J Youth Adolescence (2016) 45:402–416
DOI 10.1007/s10964-015-0385-y

EMPIRICAL RESEARCH

Online Self-Presentation on Facebook and Self Development During the College Transition

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Received: 24 September 2015 / Accepted: 28 October 2015 / Published online: 3 November 2015

Abstract Self-presentation, a central element of young people's identity development, now extends from face-to-face contexts to social networking sites. Online self-presentation may change when youth transition to college, faced with the need to reclaim or redefine themselves in the new environment. Drawing on theories of self-presentation and self development, this study explores changes in youth's online self-presentation during their transition to a residential college. It also examines associations between online self-presentation and students' self-esteem and self-concept clarity. We surveyed 218 college freshmen (M_{age} = 18.07; 64 % female, 79 % White) at the beginning and again at the end of their first semester. Freshmen's Facebook self-presentation became less restricted later in the semester. Broad, deep, positive, and authentic Facebook self-presentation was positively associated with perceived support from the audience, which contributed to higher self-esteem contemporaneously, though not longitudinally. Intentional Facebook self-presentation engaged students in self-reflection, which was related to lower self-concept clarity concurrently but higher self-esteem longitudinally. Findings clarified the paths from multifaceted online self-presentation to self development via interpersonal and intrapersonal processes during college transition.

Keywords Self-presentation · Identity · Self-esteem · Self-concept clarity · College transition · Social media · Social networking site

Introduction

Self-presentation, the process through which individuals communicate an image of themselves to others (Baumeister 1982; Leary and Kowalski 1990), is a central element in the construction of one's self and efforts to establish a reputation within a social context (Baumeister and Tice 1986). It takes on heightened importance when people transition into a new environment that demands a reaffirmation of self and reconfiguration of social relationships (Leary and Kowalski 1990). Increasing numbers of young people confront this situation as they make the transition from home to a residential college. A key feature of social networking sites is that they allow users to present an image of one's self to others, which suggests that social networking sites may be especially instrumental in successful transition to the residential college environment.

The dramatic growth in youth's use of social networking sites has prompted studies exploring how young people present themselves on these platforms (e.g., Manago et al. 2008; Zhao et al. 2008). Existing literature on social networking site profile management usually involves data collected at a single time point, with a focus on describing how youth express themselves online. Extending this work, the current study surveyed college freshmen at matriculation and again at the end of their first semester on campus. We examined changes in students' self-presentation on Facebook, the leading social networking site among youth (Duggan et al. 2015), and assessed concurrent and longitudinal associations between online self-presentation and

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students' self development (self-esteem and self-concept clarity).

Young People's Self Development and Online Self-Presentation

Self development is a major task for adolescents (Erikson 1968) and emerging adults (Arnett 2015). It entails developing a clear and integrated sense of self and accepting oneself with a positive view (Chickering and Reisser 1993). College provides opportunities for youth to explore who they are and what they want to be, and to gain the knowledge and skills required for such personal growth (Arnett 2015). Empirical research supports the proposition, showing a general trend of individuals moving toward an identity achievement status from adolescence to young adulthood (Kroger et al. 2010). College students with positive self development (such as identity achievement and high self-esteem) feel more competent, report positive evaluations of their choice of college major (Perez et al. 2014), and reveal fewer depressive symptoms (Lee et al. 2014).

Self-presentation is a crucial element of self development (Baumeister and Tice 1986). To successfully influence the impressions formed by the audience, individuals need to strategically control the information they display (Leary and Kowalski 1990; Schlenker 2003). With the emergence of online platforms, self-presentation takes place beyond face-to-face encounters. College students use social networking sites to communicate various aspects of their identities by displaying photos, showcasing friends' comments, or writing explicit self-descriptions (Manago et al. 2008; Zhao et al. 2008).

Features of social networking sites such as asynchronicity and reduced communication cues allow individuals to perform optimized self-presentation (Walther 1996). The process and product of online self-presentation enable young users to reflect upon themselves (Weber and Mitchell 2008). The presented image also invites prompt feedback from a large audience. Thus, online self-presentation may provide unprecedented opportunities in youth's identity work. Michikyan et al. (2015) found that emerging adults presented multiple selves (e.g., real, ideal, and false selves) on social networking sites, and concluded that youth's identity state was associated with their online self-presentation. The model they tested involved paths from identity development to online self-presentation, but not the opposite direction.

Developmental differences have been noted in young people's use of social networking sites as a means of identity expression. Influenced by peer norms and practices, younger and older adolescents use different social networking platforms and showcase different identity markers (e.g., "identity as display" versus "identity through connection"; Livingstone 2008, p. 402). It reflects the dynamic nature of online self-presentation and users' sensitivity to contextual cues. Conceivably, youth would also modify their online self-presentation during the transition to a residential college in response to the changing context and presentational goals, but there has not been thorough examination of this hypothesis.

Dimensions of Self Development: Self-Esteem and Self-Concept Clarity

Self development can be analyzed through the correlated constructs of self-esteem and self-concept clarity (Campbell et al. 1996). Self-esteem, denoting a person's global self-worth, consistently shows a negative correlation with depression (Harter 1999; Rieger et al. 2015) and loneliness (Rosenberg 1965; Vanhalst et al. 2013). Self-concept clarity references "the extent to which self-beliefs are clearly and confidently defined, internally consistent, and stable" (Campbell et al. 1996, p. 141). The construct is well aligned with Erikson's (1968) concept of identity synthesis (Davis 2013).

Because self development is a social process (Cooley 1902; Erikson 1968; Mead 1934), transitions such as entering a residential college may impose challenges on self-esteem and self-concept clarity. Although self-esteem increases between adolescence and early adulthood (O'Malley and Bachman 1983), the growth becomes less prominent in the first year after high school (Youth in Transition data in O'Malley and Bachman 1983). Leaving home for college allows young people to redefine themselves, viewing themselves as being more independent and getting one step closer to adulthood. Yet, the transition also disrupts the continuity of students' experiences and undermines their sense of place familiarity and place attachment, giving students a feeling of displacement and dislocation (Chow and Healey 2008). Overwhelmed by the size and diversity of the college and the hundreds of new faces met at once, college freshmen often feel lost and anonymous in the crowds (Scanlon et al. 2007), suggesting at least a temporary state of loss of identity or lack of self-concept clarity.

Dimensions of Self-Presentation

Self-presentation is often regarded as a specific and more strategic form of self-disclosure; researchers have been using the terms interchangeably to describe self-expression in computer-mediated communications (Kim and Dindia 2011). Thus, self-presentation can be analyzed by attending to dimensions typically assessed in self-disclosure research (Kim and Dindia 2011). These include breadth (amount of information presented), depth (intimacy level of information presented), positivity (valence of information),

authenticity (degrees to which the presentation accurately reflects the presenter), and intentionality (extent to which individuals consciously and intentionally disclose a piece of information). Whereas breadth, depth, positivity, and authenticity focus on the content of the presentation, intentionality captures individuals' attentiveness to this activity.

Self-presentation is not a static state, but rather an activity sensitive to social and relational contexts. People adjust their self-presentation on these dimensions by considering social norms and relational goals. Individuals tend to limit the breadth and depth of self-disclosure in new relationships (Altman and Taylor 1973). To make themselves appear as an attractive social partner, people need to strike a balance between desirability (positivity) and accuracy in their online self-presentation (Ellison et al. 2006). Individuals usually claim that they present an authentic image online, but objective measures and judges' ratings suggest that the images are slightly idealized at the cost of accuracy (Toma and Hancock 2011). Individuals are particularly motivated to manage their images when the presentation helps to gain rewards and construct identities (Leary and Kowalski 1990), so it is likely that people would be more intentional in their self-presentation when they enter a new environment and are eager to know and be known by others. Right after youth enter college, one of their major social goals is to build connections with new peers. They may not feel comfortable revealing broad and deep self-information and presenting the most authentic image of the self; on the other hand, they may be particularly intentional in crafting a positive image to facilitate relationship establishment. After students spend some time in college and get more familiar with the environment, they may become less guarded and less intentional in their self-presentation. They may not focus as much on presenting positive images; instead, they may reveal broader, deeper, and more authentic sides of the self.

Two Routes from Self-Presentation to Self-Esteem and Self-Concept Clarity

Self-presentation may contribute to self-esteem and self-concept clarity through two routes. First, according to self-presentation theories and symbolic interactionism, an audience's feedback may boost or diminish the presenter's self-esteem (Leary and Kowalski 1990) and shape the presenter's sense of self (Mead 1934). Among various features of audience feedback, supportiveness is particularly important, given that supportive feedback is usually the default response in social interactions (Goffman 1967). The social norm is preserved, if not enhanced, in the world of social media. Young people typically post positive comments and withhold negative feedback on Facebook (Yang and Brown 2014), making this dimension of audience response particularly relevant on social networking sites. Getting supportive feedback online enhances self-worth (Valkenburg et al. 2006; Yurchisin et al. 2005) and validates self-concept (Salimkhan et al. 2010; Yurchisin et al. 2005).

Second, after presenting themselves, individuals can reflect on their own performance and what others might think of them (Cooley 1902; Leary and Kowalski 1990). This is particularly true in online self-presentation where users are able to look at the products of their self work (Weber and Mitchell 2008). Findings on the relationship between self-reflection and self or identity development in the offline context are inconsistent. Some research shows that self-reflection is associated with more advanced identity development (Shain and Farber 1989), but other studies indicate that private self attentiveness can involve rumination and self-preoccupation (Trapnell and Campbell 1999), thus related to lower self-esteem (Anderson et al. 1996) and sometimes less self-insight (Grant et al. 2002). Although qualitative research suggests that self-reflection activated by online self- presentation contributes to youth's identity development (Weber and Mitchell 2008), the association has not been tested quantitatively.

The four dimensions targeting the content of self-presentation (breadth, depth, positivity, authenticity) have important relational implications. Revealing broad and deep self information in cyberspace elicits reciprocity (Barak and Gluck-Ofri 2007). Authentic self-presentation is valued because individuals have the moral obligation to be who they claim to be (Goffman 1959). Misrepresentation generates doubts about the actor's credibility, which is likely to make the audience hesitant to validate the performance. This is likely to happen on social networking sites as well. College students claim that they rarely misrepresent themselves on Facebook because the image will be questioned by their friends (Young and Quan-Haase 2009), suggesting that authentic self-presentation is a more promising route to receiving validation from the audience. The effect of positive self-presentation is more equivocal. While the hyperpersonal model proposes that such self-presentation can lead to positive impression formation and trigger positive feedback to confirm the presented image (Walther 1996), the audience may also question the presented image when a theoretically positive quality is overemphasized (Zwier et al. 2011). These findings shed light on how different facets of self-presentation on social networking sites may relate to audience's feedback.

Self-presentation, particularly on social networking sites, may involve much self-reflection. Young users post a chosen picture on social media platforms for reasons such as "[the] photo reflects my personality," "[the] photo commemorates an important moment in my life," and "my friends/family/

acquaintances accompany me in the photo" (Siibak 2009, Table 2). This indicates that youth reflect upon a wide range of self-related information when engaging in online self-presentation, such as self-concepts, life experiences, and social relationships. While it is a common assumption that young people post on social networking sites without much careful thought, their self-presentation on the sites actually seems quite intentional and self-reflective considering how they negotiate and balance various conflicting norms and needs on the platforms (e.g., Manago et al. 2008; Stephenson-Abetz and Holman 2012). These findings provide a foundation to make connections between breadth, depth, and intentionality of self-presentation on social networking sites and self-reflection.

Current Study

Social networking sites provide one means of asserting one's self and obtaining meaningful feedback from significant others in the new environment. Residential college students may take advantage of social networking sites to convey a self-image to others, and others' reactions should impact a student's sense of self. Self-reflection involved in the process of self- presentation should also contribute to how students see themselves. These processes, however, have not been fully investigated. We propose several hypotheses and research questions to explore how individuals adjust their self-presentation on social networking sites during the initial months in a new college environment, and how such online self-presentation during this transitional period contributes to two important aspects of self development: self-esteem and self-concept clarity. We focus on the first semester of students' college career because this is the primary period of adjustment to a new social context in which self-presentation may have heightened salience. The short duration between two research time points avoids problems such as radical changes in the media landscape. Several short-term longitudinal studies targeting college freshmen's first semester (e.g., Swenson et al. 2008; Swenson-Goguen et al. 2010–2011) have indicated that important psychosocial changes take place during this period. The goal of the study is to clarify the dynamic nature of youth's self-presentation on various dimensions during the transitional period, and how different dimensions of online self-presentation may be related to the self-outcomes through different processes.

Changes in Self-Presentation on Social Networking Sites

Key tasks in transitions such as the move to a residential college include acquiring new relationships and rebuilding a supportive social network. Effective self-presentation is crucial to achieving these objectives. We hypothesized that when college freshmen first arrive on campus, they will acknowledge being highly intentional in their online self-presentation. The presentation will be positive but not necessarily authentic; it will also be limited in breadth and depth. Later in the semester, the restrictions will be relaxed, leading to broader, deeper, more authentic, but less positive and less intentional presentations.

Self-Presentation on Social Networking Sites and Self Development

Research and theories suggest that the five facets of self-presentation can influence ones' self-esteem and self-concept clarity—but not necessarily directly. We proposed that the relationships are mediated by two variables: supportive audience feedback and self-reflection (see Fig. 1).

Broad and deep self-presentation provides more opportunities for offering feedback, which tends to be positive as a social convention (Goffman 1967). Authentic self-presentation will also relate to more supportive feedback due to its credibility and the moral obligation it fulfills (Goffman 1959). The relationship between positivity of self-presentation and audience feedback is less definitive (e.g., Walther 1996; Zwier et al. 2011). Thus, we hypothesized that breadth, depth, and authenticity of self-presentation will be associated with more supportive feedback from the audience. The valence of the relationship between positivity and audience feedback remains an open question. We also hypothesized that supportive feedback from the audience, in turn, will be related to higher self-esteem and self-concept clarity.

Breadth, depth, and intentionality were hypothesized to be positively associated with self-reflection. Although some postings on social networking sites may be rather spontaneous, quickly capturing a thought or picture of some random activity, it is inferred from research (e.g., Manago et al. 2008; Stephenson-Abetz and Holman 2012) that college students often put thought into what they post. Postings that are more conscious and intentional, as well as those involving more elaborated or intimate details about the self, are likely to be part of a process of self-reflection. Although we expected self-reflection to be associated with both self outcomes, contradictory findings in previous studies across online and offline contexts (e.g., Anderson et al. 1996; Weber and Mitchell 2008) dissuaded us from hypothesizing about the valence of these relationships.

Self development is an ongoing process in which both proximal and distal factors play a role (Harter 2012). The feedback received and the self-reflection activated may have immediate impact on how people think of themselves, and the effect can carry over to their long term self schema. Thus, the associations between the mediators and the self

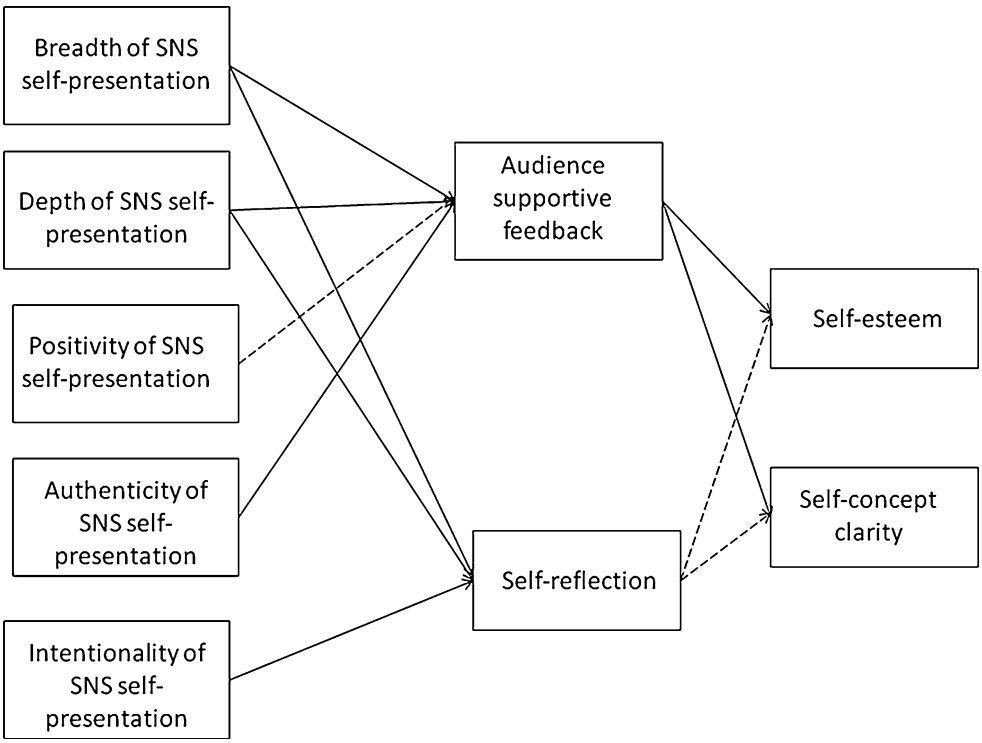

Fig. 1 Hypothesized model. *Solid lines* represent hypothesized positive associations. *Dotted lines* represent research questions

development outcomes were hypothesized to hold both concurrently and longitudinally. Similarities and differences between the simultaneous and prospective paths would reveal the complexity of self development in relation to the proposed mechanisms.

Method

Procedures and Participants

Because Facebook is the most popular social networking site, especially among youth (Duggan et al. 2015), the study focused on this website. Students needed to be Facebook users to participate. Individuals were recruited to participate in the study via e-mail messages sent to a random portion of incoming freshmen of a major Midwestern US university about a month before classes began. Research announcements were also made in several lectures enrolling a high percentage of freshmen during the first two weeks of fall semester classes. Interested students filled out an online questionnaire and were contacted again in mid-November for the follow-up survey.

A total of 218 freshmen completed the first survey (age $M = 18.07$, $S.D. = .33$; 64 % female, 79 % White) between late July and mid-September (T1). Because the number of individuals who qualified for the study (Facebook users who were freshmen) among the contacted students was unknown, it was not possible to accurately report response rates. However, the sex and ethnic distributions of the sample were close to those of the participating university's freshman class in the year the study was conducted (55 % female, 74 % White).

T tests were conducted to determine whether individuals ($n = 29$) who completed the survey relatively early (more than a week before the move-in day) differed from students who joined the sample later in their responses to survey items. We determined the significance level by adopting the Bonferroni correction while controlling for the scale-wise error rate. Under this approach, three items out of 56 showed significant mean differences between the two samples ($ps = .001$–$.006$; $ds = .58$–$.67$). Considering that difference existed in only a small portion of the items, we did not differentiate these groups in subsequent analyses.

Between mid-November and late December (T2), 135 participants (62 % of the T1 sample) completed the follow-up survey (69 % female, 79 % White). Attrition of the 83 participants (38 % of the T1 sample) was not related to age, $t(216) = -.04$, $p = .97$, sex, χ^2 (1) = 2.04, $p = .15$, or ethnicity, χ^2 (3) = 1.41, $p = .70$. Additional attrition analyses are reported later.

Measures

In addition to reporting demographic information, time spent on Facebook, and number of Facebook friends,

Table 1 Scale mean, standard deviation, and Cronbach's alpha

Scale	T1 mean (*SD*)	T2 mean (*SD*)	T1 α	T2 α
Breadth (7-pt)	4.07 (1.29)	**4.42** (1.21)**	.73	.75
Depth (7-pt)	2.39 (1.04)	**2.79** (1.02)***	.73	.70
Positivity (7-pt)	**5.93** (.85)*	5.78 (.92)	.75	.80
Authenticity (7-pt)	5.10 (1.04)	5.16 (.97)	.84	.81
Intentionality (7-pt)	5.27 (.99)	5.24 (.95)	.67	.63
Supportive feedback (5-pt)	3.59 (.61)	3.66 (.68)	.78	.81
Self-reflection (6-pt)	**4.46** (.92)*	4.28 (1.04)	.84	.90
Self-esteem (4-pt)	3.25 (.58)	3.30 (.61)	.82	.82
Self-concept clarity (7-pt)	4.73 (1.26)	4.67 (1.25)	.86	.89

Mean scores in bold are significantly higher than its counterpart at the other time point

* $p < .05$; ** $p < .01$; *** $p < .001$

participants responded to survey items addressing constructs included in the conceptual model. Items assessing these constructs were administered at both time points. Facebook-related questions were answered based on participants' Facebook use over the two-week span prior to the survey administration. Table 1 provides descriptive statistics and Cronbach's alphas of the scales. Scores for all scales represented the mean of item responses.

Dimensions of Facebook Self-Presentation

A 4-item, 7-point (1 = *strongly disagree*; 7 = *strongly agree*) breadth scale was designed for this study to reflect the amount of self-information being disclosed (Cozby 1973). Higher scores represented more aspects of one's self being communicated (Derlega and Chaikin 1977) through Facebook self-presentation. The other four dimensions of self-presentation were measured by modified versions of the Revised Self-Disclosure Scale (RSDS; Wheeless 1976, 1978), using the same anchor points as the breadth scale. Higher scores reflected deeper (depth scale, 9 items), more positive (positivity scale, 6 items), more authentic (authenticity scale, 7 items), and more deliberate (intentionality scale, 5 items) Facebook self-presentation. Sample items of the scales included, "What I put on Facebook was a fairly comprehensive representation of myself" (breadth), "I openly shared my emotions" (depth), "I normally expressed positive feelings about myself on Facebook" (positivity), "My statements about my feelings on Facebook were always honest" (authenticity), and "When I posted or shared things on Facebook, I rarely thought about its consequences" (intentionality, reverse item).

Audience Supportive Feedback

A 5-item scale was developed to measure participants' perception of how much support they received from audience's feedback, defined as what Facebook friends posted, commented, shared, and tagged on the participants' Facebook page. Participants responded to the following items on a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*): "I felt supported by the feedback," "I got sufficient support from the feedback," "The feedback mostly made me feel good," "I got a lot of feedback from my Facebook friends," and "The feedback was mostly negative (reverse item; removed from final analysis due to poor performance in factor analyses)."

Self-Reflection

The Engagement in Self-Reflection Subscale from the Self-Reflection and Insight Scale (Grant et al. 2002) was used to measure students' level of self-reflection. With a 6-point response scale (1 = *strongly disagree*; 6 = *strongly agree*), this measure was composed of 6 items (e.g., "I frequently examine my feelings"). Higher scores represented a higher level of self-reflection.

Self-Esteem

Self-esteem was measured with 5 items of the 4-point Rosenberg Self-Esteem Scale (Rosenberg 1965; 1 = *strongly disagree*; 4 = *strongly agree*). Higher scores represented higher global self-worth and more positive self-views. "On the whole, I am satisfied with myself" was a sample item.

Self-Concept Clarity

Nine items from the Self-Concept Clarity Scale (SCC; Campbell et al. 1996) were administered to measure self-concept clarity. Items were answered on a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*). Higher scores reflected a clearer sense of self. "In general, I have a clear sense of who I am and what I am" was an item in the scale.

Scale Validity and Reliability

To create scales that were invariant across time so that meaningful comparisons could be made, we performed configural and factorial invariance tests. Configural invariance (i.e., equality of number of factors) was tested by following the guidelines provided by Kaplan (2009): running factor analyses on T1 and T2 datasets separately for each of the 9 scales. The step helped to clarify which items should be kept or removed so that configural invariance would be tenable, after which factorial invariance (i.e., whether the factor loadings matrices for the T1 and T2 data were equal) was tested. This step helped to establish validity of the scales. All models were tested by using Mplus 7.0.

Results of configural invariance tests suggested that after eliminating some items, a one-factor solution was the best fit for each of the 9 scales at both times. Factorial invariance tests were then performed on these remaining items, and model fit was acceptable for all scales. Results of the tests are available upon request.

With one exception, all scales had acceptable internal consistencies at both time points; Cronbach's alphas ranged from .70 to .90. Although Cronbach's alphas of the intentionality scale were relatively low at both times, they were consistent with those reported by Wheeless (1976, 1978) when college students were asked to consider their communication patterns in general (αs = .65–.67). See Table 1 for descriptive statistics and Cronbach's alphas of the scales.

Attrition Analysis

We also examined whether attrition influenced scale scores and data distribution. Conditions were considered regarding the appropriateness of performing data imputation. We first compared staying participants' and leaving participants' T1 scale scores. Only one scale manifested a significant mean difference: Self-concept clarity was higher among staying participants ($M = 4.86$, $S.D. = 1.23$) than those who did not complete T2 measures ($M = 4.50$, $S.D. = 1.29$), $t(215) = 2.04$, $p = .04$, but the effect size was small ($d = .29$). Then we examined whether scale variances differed between T1 and T2. F tests of equality of variances suggested that equality held for all 9 scales (ps = .08–.97). Finally, because Little's (1988) Missing Completely At Random test indicated that the data were missing completely at random, χ^2 (252) = 263.16, $p = .30$, multiple imputations were performed using Mplus 7.0; the number of iterations was set at 10. All hypotheses were tested based on imputed datasets.

Plan of Analysis

Hypotheses regarding changes in self-presentation on social networking sites were tested by performing t tests in SPSS. The hypothesized model was examined by running path analyses with Mplus 7.0. The model was tested twice—first with concurrent data and then with longitudinal data.

Results

Our participants were experienced Facebook users; 72 % of them had used Facebook for more than 3 years at the time of the first survey administration, and the other 28 % had used Facebook for as little as less than 6 months to as much as 3 years. At both T1 and T2, the majority of the participants spent less than two hours using Facebook in a typical day (69 and 77 %, respectively). At T1, participants had an average of 606 Facebook friends, with the median being 540. At T2, they had an average of 607 Facebook friends, with the median being 551.

Changes in Facebook Self-Presentation Over Time

Consistent with part of our hypotheses, participants reported that from T1 to T2 their Facebook self-presentation became broader, pooled $t(34) = 3.59$, $p = .001$, $d = .30$, deeper, pooled $t(42) = 4.55$, $p < .001$, $d = .37$, and less positive, pooled $t(28) = -2.15$, $p = .04$, $d = -.19$. Contrary to prediction, there was no difference in levels of authenticity, pooled $t(49) = .67$, $p = .51$, $d = .05$, or intentionality, pooled $t(34) = -.37$, $p = .72$, $d = -.03$.

The Concurrent Model

The concurrent model was tested by using survey data from both times. All 18 variables (9 for T1 and 9 for T2) were entered into one model. The hypothesized paths were formulated only among concurrent variables, but the endogenous variables were set to correlate with their counterparts across time (e.g., T1 self-reflection was correlated with T2 self-reflection). The two concurrent mediators were also set to be correlated. T1 self-esteem was allowed to correlate with both T1 and T2 self-concept clarity, and so was T2 self-esteem. Because t tests and ANOVAs showed that for audience supportive feedback there were sex differences at T1, $t(216) = 3.27$, $p = .001$, and ethnic differences at T1, $F(5212) = 2.85$, $p = .02$ and T2, $F(5,128) = 2.96$, $p = .02$, these two demographic variables were also entered into the model as control

variables. Ethnicity was dichotomized into White and non-White to allow for sufficient cases in each category.

As a first step, all paths were constrained to be equal across time. Fit of the hypothesized model was good: χ^2 (101) = 118.29, p = .11; RMSEA = .028, 90 % CI .000–.047; CFI = .96; TLI = .95. Path coefficients of the model are presented in Table 2. The path results held for both time points. As hypothesized, breadth, depth, and authenticity were associated with more perceived audience supportive feedback. Presenting oneself in a positive light was also related to the perception of higher supportive feedback. Audience supportive feedback was related to higher self-esteem, as hypothesized; contrary to expectation, however, it was not related to self-concept clarity. Supporting our hypothesis, intentionality was related to higher self-reflection, but the hypothesized paths from breadth and depth to self-reflection were not significant. Self-reflection was not associated with self-esteem, but was related to lower self-concept clarity. For all significant direct paths, the associated indirect paths were also significant (see Table 2, Fig. 2).

Sex was not associated with perceived supportive feedback at either time (β_{T1} = .16, p = .16; β_{T2} = .14, p = .15), but being a White student was related to higher perceived supportive feedback at T2 (β_{T1} = .26, p = .18; β_{T2} = .23, p = .048). Each T1 mediator and T1 outcome was correlated with its T2 counterpart (rs = .28–.72, ps = .001 and below). At neither time was the perception of audience supportive feedback correlated with self-reflection (rs = .03–.04, ps = .65). Self-esteem and self-concept clarity were correlated both concurrently and across time (rs = .46–.65, ps < .001).

The Longitudinal Model

In the longitudinal model, T2 self-esteem and self-concept clarity were regressed on T1 mediators, and the two mediators were regressed on the five T1 self-presentation variables. T1 self-esteem and T1 self-concept clarity served as control variables for both T2 self outcomes; paths were also established between these two control variables and the two mediators with the valence (or lack thereof) being consistent with that of the hypothesized model. The two mediators were set to be correlated with each other, and so were the T2 self outcomes. As in the previous model, because t tests and ANOVAs showed that there were sex and ethnic differences in perceived audience supportive feedback, these two demographic variables were treated as control variables. Ethnicity was dichotomized into White and non-White to allow for sufficient cases in each category.

The model fit the data well: χ^2 (19) = 24.28, p = .19; RMSEA = .036, 90 % CI = .000–.073; CFI = .98;

Table 2 Path analysis results of the concurrent model

	b	SE	β_{T1} (95 % CI)	β_{T2} (95 % CI)
Direct paths				
Breadth → feedback	*.09***	*.03*	*.20 (.08, .32)*	*.17 (.06, .27)*
Depth → feedback	*.09***	*.03*	*.16 (.05, .27)*	*.14 (.04, .23)*
Positivity → feedback	.13**	.04	.19 (.08, .30)	.18 (.08, .29)
Authenticity → feedback	*.14****	*.03*	*.23 (.12, .35)*	*.19 (.10, .29)*
Breadth → self-reflection	*−.07*	*.05*	*−.10 (−.22, .03)*	*−.08 (−.18, .03)*
Depth → self-reflection	*.02*	*.06*	*.03 (−.12, .17)*	*.02 (−.10, .14)*
Intentionality → self-reflection	*.23****	*.06*	*.26 (.14, .38)*	*.22 (.11, .32)*
Feedback → self-esteem	*.14***	*.05*	*.15 (.05, .25)*	*.16 (.06, .26)*
Self-reflection → self- esteem	−.04	.04	−.06 (−.17, .05)	−.07 (−.18, .05)
Feedback → self-concept clarity	*.02*	*.09*	*.01 (−.08, .10)*	*.01 (−.09, .11)*
Self-reflection → self-concept clarity	−.16*	.07	−.12 (−.21, −.02)	−.14 (−.25, −.03)
Indirect paths				
Breadth → feedback → self-esteem	*.01**	*.01*	*.03 (−.20, .26)*	*.03 (−.19, .24)*
Depth → feedback → self-esteem	*.01**	*.01*	*.02 (−.19, .24)*	*.02 (−.18, .22)*
Positivity → feedback → self-esteem	.02*	.01	.03 (−.19, .25)	.03 (−.19, .25)
Authenticity → feedback → self-esteem	*.02***	*.01*	*.03 (−.20, .27)*	*.03 (−.19, .25)*
Intentionality → self-reflection → self-concept clarity	−.04*	.02	−.03 (−.27, .21)	−.03 (−.27, .21)

Italics represent one-tailed results. Controlled demographic paths are not included for presentation clarity

* p < .05; ** p < .01; *** p < .001

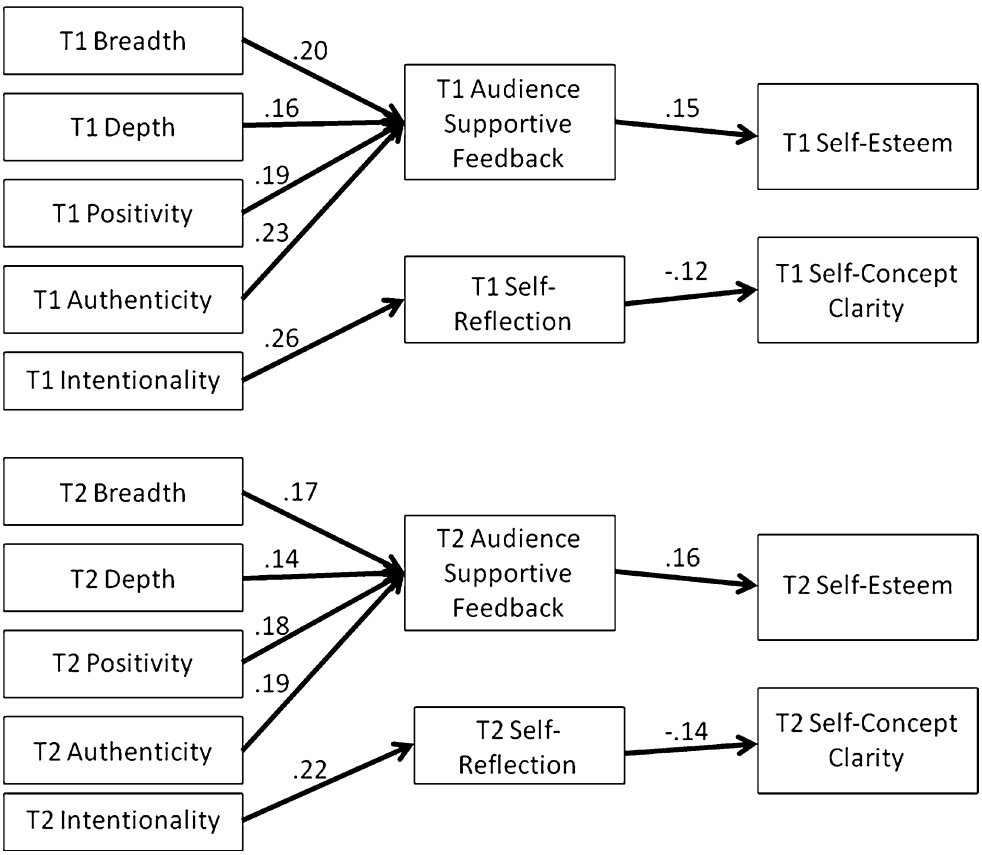

Fig. 2 Concurrent associations among Facebook self-presentation, audience supportive feedback, self-reflection, and self outcomes at two different time points. The reported statistics are standardized coefficients. All direct and indirect associations involving the displayed paths are significant. For figure clarity, correlations and demographic control variables are not included in the figure

TLI = .96. Path coefficients of the model are presented in Table 3. As expected, T1 breadth, depth, and authenticity were associated with the perception of more audience supportive feedback at T1. Presenting oneself in a positive light at T1 was also related to T1 perceived audience support. Contrary to expectation, however, perceived supportive feedback was not related to T2 self-esteem or self-concept clarity. T1 depth and intentionality of self-presentation were positively associated with T1 self-reflection, as hypothesized, but the expected association between T1 breadth and T1 self-reflection was not significant. T1 self-reflection was positively associated with T2 self-esteem, but it did not have a significant association with T2 self-concept clarity. There was only one significant indirect path: T1 intentionality positively related to T2 self-esteem via T1 self-reflection (see Table 3, Fig. 3). As for the controlled paths and correlations, T1 self-esteem was related to a higher level of T1 perceived supportive feedback, T2 self-esteem, and T2 self-concept clarity. T1 self-concept clarity was only associated with T2 self-concept clarity (see Table 3, Fig. 3). Females reported a higher level of T1 perceived audience supportive feedback ($\beta = .32$, $p = .01$), but ethnicity was not associated with this mediator ($\beta = .22$, $p = .10$). The two self outcomes were significantly correlated ($r = .28$, $p = .01$), but the mediators were not ($r = .10$, $p = .14$).

Discussion

Self-presentation, a fundamental element of self development (Baumeister and Tice 1986), is particularly important during the transition to college. Individuals are motivated to engage in self-presentation when they aim to make social connections, enhance or maintain self-esteem, and develop identity (Leary and Kowalski 1990). All these goals are salient for residential college freshmen, who typically feel anonymous (Scanlon et al. 2007) and dislocated (Chow and Healey 2008) in the new environment. The changes and consistencies in students' online self-presentation across the transition to college gain importance as one considers concurrent and longitudinal associations between online self-presentation and salient self outcomes such as self-esteem or self-concept clarity.

Changes in Facebook Self-Presentation: Broader, Deeper, and Less Positive

College freshmen who participated in our study were guarded in self-presentation when they first arrived on campus, but became more relaxed later in the semester. At the same time, they reported being equally deliberate in their self-presentation at both times, suggesting that their

Table 3 Path analysis results of the longitudinal model

	b	SE	β (95 % CI)
Direct paths of interest			
T1 breadth → T1 feedback	*.08***	*.03*	*.17 (.04, .30)*
T1 depth → T1 feedback	*.10***	*.04*	*.18 (.06, .30)*
T1 positivity → T1 feedback	.12**	.04	.17 (.05, .29)
T1 authenticity → T1 feedback	*.11***	*.04*	*.20 (.07, .32)*
T1 breadth → T1 self-reflection	*−.05*	*.05*	*−.08 (−.21, .06)*
T1 depth → T1 self-reflection	*.12**	*.06*	*.14 (.01, .27)*
T1 intentionality → T1 self-reflection	*.37****	*.06*	*.40 (.29, .51)*
T1 feedback → T2 self-esteem	*−.07*	*.07*	*−.07 (−.20, .07)*
T1 self-reflection → T2 self- esteem	.08*	.04	.12 (.02, .23)
T1 feedback → T2 self-concept clarity	*−.05*	*.12*	*−.03 (−.14, .09)*
T1 self-reflection → T2 self-concept clarity	.04	.07	.03 (−.06, .12)
Controlled paths			
T1 self-esteem → T1 feedback	*.27****	*.08*	*.25 (.11, .40)*
T1 self-concept clarity → T1 feedback	*−.07*	*.04*	*−.14 (−.28, .01)*
T1 self-esteem → T1 self-reflection	−.21	.13	−.13 (−.29, .03)
T1 self-concept clarity → T1 self-reflection	−.06	.06	−.08 (−.24, .08)
T1 self-esteem → T2 self- esteem	*.71****	*.09*	*.67 (.50, .84)*
T1 self-concept clarity → T2 self- esteem	*.03*	*.05*	*.07 (−.15, .28)*
T1 self-esteem → T2 self-concept clarity	*.57****	*.17*	*.27 (.11, .42)*
T1 self-concept clarity → T2 self-concept clarity	*.55****	*.08*	*.56 (.41, .70)*
Significant indirect path			
T1 intentionality → T1 self-reflection → T2 Self-esteem	.03*	.01	.05 (−.25, .34)

Italics represent one-tailed results. Controlled demographic paths are not included for presentation clarity

* $p < .05$; ** $p < .01$; *** $p < .001$

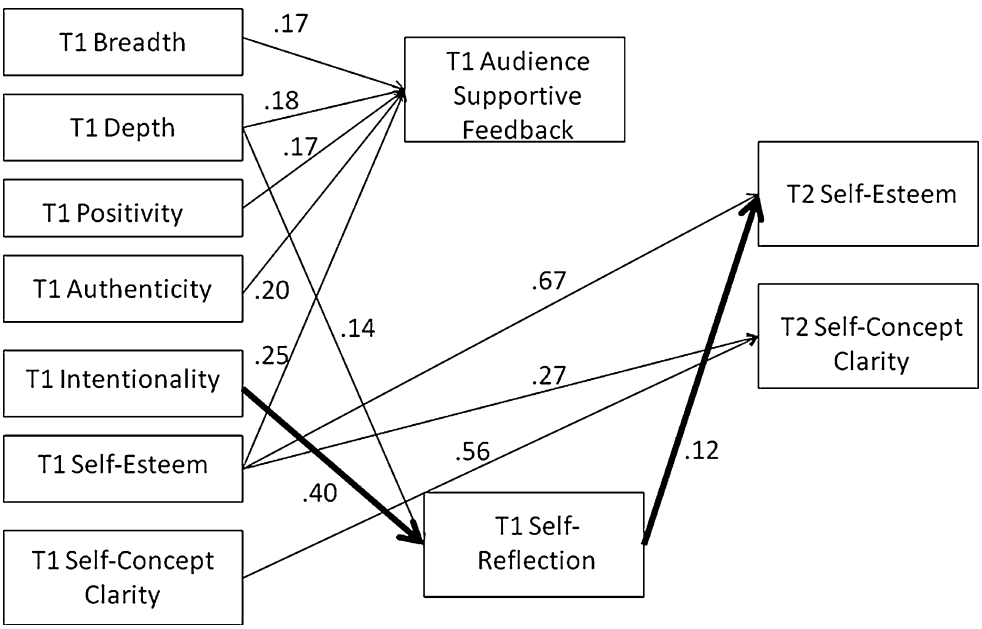

Fig. 3 Longitudinal associations among Facebook self-presentation, audience supportive feedback, self-reflection, and self outcomes. The reported statistics are standardized coefficients. All displayed paths are significant. The *thin lines* represent direct paths. The *thick lines* represent an indirect path. For figure clarity, correlations and demographic control variables are not included in the figure

varying presentations resulted from careful assessment of contextual norms and the presentational goals they aimed to achieve. Among the motivations and reasons for self-presentation (Baumeister 1982; Baumeister and Tice 1986; Leary and Kowalski 1990), obtaining social rewards seemed to stand out at the transitional period. Initially, this

involved making oneself socially attractive in the new environment. Not knowing how accepting the new peers would be, students naturally followed the social convention of revealing limited and superficial self-information (Altman and Taylor 1973). Later in the semester, freshmen may have developed deeper friendships and gained sufficient identity capital (Côté and Levine 2002) to maintain the image of a proper and likable college student, and thus felt less need for restricting their self-expression.

Despite these changes, freshmen reported that their Facebook self-presentation was equally authentic at both time points, which suggests that for freshmen, selective self-presentation does not compromise authenticity. Others have reported a similar, high level of self-perceived authenticity in online self-presentation (e.g., Toma and Hancock 2011). It may indicate how digital youth conceptualize the self: there is a core self on which they can base assessments of the authenticity and accuracy of self-presentation, but they get to choose which part of the self they would like to display in different contexts. Scholars have yet to examine whether viewers of students' Facebook profiles regard the self-presentations as equally authentic, despite changes in other dimensions, over the period of transition. The issue is worth pursuing given the gap that other researchers have noted between self-reported and judge rated authenticity (e.g., Toma and Hancock 2011), and given the importance of audience supportive feedback to college students' self-esteem.

Online Self-Presentation and Self Development

Earlier research suggested that leaving high school and starting a new life phase may impose challenges on a person's self-worth (e.g., Youth in Transition data in O'Malley and Bachman 1983). Paul and Brier (2001) found that friendsickness, a preoccupation with pre-college friends and concern over losing them, was common among college freshmen and was related to lower self-esteem. The ability of more recent cohorts of students to maintain pre-college ties through social media and other communication technologies may have diminished the incidence of friendsickness and its impact on self-esteem. This might explain the consistent levels of self-esteem that we observed in our sample across their first semester in college.

It is noteworthy, however, that the composition of one's Facebook audience may evolve across the college transition, involving more new college friends towards the end of the semester. Judging from the close numbers of participants' Facebook friends across time, some students seemed to engage in "Facebook purge," or deleting people that were no longer relevant to or in touch with them, while adding new college associates to the network (Yang 2015). Whereas pre-college friendship facilitates adjustment during the first few weeks at a college campus, connections with new on-campus friends are more crucial later in the first semester (Swenson et al. 2008). Given the shifting significance of pre-college and college peers across this period, future research should explore the composition of social networking site audience and its implications during this transition. Looking into the composition of students' social networking site audience might also help to explain the lack of association between perceived support from the feedback and self-esteem in the longitudinal model. Supportive feedback early in the semester, possibly coming largely from pre-college friends, may not be as salient to self-esteem at the end of the semester, when students are more attentive to responses from new college friends—as reflected in the significant path between supportive feedback and self-esteem in the concurrent model. Alternatively, it is possible that global self-worth is more sensitive to concurrent social stimuli. Note that in longitudinal models the strong stability in an outcome typically attenuates the effects between other predictors and the outcome (Adachi and Willoughby 2014). The stability in self-esteem across time may also be the reason for the null longitudinal effect of perceived audience support.

Despite the observed stability of self-esteem between the two time points, this self construct was subject to individual variability, related in part to different patterns of Facebook use. Several experimental studies have found that exposure to one's own Facebook profile or editing one's Facebook page leads to enhanced self-esteem (Gentile et al. 2012; Toma 2013). Our findings suggest that, in actual usage of social networking sites, this association is mediated by the feedback that college students receive from Facebook friends. Because of the audience's inclination to post positively (Yang and Brown 2014), Facebook users are likely to encounter reassuring comments or "likes" from the audience when reviewing or updating their own Facebook pages, making it a self-esteem bolstering experience. Our model also reveals that some specific ways of usage—broader, deeper, more positive and authentic Facebook self-presentations—are more likely to associate with higher concurrent self-esteem via perceived supportive feedback. The findings reaffirm that self development is a social process in which one's sense of self is affected by how others interact with the individual (Erikson 1968; Mead 1934).

As expected, intentional online self-presentation was associated with a higher level of self-reflection. More surprising was that self-reflection was associated with lower concurrent self-concept clarity (at both time points), but higher self-esteem in the longitudinal model. One explanation for these seemingly contradictory findings lies in the type of reflectivenss activated. Self-reflection can be

constructive when it is motivated by curiosity about the self, but it can also be ruminative, characterized by self mistrust, distress about the self, and frequent re-evaluation of what one has done through a negative lens (Anderson et al.1996; Trapnell and Campbell 1999).

Unlike the measures common to studies of rumination, which explicitly focus on thinking over negative events or emotions (e.g., Nolen-Hoeksema 2000; Trapnell and Campbell 1999), the self-reflection scale used in this study is more neutral in its tone. The self-reflection that students were reporting during their first semester may be prompted by uncertainties about the self, thus resulting in negative contemporaneous associations with self-concept clarity. Another explanation lies in Gergen's (1991) argument that technologies such as TV and radio lead to the multiplicity of identity by exposing individuals to the multiple roles they can adopt and the diverse values they can subscribe to, which results in the lack of a coherent sense of self. Interestingly, new media today not only make users aware of the multiple options, they also allow users to experiment with and act out these possibilities. Students who were intentional in their interaction with the technology (i.e., online self-presentation) may have thought through more identity-related possibilities and thus found it challenging to summarize one's identity as a unitary entity for the time being. Over time, however, self-reflection may heighten awareness of some essential elements of the self, which, according to self-affirmation theory (Sherman and Cohen 2006; Steele 1988), should protect self-integrity and contribute to a heightened sense of self-worth.

If self-reflection does bolster long-term self-esteem by raising awareness of valued self-characteristics, why is there not a similar path to self-concept clarity? Perhaps the threshold of improving this dimension of identity is higher. Whereas self-esteem can be protected by affirming one or a few domains of the self (e.g., roles, values, relationships, etc.; Sherman and Cohen 2006), improvement in self-concept clarity may require thorough organization and integration of various domains; simply being aware of a few is not sufficient. In addition, a design of longer duration (e.g., a few years apart between the two time points) may have been more effective in capturing the changes in self-concept clarity.

A few paths inconsistent with the hypotheses merit some comment. Breadth of Facebook self-presentation was not associated with self-reflection. Revealing deep sides of the self was related to a higher degree of self-reflection only in the longitudinal model, and the association was not particularly strong. The findings suggest that the level of self-reflection has little to do with the content (breadth and depth) of one's posts when controlling for the amount of thought the person invests in the presentation (intentionality). Also contrary to our expectation, perceived audience support was not related to self-concept clarity in either the concurrent or the longitudinal model. One possible reason may be that students' Facebook posts only involve aspects of the self about which they feel secure and certain. They conceal more ambivalent or negative aspects of self for which supportive audience feedback could help clarify self-concept. This is suggested by their relatively low scores of the depth scale and high scores of the positivity scale. Thus, even though audience acceptance makes students feel good about themselves, it does not help them clarify their self-concept. The null effect of perceived support on self-esteem and self-concept clarity in our longitudinal model also suggests the need to further investigate the nature and implications of feedback received on social networking sites. Our scale tapped into public feedback posted on Facebook. These posts can provide timely feedback and support, but they also tend to be short and may lack the depth and intimacy that can exert long-term impact on receivers' self development.

Strengths and Limitations

This study presents the dynamic nature of online self-presentation among youth during the transition to a residential college. By examining specific dimensions of self-presentation, it reveals various associations between Facebook use and self development via interpersonal and intrapersonal mechanisms. The longitudinal data reveal consistencies and changes in online self-presentation and patterns of variable associations.

In interpreting findings from this study, several limitations should be kept in mind. First, our model is not an exhaustive one. Although we included five dimensions of self-presentation and explored different processes contributing to self development, there are other predictors, mediators, and identity outcomes that should be studied in the future. For instance, we focused on perceived support from the feedback because this dimension of audience response is particularly salient in social interaction in general (Goffman 1967) and on social media in particular (Yang and Brown 2014; Valkenburg et al. 2006). However, it is also important to understand how other forms of audience reaction to youth's online self-presentation may influence young people's development. Repeated, harsh feedback, for example, might be a sign of cyberbullying and a predictor of low self-worth. Also, self-presentation takes place online and offline, but this study focused on online self-presentation only. Even within the online context, young people today use more than one platform. Each social networking site has its unique norms and may influence young users' development in different ways. Future research should explore how various offline and online contexts or platforms relate differently to young

people's self development and interpersonal relationships. The ultimate goal is to obtain a comprehensive picture of young people's navigation across spaces and its overall implications for their well-being.

The second set of limitations concerns how and when some of these variables were measured. Self-presentation was measured through self-report surveys. Additional measurements, such as judges' rating, will allow scholars to see the discrepancies between self-perceived and other-perceived images, and clarify whether data obtained from these different perspectives differ in their predictive power. In addition, in our longitudinal model, the mediators were measured at the same time as the self-presentation variables. To truly unravel the directionality, a model involving predictors, mediators, and outcomes all measured at different times would be required.

The third set of limitations pertains the context. The study focused on university freshmen and their transition to college. Findings may not be generalized to younger adolescents or earlier educational transitions. Future studies should consider how the contexts surrounding younger adolescents (e.g., smaller school size, smaller social network, and higher levels of parental monitoring, relative to college students) affect younger adolescents' online self-presentation as well as the impact of social media use on their sense of self. Also, the study was conducted at a major, residential university, so it would be most appropriate to interpret the results within this context. Institutions with a smaller student body or a commuter population are likely to have different interpersonal dynamics that may alter major concerns for self-presentation. Although we explained our findings in the context of college transition, this study did not involve a control group to warrant college transition as the cause of the findings. Other factors, such as changes in Facebook features or norms of Facebook use, were also potential reasons for the changes observed in our study. Even though we tried to limit the duration between the two rounds of data collection to avoid the issue, we cannot completely rule out the possibility.

Conclusion

In the digital era, self-presentation is no longer confined to face-to-face encounters. Our study provides detailed information regarding how college freshmen's online self-presentation changes across an important developmental transition, and how different aspects of online self-presentation contribute to youth's self development through different processes during this period. The findings show that self-presentation is a dynamic process; residential college freshmen become less guarded in their online self-presentation after they spend some time in the university. Revealing diverse and deep aspects of one's life while remaining positive and authentic invites more supportive feedback from the audience, which is associated with higher self-esteem concurrently. Thinking carefully about one's own online self-presentation is related to more reflection upon the self; although self-reflection is related to lower contemporaneous self-concept clarity, it boosts the presenter's self-esteem in the long run. At the same time, however, practitioners should be aware of the possibilities of youth using social networking sites as an escape from self-esteem struggles. Harter (2012) argues that it is more important to find out the reasons for low self-esteem and address them rather than to enhance self-esteem for its own sake. Indulging oneself in the use of social networking sites and the positive feedback from the audience without resolving the real causes of low self-worth may hinder one's psychological well-being in the long term. Future research should continue to unravel the complexities of youth's online self-presentation and explore how strategic use of social networking sites can ease significant developmental transitions by allowing young people to claim identity and make connections.

Author Contribution C-cY conceived of the study, participated in its design and coordination, collected data, performed the statistical analyses, interpreted the results, and drafted the manuscript; BBB participated in the design and coordination of the study, interpreted the results, and critically revised the manuscript. Both authors read and approved the final manuscript.

Conflict of interests The authors report no conflict of interests.

References

Adachi, P. J. C., & Willoughby, T. (2014). Interpreting effect sizes when controlling for stability effects in longitudinal autoregressive models: Implications for psychological science. *European Journal of Developmental Psychology, 12*(1), 116–128. doi:10.1080/17405629.2014.963549.

Altman, I., & Taylor, D. A. (1973). *Social penetration: The Development of Interpersonal Relationships*. New York, NY: Holt, Rinehart and Winston.

Anderson, E. M., Bohon, L. M., & Berrigan, L. P. (1996). Factor structure of the private self-consciousness scale. *Journal of Personality Assessment, 66*, 144–152. doi:10.1207/s15327752jpa6601_11.

Arnett, J. J. (2015). *Emerging adulthood: The winding road from the late teens through the twenties* (2nd ed.). New York: Oxford University Press.

Barak, A., & Gluck-Ofri, O. (2007). Degree and reciprocity of self-disclosure in online forums. *Cyberpsychology and Behavior, 10*(3), 407–417. doi:10.1089/cpb.2006.9938.

Baumeister, R. F. (1982). A self-presentational view of social phenomena. *Psychological Bulletin, 91*(1), 3–26. doi:10.1037/0033-2909.91.1.3.

Baumeister, R. F., & Tice, D. M. (1986). Four selves, two motives, and a substitute process self-regulation model. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 63–74). New York, NY: Springer-Verlag.

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology, 70*(1), 141–156. doi:10.1037/0022-3514.70.1.141.

Chickering, A. W., & Reisser, L. (1993). *Education and identity* (2nd ed.). San Francisco, CA: Jossey-Bass.

Chow, K., & Healey, M. (2008). Place attachment and place identity: First-year undergraduates making the transition from home to university. *Journal of Environmental Psychology, 28*(4), 362–372. doi:10.1016/j.jenvp.2008.02.011.

Cooley, C. H. (1902). *Human nature and the social order*. New York, NY: Charles Scriber's Sons.

Côté, J. E., & Levine, C. G. (2002). *Identity formation, agency, and culture: A social psychological synthesis*. Mahwah, NJ: Lawrence Erlbaum Associates.

Cozby, P. C. (1973). Self-disclosure: A literature review. *Psychological Bulletin, 79*(2), 73–91. doi:10.1037/h0033950.

Davis, K. (2013). Young people's digital lives: The impact of interpersonal relationhsip and digital media use on adolescnets' sense of identity. *Computers in Human Behavior, 29*, 2281–2293. doi:10.1016/j.chb.2013.05.022.

Derlega, V. J., & Chaikin, A. L. (1977). Privacy and self-disclosure in social relationships. *Journal of Social Issues, 33*(3), 102–115.

Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., & Madden, M. (2015). *Social media update 2014.* Washington, D. C.: PEW Research Center. Retrieved from http://www.pewinternet.org/files/2015/01/PI_SocialMediaUpdate20144.pdf

Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication, 11*(2), 415–441. doi:10.1111/j.1083-6101.2006.00020.x.

Erikson, E. (1968). *Identity: Youth and crisis*. Oxford, England: Norton & Co.

Gentile, B., Twenge, Jean M., Freeman, E. C., & Campbell, W. K. (2012). The effect of social networking websites on positive self-views: An experimental investigation. *Computers in Human Behavior, 28*(5), 1929–1933. doi:10.1016/j.chb.2012.05.012.

Gergen, K. J. (1991). *The saturated self: Dilemmas of identity in contemporary life*. New York, NY: Basic Books.

Goffman, E. (1959). *The presentation of self in everyday life*. Oxford, England: Doubleday.

Goffman, E. (1967). *Interaction ritual: Essays on face-to-face interaction*. Oxford, England: Aldine.

Grant, A. M., Franklin, J., & Langford, P. (2002). The self-reflection and insight scale: A new measure of private self-consciousness. *Social Behavior and Personality, 30*(8), 821–835. doi:10.2224/sbp.2002.30.8.821.

Harter, S. (1999). *The construction of the self: A developmental perspective*. New York, NY: The Guilford Press.

Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). New York, NY: The Guilford Press.

Kaplan, D. (2009). *Structural equation modeling: Foundations and extensions* (2nd ed.). Los Angeles: Sage.

Kim, J., & Dindia, K. (2011). Online self-disclosure: A review of research. In K. B. Wright & L. M. Webb (Eds.), *Computer-mediated communication in personal relationships* (pp. 156–180). New York, NY: Peter Lang Publishing.

Kroger, J., Martinussen, M., & Marcia, J. (2010). Identity status change during adolescence and young adulthood: A meta-analysis. *Journal of Adolescence, 33*, 683–698. doi:10.1016/j-adolescence.2009.11.002.

Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-component model. *Psychological Bulletin, 107*(1), 34–47. doi:10.1037/0033-2909.107.1.34.

Lee, C., Dickson, D. A., Conley, C. S., & Holmbeck, G. N. (2014). A closer look at self-esteem, perceived social support, and coping strategy: A prospective study of depressive symptomatology across the transition to college. *Journal of Social and Clinical Psychology, 33*(6), 560–585. doi:10.1521/jscp.2014.33.6.560.

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*(404), 1198–1202. doi:10.1080/01621459.1988.10478722.

Livingstone, S. (2008). Taking risky opportunities in youthful content creation: Teenagers' use of social networking sites for intimacy, privacy and self-expression. *New Media & Society, 10*(3), 393–411. doi:10.1177/1461444808089415.

Manago, A. M., Graham, M. B., Greenfield, P. M., & Salimkhan, G. (2008). Self-presentation and gender on MySpace. *Journal of Applied Developmental Psychology, 29*(6), 446–458. doi:10.1016/j.appdev.2008.07.001.

Mead, G. H. (1934). *Mind, self, and society from the standpoint of a social behaviorist*. Chicago: University of Chicago Press.

Michikyan, M., Dennis, J., & Subrahmanyam, K. (2015). Can you guess who I am? Real, ideal, and false self-presentation on Facebook among emerging adults. *Emerging Adulthood, 3*(1), 55–64. doi:10.1177/2167696814532442.

Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology, 109*(3), 504–511. doi:10.1037/0021-843X.109.3.504.

O'Malley, P. M., & Bachman, J. G. (1983). Self-esteem: Change and stability between ages 13 and 23. *Developmental Psychology, 19*(2), 257–268.

Paul, E. L., & Brier, S. (2001). Friendsichness in the transition to college: Precollege predictors and college adjustment correlates. *Journal of Counseling & Development, 79*(1), 77–89. doi:10.1002/j.1556-6676.2001.tb01946.x.

Perez, T., Cromley, J., & Kaplan, A. (2014). The role of identity development, values, and costs in college STEM retention. *Journal of Educational Psychology, 106*(1), 315–329. doi:10.1037/a0034027.

Rieger, S., Gollner, R., Trautwein, U., & Roberts, B. W. (2015). Low self-esteem prospectively predicts depression in the transition to young adulthood: A replication of Orth, Robins, and Roberts (2008). *Journal of Personality and Social Psychology,*. doi:10.1037/pspp0000037.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Salimkhan, G., Manago, A., & Greenfield, P. (2010). The construction of the virtual self on MySpace. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 4(1),* article 1. Retrieved from: http://cyberpsychology.eu/view.php?cisloclanku=2010050203&article=1

Scanlon, L., Rowling, L., & Weber, Z. (2007). 'You don't have to like an identity…you are just lost in a crowd': Forming a student identity in the first-year transition to university. *Journal of Youth Studies, 10*(2), 223–241. doi:10.1080/13676260600983684.

Schlenker, B. R. (2003). Self-presentation. In M. R. Leary, J. P. Tangney, M. R. Leary, & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 492–518). New York, NY: Guilford Press.

Shain, L., & Farber, B. A. (1989). Female identity development and self-reflection in late adolescence. *Adolescence, 24*(94), 381–392.

Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defense: Self-affirmation theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 38, pp. 183–242). San Diego, CA: Academic Press.

Siibak, A. (2009). Constructing the self through the photo selection - Visual impression management on social networking

websites. *Cyberpsychology: Journal of Psychosocial Research on Cyberspac*e, 3(1), article 1. Retrieved from: http://cyberpsychology.eu/view.php?cisloclanku=2009061501&article=1

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261–302). San Diego, CA: Academic Press.

Stephenson-Abetz, J., & Holman, A. (2012). Home is where the heart is: Facebook and the negotiation of "old" and "new" during the transition to college. *Western Journal of Communication, 76*(2), 175–193. doi:10.1080/10570314.2011.654309.

Swenson, L. M., Nordstrom, A., & Hiester, M. (2008). The role of peer relationships in adjustment to college. *Journal of College Student Development, 49*(6), 551–567. doi:10.1353/csd.0.0038.

Swenson-Goguen, L. M., Hiester, M. A., & Nordstrom, A. H. (2010). -2011). Associations among peer relationships, academic achievement, and persistence in college. *Journal of College Student Retention, 12*(3), 319–337. doi:10.2190/CS.12.3.d.

Toma, C. L. (2013). Feeling better but doing worse: Effects of Facebook self-presentation on implicit self-esteem and cognitive task performance. *Media Psychology, 16*(2), 199–220. doi:10.1080/15213269.2012.762189.

Toma, C., & Hancock, J. T. (2011). A new twist on love's labor: Self-presentation in online dating profiles. In K. B. Wright & L. M. Webb (Eds.), *Computer-mediated communication in personal relationships* (pp. 41–55). New York, NY: Peter Lang Publishing.

Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: distinguishing rumination from reflection. *Journal of Personality and Social Psychology, 76*(2), 284–304.

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior, 9*(5), 584–590. doi:10.1089/cpb.2006.9.584.

Vanhalst, J., Luyckx, K., Scholte, R., Engels, R., & Goossens, L. (2013). Low self-esteem as a risk factor for loneliness in adolescence: Perceived-but not actual-social acceptance as an underlying mechanism. *Journal of Abnormal Child Psychology, 41*, 1067–1081. doi:10.1007/s10802-013-9751-y.

Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*(1), 3–43. doi:10.1177/009365096023001001.

Weber, S., & Mitchell, C. (2008). Imaging, keyboarding, and posting identities: Young people and new media technologies. In D. Buckingham (Ed.), *Youth, identity, and digital media* (pp. 25–47). Cambridge, MA: MIT Press.

Wheeless, L. R. (1976). Self-disclosure and interpersonal solidarity: Measurement, validation, and relationships. *Human Communication Research, 3*(1), 47–61. doi:10.1111/j.1468-2958.1976.tb00503.x.

Wheeless, L. R. (1978). A follow-up study of the relationships among trust, disclosure, and interpersonal solidarity. *Human Communication Research, 4*(2), 143–157. doi:10.1111/j.1468-2958.1978.tb00604.x.

Yang, C.-c. (2015). *It makes me feel good: A longitudinal, mixed-methods study on college freshmen's Facebook self-presentation and self development (Unpublished doctoral dissertation)*. Madison, WI: University of Wisconsin-Madison.

Yang, C.-c., & Brown, B. B. (2014). *Facebook audience feedback and college freshmen's sense of self.* Poster presented at the biennial meeting of Society for Research on Adolescence, Austin, TX.

Young, A. L., & Quan-Haase, A. (2009). Information revelation and Internet privacy concerns on social network sites: A case study of Facebook. *Proceedings of the 2009 International Conference on Communities and Technologies* (pp. 265–274). New York, NY: ACM Press.

Yurchisin, J., Watchravesringkan, K., & McCabe, D. B. (2005). An exploration of identity re-creation in the context of internet dating. *Social Behavior and Personality, 33*(8), 735–750. doi:10.2224/sbp.2005.33.8.735.

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior, 24*(5), 1816–1836. doi:10.1016/j.chb.2008.02.01.

Zwier, S., Araujo, T., Boukes, M., & Willemsen, L. (2011). Boundaries to the articulation of possible selves through social networking sites: The case of Facebook profilers' social connectedness. *Cyberpsychology, Behavior and Social Networking, 14*(10), 571–576. doi:10.1089/cyber.2010.0612.

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