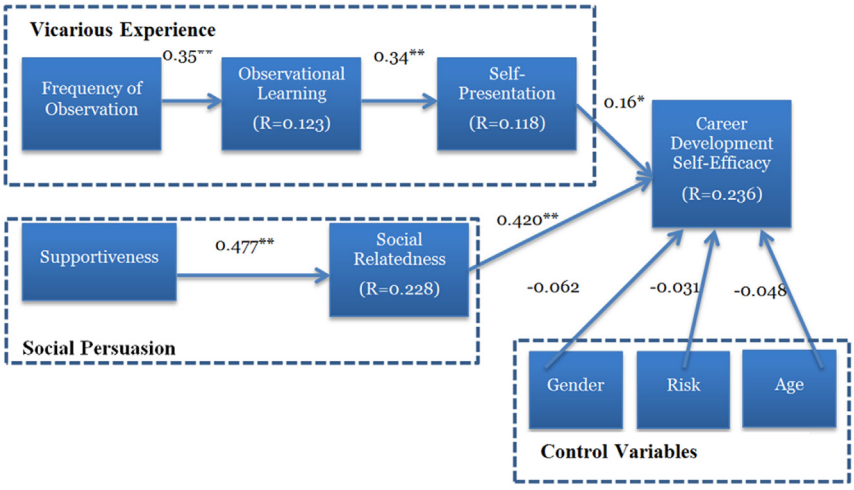

Fig. 2. Results from hypotheses testing. * Denotes significance of 0.05; ** Denotes significance of 0.01.

virtual people watching and observational learning is positive and significant (t = 6.877, p < .05), indicating that the more frequently members observe other members; the more they learn from others. Therefore, H1 is supported. Next, the path coefficient between observational learning and self-presentation is positive and significant (t = 5.60, p < .05), supporting H2, which states that observational learning leads to self-presentation. Furthermore, self-presentation is significantly associated with CDSE (t = 2.028, p < .05), demonstrating H3: As members present themselves, their CDSE becomes congruent with their presentation.

The paths regarding social persuasion are also supported. First, the path coefficient between social support and social relatedness is positive and significant (t = 8.83, $p < .05$), confirming H4 that the more that the students find support from Facebook, the more related they feel to others. The path from social relatedness to CDSE is also positive and significant (t = 5.811, $p < .05$), supporting H5, which states that members' perceived social relatedness fosters their CDSE.

The relationships between the demographic factors, the perceived risk of using the Internet, and CDSE are not supported. None of the path coefficients between age and CDSE, between gender and CDSE, and between the perceived risk of using the Internet and CDSE are significant ($t = 1.13$, $t = 0.56$, $t = 0.89$, all $p > .05$). Therefore, alternative explanations involving other factors, such as age, gender, and perceived risk, are disconfirmed.

6. Conclusion

6.1. Summary of findings and discussion

The results of data analyses corroborated all of our hypotheses: Facebook's two affordances—the affordance of virtual people-watching and of garnering social support—translate into vicarious learning and social persuasion, both of which enhance college students' CDSE. More specifically, Facebook affords members the ability to observe others frequently, thereby providing members with opportunities to learn from others. The college students put their newly acquired observational knowledge to use through self-presentation in Facebook, which allows them to more easily retain what they learned by putting it into symbols and to be recognized by others for their new accomplishments. People's beliefs in their abilities change in accordance with the way they present themselves to others. Thus, as they present themselves positively in Facebook, their CDSE changes in a positive manner. Likewise, Facebook affords members the ability to garner social support by delivering encouraging messages while suppressing potentially negative ones. This social support created in Facebook increases members' perceived social relatedness because people get along better with others who are supportive rather than contentious. Social relatedness in turn increases CDSE.

In this study, we have drawn upon the Social Cognitive Theory to explain the effect of Facebook affordances on CDSE. Our explanation is also consistent with the distributed cognition perspective, which is "a broader conception that includes phenomena that emerge in social interactions as well as interactions between people and structure in their environments" (Hollan, Hutchins, & Kirsh, 2000, p. 177). The improvement of CDSE, a cognition, is the outcome of 1) undergraduate students' social interaction with other Facebook members by exchanging and processing information (i.e., virtual-watching and garnering encouraging comments), and 2) the processing of information intertwined between internal cognitive processes and environmental artifacts (i.e., Facebook affordances for virtual-watching and garnering encouraging comments).

6.2. Theoretical contributions

This study makes several significant theoretical contributions. First, based upon comprehensive literature reviews, we have identified two specific affordances of Facebook: the affordance of virtual people watching and the affordance of garnering social support. Previous studies have identified the affordances of social media for intra-organizational (Faraj et al., 2011; Treem & Leonardi, 2012) and inter-organizational communications (Argyris & Monu, 2015); however, none has identified a particular set of affordances of Facebook for developing self-efficacy. Therefore, this study extends the theory of technology affordance —that is, opportunities a technology provides to users who have specific goals under a particular circumstance (Markus & Silver, 2008)—by examining Facebook affordances in the important area of self-efficacy.

Additionally, this study extends the social cognitive theory by connecting the specific affordances of Facebook to two sources of self-efficacy—vicarious learning and social persuasion—and then demonstrates that these affordances can translate into effective sources of self-efficacy. As such, we contribute to refining the social cognitive theory in the context of self-efficacy development where technology affordances become sources of self-efficacy. Given the rapid growth of SNSs and their stronghold among younger gener-

ations, it is important and relevant to study how Facebook affordances lead to self-efficacy.

Finally, in investigating how Facebook affordances facilitate CDSE, our study avoids technology determinism in which researchers take a black-box approach by connecting technology use (i.e., antecedents) to the outcomes from system use. Instead, we examine the process variables —self-presentation and social relatedness— that connect the technology affordances to the outcomes. Specifically, we theorize that Facebook helps college students' CDSE grow by providing vicarious experience and by accruing social persuasion, each of which encompasses self-presentation and social relatedness respectively. The inclusion of the two process variables helps uncover the underlying mechanism that explains *why* and *how* certain sources lead to higher self-efficacy in the context of SNSs, thereby providing us with more comprehensive explanations of the impact of SNSs on individuals.

6.3. Practical implications and societal impact

This study has important implications for practice and society. Scrutinizing the finer details of SNS affordances can help developers employ better combinations of these affordances to design more effective SNSs to improve CDSE. Specifically, our results suggest that SNSs have the potential to improve college students' CDSE if developers design SNSs interventions aimed at increasing the beneficial effects we observed in our research, such as observational learning and social persuasion.

In addition, we discovered that Facebook has affordances that help college students develop their CDSE. CDSE can significantly influence college students' career options, the level of performance, and persistence (Betz, 2007); therefore, the Facebook affordances for facilitating CDSE could bring substantial benefits to the society as a whole. This is particularly important given the challenging economic circumstances which current college students face. Well-established self-efficacy has the potential to help current college students persist when dealing with adversity. Therefore, this finding may mitigate concerns about the negative impact of SNSs, such as those on academic performance (Kirschner & Karpinski, 2010), office productivity (Jung, 2012), and depression (O'Keeffe & Clarke-Pearson, 2011).

6.4. Limitations and future research

As in any other study, there are limitations. We chose Facebook, which is established, successful, and well designed to enable members to interact with one other. If a site is poorly designed or has less traffic, it will likely have lower rates of participation and thus a lower level of social support. As a result, its influence on CDSE will be attenuated. The second limitation lies in our focus on current college students as subjects. The findings in this study might not be generalizable to mature adults who already have stable careers. However, investigating this particular age cohort is important because of current college students' loyalty to Facebook and the significance of Facebook to them. Also, this limitation can translate into an opportunity for future research. Future researchers could use this study as groundwork to investigate other domains of self-efficacy that are more salient to other age cohorts. For instance, Erikson's classic thesis show there is a particular psychological developmental task that needs to be fulfilled at a specific period of life. For adults over the age of 65, developing integrity matters. As Facebook use continues to expand among older adults, future researchers may want to identify Facebook affordances for this audiences' development of integrity. Lastly, future studies can examine how the impact of the two affordances will change across different cultures (de Pablos, 2005) or for individuals (Xu et al., 2011).

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