



Student engagement and social media in tertiary education: The perception and experience from the Ghanaian public university



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ABSTRACT

The use of social media across the educational setting is on the rise. Subsequently, the body of research on this topic is vivacious and rising. Recent study has discussed the chances associated with the use of social media instruments in the classroom, but has not examined students' own views on the role of social media in enhancing their educational experience. This study explores students' perception on social media as an effective teaching instrument. The respondents, undergraduates from the University for Development Studies, took a banking and finance course and were asked about their social media usage, their preferences and their perception concerning the use of social media in tertiary/higher education. Other qualitative data on students were collected to explore the motivations for using social media in education and the views of teachers and universities. The results divulge the openness of using social media in education, uncover the interaction and information motivation of its use, and provide theoretical and pedagogical significance. Notably, we offer understandings into how educators can strategically incorporate social media tools into the classroom as well as how the use of social media can potentially affect students' views of the instructor and the university.

1. Introduction

Higher education invigorate individuals to expand their knowledge and skills, express their thoughts clearly in speech, and increase their ability to comprehend and disentangle local and global issues. Institutions of higher education in the 21st century face major social, economic, and technological changes that will dramatically change the educational experience of students. Researchers should continue to monitor new and emerging technologies to learn which tools have potential in the classroom and how receptive students are to using them. By exploring the use of social media in higher education, the study sheds light on one element of a key technological shift in universities. Recent research has discussed opportunities to use Web 2.0 and social media tools in the classroom (Cronin, 2009; Granitz & Koernig, 2011; Huang & Behara, 2007; M. D.; Kaplan, Piskin, & Bol, 2010; Lowe & Laffey, 2011; Rinaldo, Laverie, Tapp, & Humphrey, 2013; Sendall, Ceccucci, & Peslak, 2008), but has not assessed the insights/perception students themselves hold about its usefulness in enhancing their instructive experience (see, however, Aviles & Eastman, 2012, exploration on the use of technology in education).

This study examines several areas of importance to banking and finance in higher education. First, we establish students' experiences with social media instruments and the extent to which students view social media as an effective pedagogical tool. Then, we reveal students' motivations for using social media in education. Finally, we reveal students' views on teachers and universities using social media for education. The study has implications for several motives. Primary, it fits into a classification already established in banking and finance system of education. For example, there is extensive publication of study on topics related to the utilization of technology in the classroom (see Gray, Peltier, & Schibrowsky, 2012, for historical overview of articles in this journal over the past 35 years). That said, the study offers practical insights for educators and universities seeking to use social media. Second, this study contributes to academic research in the field of technology and social media by revealing students' perceptions and motivations for using these tools in higher education. A broad understanding of students' views on the use of social media in education may also be the first step in understanding the relationship between social media use and important educational outcomes such as assessment and student participation. In particular, the study described student perception with a wide variety of

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instruments for social media, not just the most frequently discussed outlets like Facebook, You Tube and Twitter. For example, if the instructor decides to use social bookmarking instruments in the classes, but the student does not know the tools, the teacher needs to set aside additional time and resources to prepare the students. In addition, we also tested students on their attitudes and reasons for using social media tools to assess if there was initial resistance or enthusiasm to the use of social media tools in a classroom. Finally, we reveal students' perception on the use of social media by universities and faculty in the classroom, and propose Suggestions from a branding perspective. Therefore, this study helps to properly frame the use of social media tools in the classroom and provides insight into how students are embracing these efforts in a broader educational context. For example, while past academic work has identified the benefits of using certain social media tools (e.g., blogs to guide students to use their time more efficiently; M. D. Kaplan et al., 2010), Granitz and Koernig (2011, p. 62) "If these concepts apply to the use of social media and cannot be overcome by problematic teachers, then any use of these tools, regardless of the teacher's skills or plans, may be doomed to failure. Finally, the outcome of this investigation contributes to theoretical underpinnings on the broader use of technology and social media in the classroom by highlighting students' voices on an important teaching issue. The acquisition of student perceptions follows the tradition of previous banking and finance education studies as a means of enhancing evaluation (Duke, 2002) and discovering potential associations with student engagement (Junco, Heiberger, & Loken, 2011). In sum, these findings enable educators to identify several important success factors if they choose to use social media tools. Naturally, every instructor has exceptional considerations in curriculum design and needs to evaluate the compatibility and comparative advantage provided by social media tools (Granitz & Koernig, 2011). However, a deeper perception into the understanding, interest or encouragement of students engaged in higher education using social media is an important step towards developing an inclusive and productive educational landscape that is ever changing.

2. Literature review

2.1. Ghana's education system

Ghana's education system is in three phases - basic (kindergarten, primary, junior high – three to 14 years); secondary (senior high, technical, and vocational education – 15 to 17 years); and tertiary (colleges, polytechnics, and universities - 18 to 21-plus years). Tertiary education is generally seen as a formal, non-compulsory education that follows secondary education (Campbell & Rozsnyai, 2002; Oteng-Ababio, 2011). In Ghana, a report of a Presidential Committee which reported on the Review of Education Reforms' defined tertiary education as the education offered after secondary level at a university, polytechnic, specialized institutions, open university and any other institutions to provide training that lead to the award of diploma and degree qualifications. The genesis of tertiary education in Ghana dates back to 1948 when the University of Ghana was founded as the University College of the Gold Coast on the recommendation of the Asquith Commission on Higher Education in the then British colonies. The Commission set up in 1943 to investigate Higher Education recommended the setting up of the University College in association with the University of London. The monopoly of University of Ghana on the country's tertiary education landscape was broken with the establishment of Kwame Nkrumah University of Science and Technology in 1952, University of Cape Coast in 1962 and within the last two decades the University of Education, Winneba (UEW) and the University for Development Studies (UDS) in Tamale both in 1992. In addition, each of the ten regions of Ghana has a Polytechnic, which has been elevated to tertiary status. It is also instructive to add that, since 1998 a number of private universities (28 as at 2010), have also been given government accreditation. Ghana's tertiary institutions enroll over 200,000 students in undergraduate,

graduate, certificate and diploma programs in a full range of academic and professional fields. The National Accreditation Board (www.nab.gov.gh) lists 140 accredited institutions, both public and private, offering four-year degrees as well as two and three-year diplomas, which are not equivalent to Bachelor's degrees, but undergraduate transfer credit can be awarded. Eleven percent of tertiary students are enrolled in private institutions. Ghanaian university admission is highly competitive, especially in fields such as medicine, engineering, law, business and pharmacy. The quality of education is considered reasonably high, evidence that human resources are more significant than material resources. In an effort to attract international enrollment, all Ghanaian universities operate on a modular, semester system. The Universities in Ghana is committed to 20% international population and attracts significant numbers of American students, as well as students from Africa and Europe. The United Nations University operates several programs on campus in fields of health and development.

2.2. Student engagement

The interest in student engagement began more than 70 years ago with Ralph Tyler's research on the relationship between classroom assignments and learning (Axelson & Flick, 2011; Bar, 2009).

Since then, student engagement in research has been passed by Pace (1980) and Astin (1984) on how the quantity and quality of student effort affects learning, and more recent studies on the influence of environmental conditions and individual preferences on student engagement (Bakker, Vergel, & Kuntze, 2015; Gilboy, Heinerichs, & Pazzaglia, 2015; Martin, Goldwasser, & Galentino, 2016). Perhaps the best-known resource for student engagement is the National Survey of Student Engagement (NSSE), a tool designed to assess student participation in various educational activities (Kuh, 2009). NSSE and other similar participation tools have been used in many studies that link student participation to positive student outcomes such as higher grades, retention, persistence, and completion (Leach, 2016; Trowler & Trowler, 2010) to further convince universities that student engagement is an essential factor in the teaching process. However, despite the increased interest in student participation, its meaning is often not well understood or agreed upon. Student engagement is a comprehensive and multifaceted phenomenon with many meanings based on psychological, social and/or cultural viewpoints (Zepke & Leach, 2010; Manu & Huaisheng, 2017). Reviewing the definitions, it can be found that there are two definitions of student engagement. One set of definitions takes student engagement as an expected outcome that reflects students' thoughts, feelings, and learning behavior. For example, Kahu (2013) defines student engagement as an "individual state of mind" that includes students' emotions, cognition, and behavior (p. 764). Other meanings focus primarily on student behavior, which indicates that engagement is "the degree to which students engage in higher education activities that research indicates are associated with high quality learning outcomes" (Krause & Coates, 2008, p. 493) or "quality effort and participation in prolific learning activities" (column item, 2009, p. 6). Another set of definitions considers student engagement as a process in which both students and the university participate. For example, Trowler (2010) defines student engagement as "the interaction of time, energy, and other relevant resources invested by students and the school in order to optimize student experience, improve student learning outcomes and development, and improve school performance and reputation" (p. 2). Similarly, the NSSE website shows that students participate in "the time and energy invested by students in research and other educational purposeful activities" and "how institutions deploy resources and organize courses and other learning opportunities to engage students in activities that decades of research have shown are associated with student learning" (center for educational research, 2017, para. 1).

Many existing models of student participation reflect the latter set of definitions, describing engagement as a complex psychosocial procedure that involves both student and university characteristics. The model

organization to participate in the process is divided into three areas: the factors affecting students (Institutional culture, curriculum and teaching practice), student's engagement indicators (such as interest in learning, teachers and peer interaction, and meaningful information processing), and the results of the student contact (for example, academic achievement, retention, and personal growth), (Kahu, 2013; Nora, Barlow, & Crisp, 2005). In addition, Fredricks, Blumenfeld, & Paris (2004) organized and presented research findings on the types of student engagement, suggesting that there are three types of engagement (behavioral, emotional, and cognitive). Using typology as a guide, we examined recent student engagement studies, models, and measures to better understand how student behavioral, affective, and cognitive engagement are conceptualized and to identify specific indicators that correspond with each type of engagement, as shown in Fig. 1.

Behavioral engagement refers to the degree to which students actively participate in learning activities (Fredricks et al., 2004; Kahu, 2013; Zepke, 2016). Indicators of behavioral participation include time and effort involved in learning activities (Fredricks et al., 2004; Kahu, 2013; Bar, 2009; Lester, 2013; Trowler, 2010) interaction with peers, teachers and staff (Kahu, 2013; Kuh, 2009; Zepke & Leach, 2010). Indicators of behavioral engagement, which reflect observable student behavior, are most consistent with Pace (1980) and Astin (1984) 's original concept of student engagement as quantity and quality of learning effort. Emotional involvement is the emotional response of students to learning (Fredricks, 2011; Lester, 2013; Trowler, 2010). Indicators of emotional engagement include attitudes to learning, interests, and values (Fredricks, 2011; Kahu, 2013; Lester, 2013; Trowler, 2010; Witkowski & Cornell, 2015) and a sense of belonging to the learning community (Fredricks et al., 2004; Kahu, 2013; Lester, 2013; Trowler, 2010). Emotional engagement is often assessed using self-reporting methods (Fredricks et al., 2004) and provides insight into a particular topic, method of teaching, or teacher's feelings. Finally, cognitive engagement is the degree to which students are engaged in learning and the degree to which students spend mental effort to understand and master content (Fredricks, 2011; Lester, 2013).

Indicators of cognitive engagement include: learning motivation (Neier & Zaye (2015), Lester, 2013; Richardson & Newby, 2006; Zepke & Leach, 2010, Manu et al., 2019); Determination to overcome academic challenges and meet/exceed requirements (Fredricks, 2011; Bar, 2009; Trowler, 2010); In-depth processing of information (Fredricks, 2011; Kahu, 2013; Richardson and newby, 2006) through critical thinking (Self-regulation (such as setting goals, planning, organizing learning

efforts, and supervising learning; Fredricks, 2011; Lester, 2013), and the active construction of knowledge (Bar, 2009; Huaisheng, Manu, Mensah, Mingyue, & Oduro, 2019). Although cognitive engagement involves motivational aspects, much of the literature focuses on how students use active learning and some form of high-level thinking to achieve mastery of content.

2.3. Social media

Social media is a term used to describe the collection of software and platforms within the Web 2.0 domain. O'Reilly Media launched Web 2.0, the second generation of web-based services to enhance collaborative work online and facilitate information distribution among users. As a technical framework, Web 2.0 spans all connected devices, including applications and update services (Zheng, Cao, Zheng, Xie, & Yang, 2010). Social media is a special innovation in Web 2.0 technology that supports social and online networking through the use of audio, video, text and images (Zanamwe, Rupere, & Kufandirimbwa, 2013).

A French consultant Fred Cavazza breaks down the various forms of social media into ten groups in his "social media landscape": publishing tools, sharing tools, discussion tools, social networks, micro-publishing tools, social aggregation tools, life, virtual worlds, social games and massively multiplayer online games (MMO) (Cavazza, 2008). Brian Solis, co-founder of the social media club and a leader in social media thinking, recently launched the Conversation Prism, which he describes as "the art of listening, learning and sharing" (Solis, 2008a, 2008b, 2008c). The following Fig. 2 shows the wide use of social media tools today (see Figs 3-5).

Despite the different concepts of social media, (Davis, Summers, & Miller (2012)) define social media as web-based and mobile applications that allow individuals and institutions to communicate in a digital environment in a variety of ways to create, participate in, and share user-generated new or existing content. This definition implies the flexibility of a specific set of Web 2.0 technologies that can scale across mobile and ubiquitous technologies, extending connections not only between devices but also between users. Changing student demographics have led many educators to seek new teaching methods and techniques (Evans, 2014). A rising figure of institutions have realized that in order to address the increase in student diversity (different backgrounds, abilities, cultures, educational goals and learning preferences), it is necessary to utilize technologies familiar to students to promote effective teaching and support students to achieve their goals (Selwyn, 2012). Fortunately,

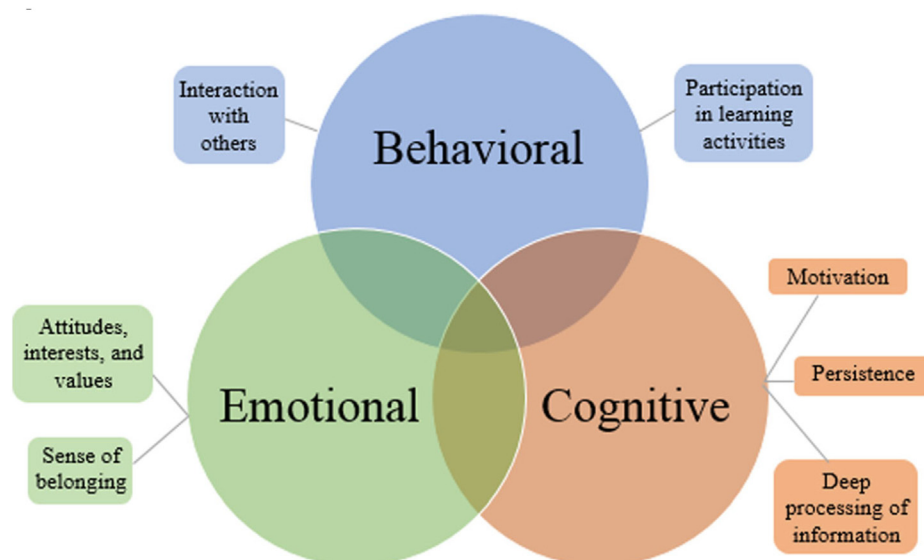


Fig. 1. Conceptual framework of types and indicators of student engagement.



Fig. 2. The wide use of social media tools.

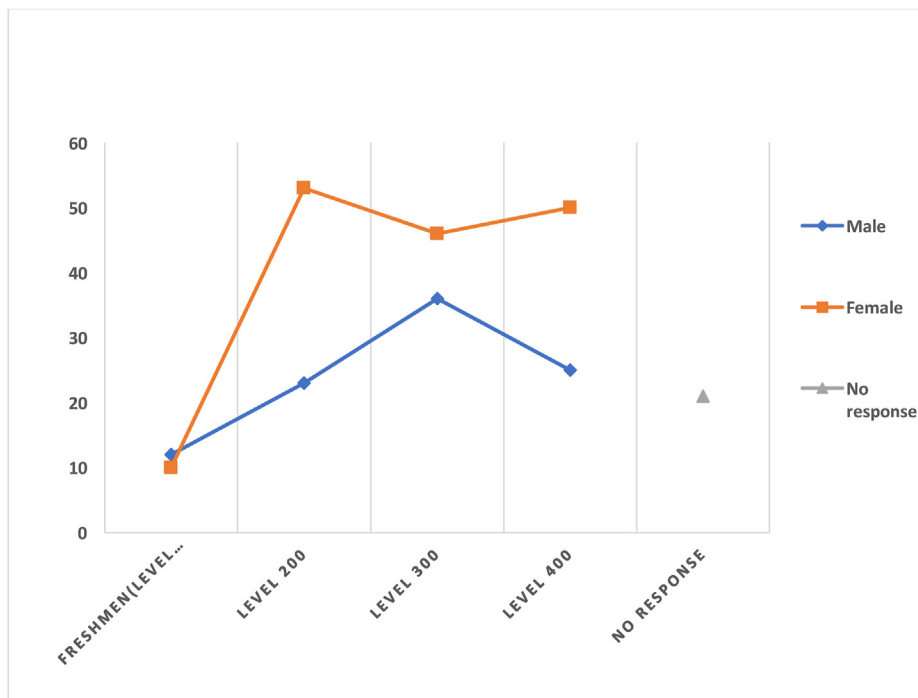


Fig. 3. Respondents and Gender cross tabulation.

the current generation of higher education students is well versed in social media and other communication technologies (Ajjan & Hartshorne, 2008), providing opportunities to use these technologies for teaching. Social media allows students and teachers to communicate with each other in different ways, participate in knowledge sharing activities and form learning communities (Dron & Anderson, 2014). In addition, some researchers have expanded the discussion to include the use of “social software tools,” or “a range of software tools that allow users to

interact with and share data with other users, primarily through the Web” (Minocha, 2009, p. 353). The researchers point to tools such as blogs, social networks, social bookmarking sites and virtual worlds. Whether these tools are labeled as social media or defined as social software tools, mass media and academic research have identified millennials as “digital natives” (Tapscott, 2009), and social media therefore plays a key role in student life (Greenhow & Burton, 2011). However, the author also discusses the impact of social media and the Internet on

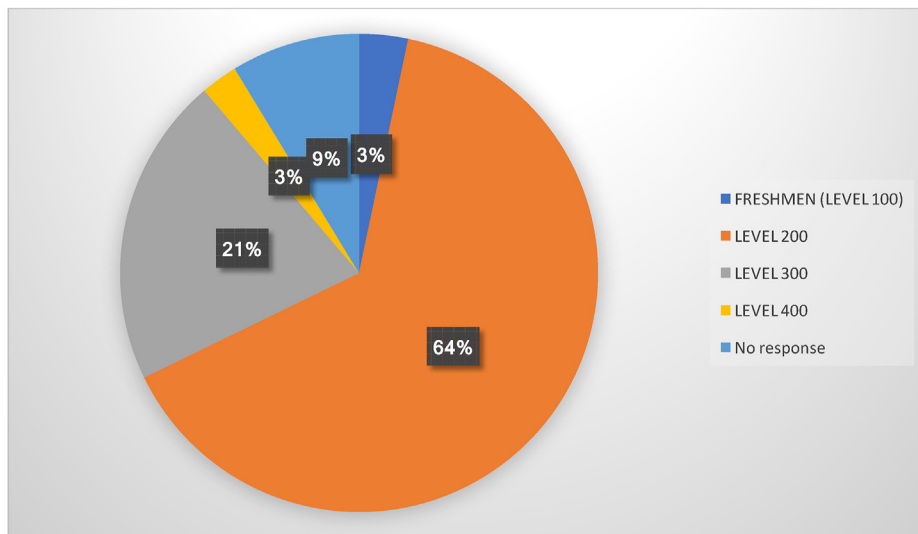


Fig. 4. A pie chart depicting the percentage of Respondents levels.

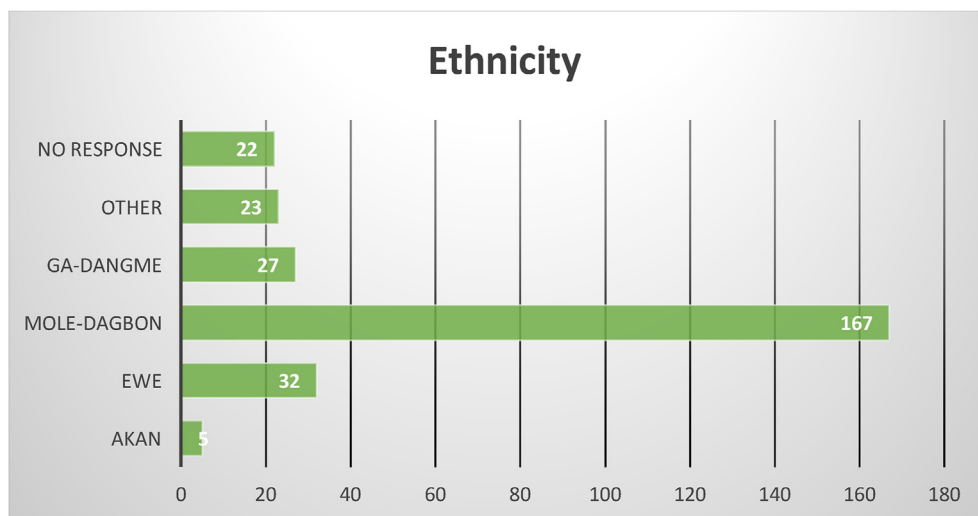


Fig. 5. Respondents and Ethnicity cross-tabulation.

students’ health, some of which detail the negative impact on society as a whole (Putnam, 2000). With respect to students in particular, Eszter Hargittai and colleagues’ research (e.g., Hargittai & Hsieh, 2010; Hargittai & Litt, 2011) questioned the breadth and depth of social media knowledge of college students, the homogeneity of social media use in different student groups and their familiarity with various social media tools. In addition, Greenhow and Burton (2011) documented a positive correlation between the use of social networks by low-income students and some forms of social capital – a factor associated with educational achievement and achievement in the past literature. Hung and Yuen (2010) conducted a survey on Chinese students in particular and found that when social networks were used as an educational tool, they felt a sense of belonging and affection.

In sum, the research is mixed on the role of social media in people’s lives, the extent to which social media tools produce positive results, and the consistent approach across different student groups. In addition, although some scholars advocate the use of social media in education (a deal with the heckler trick, Margaryan, Little John, and Nicole, 2008) or define best practices (Dunlap and Lowenthal, 2009), has warned that the risk (Franklin & van Harmelen, 2007) such as privacy, copyright, data ownership and literacy problems, points out that the lack of “writing” educators (Trinder, Guiler, Margaryan, Littlejohn, & Nicol, 2008, pp.

1–71). Some studies have looked at the extent to which students use certain social media tools. For example, Poelhuber and Anderson (2011) studied the use of social media and other collaborative tools in the context of distance education and found that men and younger students had more positive attitudes toward technology and more experience with social media. Zula and Yarrish Pawelzik (2011) explored the use of social networking tools in business education, finding that younger students (18–20 years old) spent less time exploring their careers than older students (21 years old), but found no significant difference in the amount of time spent on social networking. Other researchers have documented successes and/or challenges in using specific social media tools in the classroom (e.g., M. D. Kaplan et al., 2010; Junco et al., 2011; Payne, Campbell, Bal, & Piercy, 2011; Rinaldo, Tapp, & Laverie, 2011; Taylor, Mulligan, & Ishida, 2012; Zahay, Eddy, & Kaufman, 2013). For example, M.D. Kaplan et al. (2010) demonstrate through qualitative and quantitative measures that a blog project may lead to a series of positive outcomes for students in the classroom, including promoting the application of effective banking and finance theory to practice, improving an interdisciplinary focus, and increasing familiarity with technology. Payne et al. (2011) also adopted a project-based approach in which students made spoof videos for a semester-long viral banking and finance project. The authors conclude that the inclusion of YouTube projects enhances

knowledge of motivation, engagement, team management and communication, and viral banking and finance. [Rinaldo et al. \(2011\)](#) explored the use of the microblogging tool Twitter in business classrooms and advocated its benefits for students to participate in experiential learning. The authors found that in cases where students interact with professors on Twitter, the tool helps achieve educational goals and brings particular benefits. Similarly, [Junco et al. \(2011\)](#) conducted a semester-long experimental project on the use of Twitter by preservice health students in the classroom. The authors found that students not only showed significant improvements in engagement, but also had higher semester grade point averages. On the other hand, [Taylor et al. \(2012\)](#) found that Facebook may not be an ideal classroom tool because students want to differentiate between professional and personal identities, fear negative consequences, and feel a lack of demand; However, the authors do advocate using other social networks.

While recent studies have explored the use of social media tools in the classroom and documented its successes and failures, few studies have assessed students' perceptions of social media as a teaching tool to enhance the educational experience. Students make judgments about the quality of their education ([Duke, 2002](#)), hence suggesting students' perceptions are a legitimate area of investigation when teachers adjust their teaching methods to use updated online tools. It is against this backdrop that our research focuses on three main research questions:(a) what are students' experiences with the use of social media? (b) what are their perception on the usage of social media in education? (c) What are students' motives towards its use in higher education?

3. Methodology

3.1. Research population and sample

This study uses both quantitative and qualitative approaches to fully understand how students view/perceive the application of social media in higher education. Two rounds of survey data collection as well as 14 in-depth interviews were piloted.

3.2. Survey

3.2.1. Sample and measures

Students at a public university taking an introductory banking and finance course were asked about their usage of social media and how they felt about the use of social media tools in education. The first round of data collection included 143 surveys completed during October 2018. The second survey was conducted in October 2019, and 133 questionnaires were collected (see [Tables 1–4](#) for sample demographic data.). Our descriptive survey included variables such as gender, major, college years, and ethnicity, as well as exploring the frequency and scope of social media and technology usage, and the use of social media in

Table 1
Categories of major.

	Number(N)	Percent (%)	Percent of cases
Operations Research	4	1.2	1.6
Public Management	4	1.2	1.6
Communications Skills	10	3.0	4.0
Human resource management	15	4.4	6.0
Banking and Finance	19	5.6	7.7
Business management	26	7.7	10.5
Accounting	27	8.0	10.9
Marketing	35	10.4	14.1
Information studies	45	13.3	18.1
Advertising/Public relation	47	13.9	19.1
Management	49	14.5	19.8
Other	57	16.9	23.0
Total Responses	338	100	136.3

Note: Respondents were asked to check all that apply to report double and triple majors; Undecided was not a category.

education. In particular, the survey incorporated questions regarding many of the tools detailed by [Granitz and Koernig \(2011\)](#) in their discussion of the use of Web 2.0 activities in banking and finance education (such as bookmarks, RSS feeds, blogs, video sharing software, etc.). These tools have also appeared in past educational studies (see [Saeed, Yang, & Sinnappan 's, 2009](#), study on learning styles and technology preferences). In our October 2019 data collection, we also included a measure of motivation to use social media in education. We refer to [Kilian, Hennings, & Langner \(2012\)](#) research on millennial media use motivation. We also referred to [Hargittai and Hsieh \(2012\)](#) to measure familiarity with social media tools. Before the final administration, in each introductory class section, these surveys conducted preliminary tests on students.

3.2.2. Analysis of surveys

SPSS 22.0 was used to tabulate frequencies and descriptive statistics. When respondents in 2018 and 2019 were asked the same question, the data were combined. Chi-square test of independence is also reported to address students' experiences with social media tools and their views of social media as an effective pedagogical tool.

3.3. Interviews

The author also use a qualitative method to get a deeper understanding of students' perspectives and motivations for using social media in education through in-depth interviews. According to the interview program proposed by [McCracken \(1988\)](#), researchers asked 14 undergraduate students the "grand" question about the use of social media in tertiary education. All the students were enrolled in an advanced undergraduate banking and finance course in a public university and represented a mix of males and females. Students were asked about their use of specific tools, their openness to using social media in education, their motivations for using social media, and the perceptions of teachers and universities who use social media in educational Settings. The interview lasted about an hour and produced more than 99 pages of text. The authors independently coded the data for topics, and in reviewing the literature, they both focused on prominent topics, including past research on media use motivations ([Kilian et al., 2012](#)) and brand personality ([Aaker, 1997](#)). We supplemented our analysis with the text analysis software Dedoose. Our findings are as follows.

With the initial stage, the openness and experience of students was discussed with regards to social media in education. Afterwards, we focused on the impetus behind the use of social media in education. More precisely, to provide deepness in this area, we supplement our quantitative data with qualitative interview data and present a nuanced conversation of students' accounts regarding their motivations for social media use in education. Lastly, we uncover students' opinions on how social media use affects perceptions of instructors and universities.

3.4. Findings

3.4.1. The experience of students with social media instruments

3.4.1.1. Its usage and understanding. The experience of Students' with social media was investigated by enquiring from respondents how

Table 2
Gender and Cross tabulation.

Respondent	Gender		Total
	Male	Female No response	
Freshmen (Level 100)	12	10	22
Level 200	23	53	76
Level 300	36	46	82
Level 400	25	50	75
No response		21	
Total	96	159 21	276

Table 3

Level of students.

	Frequency	Percent (%)
Freshmen (Level 100)	10	3.3
Level 200	177	64.5
Level 300	57	21.0
Level 400	8	2.5
Sub total	252	91.3
No response	24	8.7
Total	276	100

Note. The introductory banking and finance course sampled is typically completed during students' in Level 200 and Level 300.

Table 4

Ethnicity.

	Frequency	Percent (%)
Akan	5	1.4
Ewe	32	11.2
Mole- Dagbon	167	61.2
Ga-Dangme	27	10.1
Other	23	8.0
Sub total	254	92.0
No response	22	8.0
Total	276	100

familiar they are with social networks, pinning sites, blogging, micro-blogging, video content and sharing. A 5 point Likert scale was adopted in measuring social media instrument, with 1 representing no understanding (1 = no understanding) and 5 as complete understanding (5 = complete understanding). As anticipated, respondents were most conversant with social networking sites ($x = 4.33$, $SD = 0.704$) and video content sharing sites ($x = 4.08$, $SD = 0.904$). Respondents had "some knowledge" of blogging sites ($x = 3.70$, $SD = 1.019$) and pinning sites ($x = 3.05$, $SD = 1.325$). Students had the least understanding of micro-blogging ($x = 1.95$, $SD = 0.704$). Students lack of understanding of the categories of blogging ($x = 3.70$, $SD = 1.019$), pinning ($x = 3.05$, $SD = 1.325$) and microblogging ($x = 1.95$, $SD = 1.106$) suggests that the student experience is more limited than what the general concept of "digital natives" might suggest. Intriguingly, microblogging, as an instrument of social media, predates the development of sites such as "pinning", but students' understanding of microblogging, is lower than that of pinning sites, although microblogging has been in the market for a long time. One potential explanation is that students are not necessarily aware of the word microblogging; they equate it with the most renowned Twitter site.

The results also suggest that while students may not consistently show a complete understanding of social media tools, the data suggest they are willing to use all types of social media. As for familiarity with social networks, nearly 86% ($n = 116$) of the students said they had a good or full understanding of the tool. In addition, the weekly and daily usage of their social networks remained at (94%, $n = 261$) and (89%, $n = 244$), respectively. In terms of video sharing, nearly 80% of respondents ($n = 105$) said they had a valuable or adequate understanding. Only 43% of respondents ($n = 158$) use video content and sharing weekly, while 16% ($n = 92$) use it daily. With regard to blogging, nearly 58% of respondents ($n = 75$) said they understood it well or fully. While 27% ($n = 75$) use blogs weekly and 15% ($n = 41$) use blogs daily. 39% ($n = 49$) of the respondents had a good or adequate understanding of pinning. 28% ($n = 75$) of the participants used pinning sites weekly, and 7% ($n = 42$) used pinning sites daily. The lack of familiarity with Microblogging indicates that only 13% ($n = 16$) of the respondents have a good or sufficient understanding of the tool. The weekly usage of microblogging (11%, $n = 30$) and daily usage (5%, $n = 23$) also declined. In sum, students have the utmost understanding of social networking and video content and sharing and report the most usage. See Tables 6–8 for details.

3.5. Effectiveness of social media as a pedagogical instrument

Using a 5-point likert scale, where 1 = strongly disagree and 5 = strongly agree, students were asked to rate their acceptance of the openness/honesty of using social media tools in the classroom to improve the learning experience. Respondents were also asked to rate teachers' preference for using social media tools in teaching. On the item measuring the openness of social media tools, the average score was 3.86 ($SD = 1.132$). The average agreement for their instructors' preference for using social media was only slightly lower ($x = 3.42$, $SD = 1.063$). The transparency of the use of social media is strongly agreed by 32% of students ($n = 89$), while 20% ($n = 52$) agree strongly that teachers tend to use social media. Only 6% of respondents strongly opposed both ($n = 8$). Taken as a whole, it is evident that despite the perception of Millennials as "digital natives," some students remain cautious about the use of social media for educational purposes.

In order to promote learning, Students were also requested to assess the specific potential instrument of social media. A 5-point Likert scale was adopted for the study where 5 = strong potential and 1 = no potential (see Table 9). in which professional social networking sites had the strongest potential ($x = 4.23$, $SD = 0.912$), and for video content and sharing sites ($x = 4.09$, $SD = 0.843$).

Respondents indicated weak potential for geo-location services ($x = 2.98$, $SD = 1.000$), pinning sites ($x = 2.79$, $SD = 1.180$), virtual worlds ($x = 2.27$, $SD = 1.251$) and social games ($x = 2.18$, $SD = 1.176$). We find higher means for question and answer sites ($x = 3.85$, $SD = 1.074$), blogs ($x = 3.72$, $SD = 0.963$), social networks ($x = 3.42$, $SD = 1.115$), microblogging ($x = 3.32$, $SD = 0.916$), RSS feeds ($x = 3.30$, $SD = 0.901$), social bookmarking ($x = 3.20$, $SD = 0.904$), and photo sharing sites ($x = 3.19$, $SD = 1.146$). The high average of professional social networks indicates that students believe that learning also includes the development of their professional selves. Relatively low means for gaming, virtual worlds, and pinning suggests that students do not link these tools to educational outcomes.

In the next section of the survey, items related to social media instruments for a particular brand (for example, Twitter rather than microblogging) were embedded to see to what extent students agreed that these instruments could improve learning, as well as the specific advantages of each. On a 5-point Likert scale, where 1 = strongly disagree and 5 = strongly agree, respondents reported how much they agreed.

3.6. Facebook (social networking site)

While it is not surprising that most students are familiar with Facebook (x unfamiliar = 1.26, $SD = 0.734$), students are cautious about its potential to promote learning. They recognized the value of using Facebook for class announcements ($x = 4.08$, $SD = 0.801$) and for group projects ($x = 3.65$, $SD = 1.077$). However, students' perception of Facebook to facilitate learning was more associated with exposure to other people's ideas and perspectives ($x = 4.25$, $SD = 0.875$) and the

Table 6

Students familiarity with Social Media Instruments.

Instruments	<i>n</i>	<i>x SD</i>
Social networking	132	4.33 0.704
video content and sharing shite	133	4.08 0.901
Blogging	134	3.70 1.019
Pinning sites	133	3.05 1.325
Microblogging	134	1.95 1.106

Note. Based on Hargittai and Hsieh (2012) 5-point scale where 1 = no understanding, 2 = little understanding, 3 = some understanding, 4 = good understanding, and 5 = full understanding. Statistics representing the second round of data collection completed in 2019.

Table 7
Weekly usage of social media instruments.

Instruments	Number(N)	Percent (%)	Percent of cases
Virtual worlds	9	0.9	3.3
Social bookmarking	22	2.3	8.2
RSS feeds	26	2.7	9.7
Microblogging	30	3.1	11.2
Geo-location services	38	3.9	14.1
Social gaming	38	3.9	14.1
Question and answer sites	44	4.6	16.4
Pinning sites	75	7.8	27.9
Blogs	75	87.8	27.9
Professional focused social network	80	8.3	29.7
Photo sharing sites	107	11.1	39.8
Video content and sharing	158	16.4	58.7
Social networking	261	27.1	97.0
Total response	963	100	358.0

Note. Data representing surveys finished in October 2018 and October 2019.

Table 8
Daily Usage of Social Media instruments.

Instruments	Number(N)	Percent (%)	Percent of cases
Virtual worlds	4	0.7	1.6
Social bookmarking	7	1.2	2.7
RSS feeds	13	2.2	95.0
Geo-location services	13	2.2	5.0
Question and answer sites	13	2.2	5.0
Social gaming	19	3.2	7.4
Microblogging	23	3.9	8.9
Professional focused social network	29	4.9	11.2
Blogs	41	6.9	15.9
Pinning sites	42	7.1	16.3
Photo sharing sites	53	8.9	20.5
Video content and sharing	92	15.5	35.7
Social networking	244	41.1	94.6
Total response	593	100	229.8

Data representing surveys finished in October 2018 and October 2019.

Table 9
Potential enhancement of social media in learning.

Instruments	Number(N)	X	SD
Professional focused social network	129	4.23	0.91
Video content and sharing	126	4.09	0.84
Question and answer sites	127	3.85	1.07
Blogs	127	3.72	0.96
Social networking	129	3.41	1.12
Microblogging	127	3.32	0.92
RSS feeds	124	3.30	0.90
Social bookmarking	126	3.20	0.90
Photo sharing sites	127	3.19	1.15
Geo-location services	124	2.98	1.00
Pinning sites	128	2.79	1.18
Other	94	2.72	1.16
Virtual worlds	126	2.27	1.26
Social gaming	125	2.18	1.18

Note. Based on a 5-point scale where 1 = no potential, 2 = weak potential, 3 = neutral, 4 = some potential, and 5 = strong potential.

promotion of students' expression of their own ideas ($x = 4.03$, $SD = 1.039$). In other words, Facebook provides a medium through which students are exposed to ideas and perspectives outside the traditional classroom environment. What we don't know is if those "others" are other classmates in the course in which Facebook is used. In addition, Facebook is not an educational tool for establishing connections with teachers ($x = 2.57$, $SD = 1.084$), professionals ($x = 2.65$, $SD = 1.168$), companies ($x = 2.97$, $SD = 1.248$), or brands ($x = 3.73$, $SD = 1.092$). This is consistent with the previous research results by Taylor et al. (2012),

which found that students are hesitant to use Facebook for educational purposes, partly because they want to separate their professional life from their personal life.

3.7. Twitter (microblogging instrument)

Like Facebook, respondents said Twitter helps express themselves and thoughts ($x = 4.00$, $SD = 1.068$). Respondents also said they agreed with Twitter's ability to share the thoughts and opinions of others ($x = 3.94$, $SD = 1.111$). However, in the eyes of students, Twitter is not an educational platform for obtaining classroom materials ($x = 2.58$, $SD = 1.085$), establishing connections with teachers ($x = 2.67$, $SD = 1.084$), or building classroom communities ($x = 2.62$, $SD = 0.938$). Thus, Twitter's potential as a pedagogical tool may be most effective in courses that allow students to engage in personal reflection or integrate the ideas and perspectives of others, formally or informally. When Twitter is used as a course management tool or as an educational relationship with instructors, it can be ineffective – at least in terms of students' responses to survey data collected.

3.7.1. Blogging

Since there is no clear brand leader in the blogging field, we classify blogs as expressions of ideas and self ($x = 4.14$, $SD = 0.874$) and provide a potential discussion platform ($x = 3.90$, $SD = 0.924$). Students also reported that blogging helped them get feedback from classmates ($x = 3.46$, $SD = 0.866$) and their mentors ($x = 3.37$, $SD = 0.854$). Respondents also reported the potential for blogging to develop writing skills ($x = 3.60$, $SD = 0.950$). Furthermore, there was an important agreement concerning teachers providing feedback on the development of blogging and writing skills ($\chi^2 = 104.595$, $p < .001$). There was also a significant correlation between students providing feedback and the development of writing skills ($\chi^2 = 71.052$, $p < .001$). Hence, Previous studies have not only revealed positive results in classroom use of blogs (M.D. Kaplan et al., 2010), but also quantitative evidence suggests that blogs can be viewed as providing students with key benefits, through improving their writing skills. In addition, in some cases, teachers may encourage peer feedback to validate writing, rather than just using instructor feedback.

3.8. Pinterest (visually-based social bookmarking site)

Respondents reported that Pinterest helps in the discovery of modern content ($x = 3.91$, $SD = 0.910$) and promotes self-expression ($x = 3.92$, $SD = 0.956$). In fact, respondents saw the discovery as an advantage over other social media instruments in the survey (e.g., using Facebook to access articles mentioned in post, $x = 3.41$, $SD = 1.161$; LinkedIn content, $x = 3.00$, $SD = 1.100$; Tweets, $x = 3.23$, $SD = 1.197$). As already discussed, Pinterest may have a likelihood as an educational instrument in a right context, although students do not see much potential for the site for promoting learning.

In fact, existing study explore how Pinterest can be applied to banking and finance course, including the organization of visual content and creative collaboration (Drenten, 2013). Pinterest can be an important tool in the classroom if used as a means of experimentation and matched with educational goals.

3.9. YouTube (site for sharing video)

With the precise social media brands surveyed, respondents said YouTube was most likely to improve classroom learning. Students agreed that YouTube facilitated sharing of content with peers ($x = 4.45$, $SD = 0.666$), aided discussion ($x = 4.06$, $SD = 0.965$), and enabled discovery of new content ($x = 4.43$, $SD = 0.723$). Given its capabilities, YouTube may be prioritized as a social media instrument that students are familiar with and as an instrument that they think might be useful in class (more useful than blogs, Facebook, Twitter, and Pinterest).

3.10. Possible reasons for the usage of social media in education

Kilian et al., (2012) introduce a media usage typology of the media amid Millennials (based in part on the work of McQuail, 1983) that points out four main motivations namely: information, integration and social interaction, personal identity, and entertainment. We included measures of these motivations in our research to explore what inspires students to use social media in an educational setting. Respondents were asked to rate how social media promotes learning -by keeping them informed, entertaining, interactive, or reinforcing their personal identity. Moreover, since career development became a vital topic in the first round of data collection, we also asked respondents to demonstrate the educational potential of social media to help their career. Each item was measured on a likert scale of 5, with 1 = not descriptive at all and 5 = extremely descriptive. Generally, respondents did not account high means concerning the motivational drivers of using social media to augment learning.

The highest level of motivation was attributed to interaction, that is, respondents felt that learning through social media enabled them to enhance interaction ($x = 3.52$, $SD = 1.192$), followed by being entertained ($x = 3.30$, $SD = 1.219$), keeping informed ($x = 3.24$, $SD = 1.318$), for career development ($x = 3.11$, $SD = 1.324$), and enhancement of identity ($x = 2.71$, $SD = 1.296$). Our qualitative data confirm the importance of social interaction in motivating students to use social media in an educational environment. Social interaction by (Kilian et al., 2012) is the most prominent topic in student descriptions in the data encoding of motivation such as integration and social interaction, entertainment, information, identity and career development. Kilian et al. (2012) describes motivation for integration and social interaction as insight into another's environment, sense of belonging, friendship, conversation and connection. In addition, we observe from the data that students are driven by informational motivation, and in a way that is often intertwined with interactive motivation. Kilian et al. (2012) summarize information motivation as seeking advice, curiosity, and discovery of the surrounding environment, society, and world Kilian et al. (2012) detailed description of identity enhancement and entertainment as well as career development motives does not feature prominently in student narratives. The selected students did mention some elements, such as fun, for example; however, they did not become the main motivation.

The most salient theme for students' motivation to engage in social media use for education is social interaction and feelings of integration. For example, Melina, a female level 400 student, discusses the connection she feels with others, "...these different social media platforms in the classroom [are] a way to keep students engaged I think it's a way to connect with people and teach each other..." Likewise, Yvette and Patricia, both level 300 female student reveals how social media provides an outlet for mediated communication with teachers,

...more kids today are going to be able to express their opinions and views through social media easier I know some kids that are going to be shy in class but they can use these social media outlets to tell the teacher what they are thinking and what their thoughts are..

Respondents clearly expressed their views in interviews that social media is a way of uniting with classmates, teachers, and others in their social circles (sometimes spreading conversation outside the classroom).

Students also express an information motive for using social media in education. For example, Francis, a male undergraduate in the upper west region of Ghana, sees the role of social media in education as "staying current, what people talk about, how they understand things, how different companies or groups influence different things." Similarly, Felicia a female undergraduate, explained, "this knowledge that we pick up in the classroom is not just limited to its ubiquity, it is outside of everyday life and can be immediately incorporated into the course discussion.

I think it's amazing. "She further illustrates how students often relate information to social interactions and going on to discuss," ... Just interact with your classmates and participate in class discussions. In fact, students often discuss how social interaction motive and information motive complement each other. Samuel, a level 300 male student, advocates the use of social media in education because it allows "the use of information to give us a more holistic view of the problem," so that "students can help each other and expose each other to different types of thinking." So, while Samuel is driven largely by an information motive, it is clear that part of his experience with social media in education is the interaction with his classmates and gaining exposure to unique perspectives.

3.11. Universities and teachers perception on the usage of social media

In order to further expand the research significance for instructors and universities, an exploratory study was also conducted on the perception of teachers and universities on the use of social media in education.

Students articulated during in-depth interviews that Teachers who use social media in class are seen as innovative and sometimes more sensitive to students' needs, for example, Bernice and Sophia, who were Level 100 course representatives for their class, shared the same idea and explains,

.... for professors to use it in class, especially as important of a job that professors have, for them to use it in the classroom setting, I admire it and at the same time, I think it is very forward thinking like we're not still doing pen and paper anymore ...

Isaac and Daniel, both level 400 male students agree that educators who use social media are in tune with the current situation. He describes them as, ". . . just someone who knows what's popular or in fashion today... being able to keep up with those current trends. I would describe them as a current professor who knows what the needs of current students are." Similarly, Eugenia, a level 200 female student, explains that using social media allows teachers to extract information from the "real world" and enhance classroom relevance. She explained,

I guess I could see more of their connections caused by great professors, I just died in academia and some of the ideas they discussed are not relevant, but when you use social media, you can bring articles from the real world ... It's more interesting, it makes me want to learn the subject more, at least for me.

While students generally expressed positive views on the use of social media by educators, some said it should be "informative" and "productive." In addition, some people set boundaries in their use of social media, such as privacy or supplementary classroom content, rather than as the primary tool for receiving classroom materials." Intriguingly, while our quantitative data revealed more caution about the use of social media by an instructor, students' narratives point to a more favorable perspective.

Students also were asked about their views of the university as a whole meant by using social media in education. We referred in particular to the brand personality literature (Aaker, 1997) which reveals and understands students' stories of how they see universities using social media for educational purposes.

The students' comments highlighted the brand's personality traits, such as "trendy," "up to date," and "modern" - all examples of the exciting brand personalities detailed by Aaker (1997). For example, Mary, a level 300 female student, explained,

I think (the university) is modern and interesting. I mean, there are a lot of universities that haven't kept up with the technology and haven't utilized the resources that they have ... This will really help broaden students' horizons and further their knowledge within education ...

In a Similar vein, Michael, a male student in level 400, used social media to discuss his views on University,

I would say trendy ... What I want to say is transformative because it has taken the educational process and changed it to meet student standards from today's younger generation ... so I think it just changes the way they learn.

Collins, a level 300 male student, expressed his excitement about the usage of social media by a university.

I would view them as way more modern and like really keeping with the times even being ahead of the curve. Because I don't think I see many of these applications in other universities I would be like "oh that's super cool."

In conclusion, students' perception of teachers and universities' use of social media in education are mostly positive, perceiving them as the up-to-date lecturers, and seeing universities as radiating exciting brand personalities.

4. Discussion

Our quantitative analysis shows that our sample of students sees some potential in using social media as a learning instrument. However, students are cautious as to which instruments hold the most potential and for what purpose the instrument can be used. In general, respondents indicated that they would be motivated to use social media in the classroom because it aligns with their desire to be interactive (Kilian et al., 2012). By investigating different approaches to the use of social media instruments such as blogs and specific platforms such as Facebook, Twitter, Pinterest and YouTube, we found that interactive topics resurged, but specifically related to finding conversations.

For example, the highest form of blogging and using Facebook and Twitter has to do with expressing ideas. In addition, Blogs and YouTube have the highest methods for starting and generating discussion, respectively. Overall, it's clear that students find social media most valuable in the classroom as a conversation facilitator—they can learn from it and participate in the conversation. Kilian et al. (2012) qualitative data approach clarifies that students value a sense of relationship with classmates and educators, again demonstrating social integration and interaction motivation. Furthermore, this motivation is often intertwined with connections based on Shared information, exemplifying information motivation (Kilian et al., 2012). When used to enhance classroom teaching, pedagogy, which is rich in discussion opportunities, allows students to actively participate in their own learning process (Griffin & Cashin, 1989) and has the potential to stimulate higher-level thinking ability (Kratzwohl, 2002). In addition, recent studies have shown that technology-mediated discussions are more popular and preferred than face-to-face discussions in traditional classroom Settings (Owens & Price, 2010).

Furthermore, the data suggest that certain instruments, notably YouTube, are perceived to enhance the value of classroom learning by sharing and discovering new content. Educators can integrate YouTube into their curriculum to spark conversations and debates about classroom topics. On the other hand, other instruments such as pinning websites are not seen as helpful in improving learning. However, we do not recommend that educators abandon this instrument altogether. In fact, the visual nature of the instrument may be valid across a range of teaching outcomes. Similarly, students expressed a lack of knowledge about blogging, believing it has little potential in terms of learning. Nevertheless, the account of Kaplan demonstrates a sequence of positive learning results related with blogging. (M.D. Kaplan et al., 2010). Students may miss out on valuable and practical tools that can improve their educational experience. Therefore, educators should be aware of students' perspectives on the future and make efforts to educate students on why it is valuable to use instruments such as websites and blogs, and provide them with practical ways to learn.

In entirety, we find that students are careful about using social media instruments in education. Instructors who want students to have open deliberations and express their thoughts in and out of the classroom should use social media as a potential educational instrument. However, they should be aware that so-called "digital natives" may not uniformly embrace all social media tools in the classroom and may do so mainly for interactive and informational purposes. Educators should strategically integrate social media instruments into the classroom and enhance integrated, interactive, and informative discussions in a manner consistent with course objectives. In addition, in the thorough interviews, if social media is used in the instructive setting, students' opinions of educators and universities are mostly positive, thinking that teachers are current, while universities show exciting brand personalities. Although the question is whether the university must be seen as an exciting target audience versus, for example, another director of brand personality such as competent (Aaker, 1997), the generally favorable opinions of students denotes that the use of social media in education can be seen as a positive force in their overall educational experience.

5. Future research and limitations

We asked students about their views on the potential role of social media instruments in higher education—how open they are to using them, what motivates them, and what they think about teachers and universities who use social media for educational purposes. We did not intend to use direct methods to assess the competence of using social media in education (Bacon, 2011). In addition, student perception is one of the many factors that teachers need to consider when deciding whether to use these instruments in the classroom. To further assist educators in their decision to use social media for educational purposes, further research is needed to use direct measures of effectiveness that are applicable to different types of curriculum and teaching methods.

Another potential limitation of the study is that all the students in the study were at the same university, some with the same teachers. Students' perceptions of the use of social media in education are influenced not only by their current institution's efforts to use social media, but also by their perception of the school's existing brand. For example, they can refer to their own institution, rather than to universities in general, when formulating their ideas about brand recognition and social media. Exploratory research on the relationship between social media use and students' perception of college needs further confirmation and expansion.

Finally, our data collection did not attempt to categorize students according to their personal characteristics or learning styles. Instead, the purpose of this study was to provide a broad understanding of students' perceptions of the use of social media in education. Past studies have detailed how different learning styles are associated with online teaching methods (Saeed, Yang, & Sinnappan, 2009). Future research should extend the work of Saeed et al. (2009) to explore more deeply how specific learning styles match preferences for using social media tools in education.

CRediT authorship contribution statement

Blessing Dwumah Manu: Conceptualization, Writing - original draft, Formal analysis, Writing - review & editing, Software, Writing - review & editing. **Feng Ying:** Methodology, Writing - review & editing. **Daniel Oduro:** Conceptualization, Writing - original draft, Writing - review & editing. **Solomon Agyenim Boateng:** Writing - review & editing.

Declaration of competing interest

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References

- Aaker, J. (1997). Dimensions of brand personality. *Journal of Marketing Research*, 34, 347–356.
- Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education*, 11(2), 71–80.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25(4), 297–308.
- Aviles, M., & Eastman, J. (2012). Utilizing technology effectively to improve Millennials' educational performance: An exploratory look at business students' perceptions. *Journal of International Education in Business*, 5, 96–113.
- Axelson, R., & Flick, A. (2011). Defining student engagement. *Change: The Magazine of Higher Learning*, 43(1), 38–43.
- Bacon, D. (2011). Comparing direct versus indirect measures of the pedagogical effectiveness of team testing. *Journal of Marketing Education*, 33, 348–358.
- Bakker, A. B., Vergel, A. I. S., & Kuntze, J. (2015). Student engagement and performance: A weekly diary study on the role of openness. *Motivation and Emotion*, 39(1), 49–62.
- Bar, M. (2009). The proactive brain: Memory for predictions. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1521), 1235–1243.
- Cavazza, F. (2008). *Social media landscape*. <http://flickr.com/photos/20493464/N00/2564571564/>. (Accessed 30 July 2008). <http://www.fredcavazza.net/2008/06/09/social-media-landscape/>.
- Cronin, J. (2009). Upgrading to Web 2.0: An experiential project to build a marketing wiki. *Journal of Marketing Education*, 31, 66–75.
- Davis, H. A., Summers, J. J., & Miller, L. M. (2012). An interpersonal approach to classroom management: Strategies for improving student engagement. *Corwin Press*.
- Drenten, J. (2013). "Pinteresting" pedagogy: Exploring the value of Pinterest as an educational tool in the marketing classroom. In *Paper presented at the marketing management association fall educators' conference, New Orleans, LA, 2013*.
- Dron, J., & Anderson, T. (2014). Teaching crowds: Learning and social media. *Athabasca University Press*.
- Duke, C. (2002). Learning outcomes: Comparing student perceptions of skill level and importance. *Journal of Marketing Education*, 24, 203–217.
- Dunlap, J., & Lowenthal, P. (2009). Tweeting the night away: Using Twitter to enhance social presence. *Journal of Information Systems Education*, 20, 129–135.
- Evans, C. (2014). Twitter for teaching: Can social media be used to enhance the process of learning? *British Journal of Educational Technology*, 45(5), 902–915.
- Franklin, T., & van Harmelen, M. (2007). Web 2.0 for learning and teaching higher education: The observatory of borderless higher education. http://www.obhe.ac.uk/documents/view_details?id=24.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>
- Fredricks, J. A. (2011). Engagement in school and out-of-school contexts: A multidimensional view of engagement. *Theory Into Practice*, 50(4), 327–335.
- Gilboy, M. B., Heinerichs, S., & Pazzaglia, G. (2015). Enhancing student engagement using the flipped classroom. *Journal of Nutrition Education and Behavior*, 47(1), 109–114.
- Granitz, N., & Koernig, S. K. (2011). Web 2.0 and marketing education: Explanations and experiential applications. *Journal of Marketing Education*, 33, 57–72.
- Gray, D., Peltier, J., & Schibrowsky, J. (2012). The journal of marketing education: Past, present, and future. *Journal of Marketing Education*, 34, 217–237.
- Greenhow, C., & Burton, L. (2011). Help from my "friends": Social capital in the social network sites of low-income students. *Journal of Educational Computing Research*, 45, 223–245.
- Griffin, R. W., & Cashin, W. E. (1989). The lecture and discussion method for management education: Pros and cons. *The Journal of Management Development*, 8(2), 25–32.
- Hargittai, E., & Hsieh, Y. P. (2010). From dabblers to omnivores: A typology of social network site usage. In Z. Papacharissi (Ed.), *A networked self* (pp. 146–168). London, England: Routledge.
- Hargittai, E., & Hsieh, Y. P. (2012). Succinct survey measures of web-use skills. *Social Science Computer Review*, 30, 95–107.
- Hargittai, E., & Litt, E. (2011). The tweet smell of celebrity success: Explaining variation in Twitter adoption among a diverse group of young adults. *New Media & Society*, 13, 824–842.
- Huaisheng, Z., Manu, B. D., Mensah, I. A., Mingyue, F., & Oduro, D. (2019). Exploring the effect of school management functions on student's academic performance: A dilemma from public senior high schools in Ghana. *Journal of Arts and Humanities*, 8(6), 33–45.
- Huang, C. D., & Behara, R. S. (2007). Outcome driven experiential learning with Web 2.0. *Journal of Information Systems Education*, 18, 329–336.
- Hung, H.-T., & Yuen, S. C.-Y. (2010). Educational use of social networking technology in high education. *Teaching in Higher Education*, 15, 703–714.
- Junco, R., Heiberger, G., & Loken, E. (2011). The effect of Twitter on college student engagement and grades. *Journal of Computer Assisted Learning*, 27, 119–132.
- Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education*, 38(5), 758–773.
- Kaplan, M. D., Piskin, B., & Bol, B. (2010). Educational blogging: Integrating technology into marketing experience. *Journal of Marketing Education*, 32, 50–63.
- Kilian, T., Hennings, N., & Langner, S. (2012). Do Millennials read books or blogs? Introducing a media usage typology of the internet generation. *Journal of Consumer Marketing*, 29, 114–124.
- Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory Into Practice*, 41, 212–218.
- Krause, K., & Coates, H. (2008). Students' engagement in first-year university. *Assessment & Evaluation in Higher Education*, 33(5), 493–505.
- Kuh, G. D. (2009). What student affairs professionals need to know about student engagement. *Journal of College Student Development*, 50, 683–706.
- Lester, P. M. (2013). *Visual communication: Images with messages*. Cengage Learning.
- Leach, C. W. (2016). The meta-theory of examining emotion in social relationships. *Psychological Inquiry*, 27(2), 113–116.
- Lowe, B., & Laffey, D. (2011). Is twitter for the birds? Using twitter to enhance student learning in a marketing course. *Journal of Marketing Education*, 33, 183–192.
- Martin, K., Goldwasser, M., & Galentino, R. (2016). Impact of cohort bonds on student satisfaction and engagement. *Current Issues in Education*, 19(3).
- Manu, B. D., & Huaisheng, Z. (2017). *A fitted logistic regression analysis of factors influencing teachers' learning and professional development. Evidence from selected schools in Ghana*.
- Manu, B. D., Zhang, H., Oduro, D., Krampah-Nkoom, A., Mensah, I. A., Anaba, O. A., et al. (2019). School board efficiency in financial management and human resource in public senior high schools: An evidence from Ashanti region, Ghana. *International Journal of Social Science Studies*, 8(1), 79–89.
- McCracken, G. (1988). *The long interview*. New York, NY: Sage.
- McQuail, D. (1983). *Mass communication theory: An introduction*. London, England: Sage.
- Minocha, S. (2009). Role of social software tools in education: A literature review. *Education + Training*, 51, 353–369.
- Nora, A., Barlow, E., & Crisp, G. (2005). Student persistence and degree attainment beyond the first year in college. *College Student Retention: Formula for success*, 129–153.
- Neier, S., & Zayer, L. T. (2015). Students' perceptions and experiences of social media in higher education. *Journal of Marketing Education*, 37(3), 133.
- Oteng-Ababio, M. (2011). Door of hope or despair: Students' perception of distance education at University of Ghana. *The Turkish Online Journal of Distance Education*, 12(3), 241–258.
- Owens, J. D., & Price, L. (2010). Is e-learning replacing the traditional lecture? *Education + Training*, 52, 128–139.
- Pace, C. R. (1980). Measuring the quality of student effort. *Current Issues in Higher Education*, 2, 10–16.
- Payne, N. J., Campbell, C., Bal, A. S., & Piercy, N. (2011). Placing a hand in the fire: Assessing the impact of a YouTube experiential learning project on viral marketing knowledge. *Journal of Marketing Education*, 33, 204–216.
- Poelhuber, B., & Anderson, T. (2011). Distance students' readiness for social media and collaboration. *International Review of Research in Open and Distance Learning*, 12(6), 102–125.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York, NY: Simon & Schuster.
- Richardson, J. C., & Newby, T. (2006). The role of students' cognitive engagement in online learning. *American Journal of Distance Education*, 20(1), 23–37.
- Rinaldo, S., Laverie, D. A., Tapp, S., & Humphrey, W. (2013). The benefits of social media in marketing education: Evaluating Twitter as a form of cognitive flexibility hypertext. *Journal for Advancement of Marketing Education*, 21, 16–26.
- Rinaldo, S., Tapp, S., & Laverie, D. A. (2011). Learning by tweeting: Using Twitter as a pedagogical tool. *Journal of Marketing Education*, 33, 193–203.
- Saeed, N., Yang, Y., & Sinnappan, S. (2009). Emerging web technologies in higher education: A case of incorporating blogs, podcasts and social bookmarks in a web programming course based on students' learning styles and technology preferences. *Educational Technology & Society*, 12(4), 98–109.
- Sendall, P., Ceccucci, W., & Peslak, A. R. (2008). Web 2.0 matters: An analysis of implementing Web 2.0 in the classroom. *Information Systems Education Journal*, 6, 1–17.
- Selwyn, N. (2012). Social media in higher education. *The Europa World of Learning*, 1, 1–10.
- Solis, B. (2008a). *Customer service: The art of listening and engagement through social media* (Vol. 32).
- Solis, B. (2008b). *Introducing the conversation prism*. <http://www.briansolis.com/2008/08/introducing-conversationprism.html>. (Accessed 6 August 2008).
- Solis, B. (2008c). *The essential guide to social media*.
- Tapscott, D. (2009). *Grown up digital: How the net generation is changing your world*. New York, NY: McGraw-Hill.
- Taylor, S. A., Mulligan, J. R., & Ishida, C. (2012). Facebook, social networking, and business education. *American Journal of Business Education*, 5, 437–448.
- Trinder, K., Guiler, J., Margaryan, A., Littlejohn, A., & Nicol, D. (2008). *Learning from digital natives: Bridging formal and informal learning*. York, England: Higher Education Academy. Final Report 12 May 2008.
- Trowler, V. (2010). Student engagement literature review. *The Higher Education Academy*, 11(1), 1–15.
- Trowler, P., & Trowler, V. (2010). *Student engagement evidence summary*.
- Witkowski, P., & Cornell, T. (2015). An investigation into student engagement in higher education classrooms. *InSight: A Journal of Scholarly Teaching*, 10, 56–67.

- Zahay, D., Eddy, A., & Kaufman, I. (2013). The fifty percent rule: The challenge of engaging students in social media in the classroom. *Developments in marketing science*. In *Proceedings of the Annual Conference of the Academy of Marketing Science* (vol. 36, p. 335).
- Zepke, N. (2016). *Student engagement in neoliberal times: Theories and practices for learning and teaching in higher education*. Springer.
- Campbell, C., & Rozsnyai, C. (2002). Quality assurance and the development of course programmes. *Papers on Higher Education*.
- Zepke, N., & Leach, L. (2010). Improving student engagement: Ten proposals for action. *Active Learning in Higher Education*, 11(3), 167–177.
- Zula, K., Yarrish, K. K., & Pawelzik, W. (2011, September). An analysis of the differences between student age and social networking utilization within a school of business. *American Journal of Business Education*, 9, 37–42.
- Zanamwe, N., Rupere, T., & Kufandirimbwa, O. (2013). Use of social networking technologies in higher education in Zimbabwe: A learners' perspective. *International Journal of Computer and Information Technology*, 2(1), 8–18.
- Zheng, V., Cao, B., Zheng, Y., Xie, X., & Yang, Q. (2010, July). Collaborative filtering meets mobile recommendation: A user-centered approach. In *Proceedings of the AAAI Conference on Artificial Intelligence*, 24(1).