

The Impact of Social Network Sites on Knowledge and Information Sharing to Students in the Open Distance Learning Scheme

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ABSTRACT

This study examines the impact of selected Social Network Platforms on the dissemination of knowledge and information for students of the National Open University of Nigeria. Three major social network platforms are considered in this study, they are: Facebook, Web-blogs and YouTube. Research questions were asked based on the objectives of this study and a number of hypotheses were formulated. The questionnaire used as the survey instrument was carefully designed and distributed to some students within the study domain. This comprised of the registered students for 2016/2017 Academic Session at the National Open University of Nigeria, Ilorin and Oshogbo Study Centres. Questionnaires were administered to a total of 600 students in the two centres. The data collected are analyzed using Statistical Package for Social Sciences (SPSS). Findings from this study show that, 80% of the respondents indicate the positive impact of the three social network platforms under study. The impacts of the three networks are also found to be significant. The study further reveals that, effective utilization of educational features of Social Network Platforms has a great and tremendous advantage to students if optimally put to use. It is recommended that students who find the use of Social Network Platforms distracting to academics, should reduce the time they dedicate to exploration of online resources and in particular on these platforms: Facebook, Web-blogs and YouTube.

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I. Introduction

The use of social media is rapidly changing the usual form of information dissemination in the institutions of learning. This is as a result of more awareness and evolution of technology, which is highly acclaimed as the best medium for exploring the wide array of knowledge. The evolution of internet technology in turn has led to its use as one of the most suitable medium of communication. Generally, an increasing number of higher education instructors are beginning to combine distance education delivery with Social Networking Sites [1]. Unlike several decades ago, accessibility to internet has increased significantly and today, this has contributed to better information sharing.

The selected network sites for this study are typical examples of web 2.0 services. The services can be defined as a more personalised, communicative form of the World Wide Web that emphasises active participation, connectivity, collaboration and sharing of knowledge and ideas among users

[2]. The online communities of Internet users make use of several social network platforms in order to communicate with other users about areas of mutual interest; at times, it may be for personal purposes, business or academic perspective [3].

The social network platforms share some features in common which allows users to sustain profiles of themselves and lists of their friends. The continued increase in the number of networking platforms has transformed the thought of global village into a reality, whereby, billions of people now communicate through social networking. The focus of social networking has been to build and reflect social associations among people who share interests and or activities.

Also, as observed in the study reported in [4], Facebook has become social networking site that is being used at all universities. The technology has recorded several improvements in recent past; social networks now enable people to share their personal experience with others through videos, music and other media. Also, social network platforms are being used by teachers and students at several places as a communication tool. For effective teaching and research, teachers have imbibed the idea of passing their messages across to students through the use of forums and groups to extend classroom deliberations.

Generally, one of the widely used platforms for information sharing is Twitter. It is an online social networking platform and micro-blogging service that enables users to send and read "tweets", which are text messages limited to a specific number of characters. However, it is not among the network sites under consideration in this study. Facebook appears to be the most successful and largest social networking platform in use today. It has helped so much in knowledge and information sharing. Web-blogs allow people to communicate with one another, usually around a specific topic of interest. YouTube is another useful social networking platform originally used as a repository for sharing home-made videos and more recently, online content is being generated by political parties, businesses and educationists [5].

Several reports have identified the effects of using social networking, such effect ranges from enhancing friends and relations performance [6]. It is further revealed in [6] that, social networking provide the opportunity to connect with new people and build better relationships through which one can know about their lives and events happening around them. However, in some instances, a social networking platform exposes users to some immoral acts.

The objective of this study is keen on making findings from students in the distance learning scheme with a view to ascertaining how the social networking platforms had impacted in the teaching and learning. A number of studies have investigated what motivate people to participate in blog activities. For instance, the study reported in [7], made some findings on acceptability of blog usage. Specifically, the study revealed the roles of technology acceptance, social influence and knowledge sharing.

This research focuses on the impacts of the selected platforms on the dissemination of knowledge and sharing of information to students in the distance learning scheme. The National Open University of Nigeria is taken as the case study. Findings from this study would go a long way at improving the policies designed towards the use of these media for a more robust information sharing among stakeholders involved in distance learning scheme and in particular, the national open university of Nigeria.

This paper is divided into a number of sections. The rest of this paper is organized as follows: Section II briefly discusses what social network platform is all about. Section III reviews some literature related to this study. Section IV presents the material and methods used in this study while in Section V, the results of this study is presented and analysed for better understanding. In Section VI, findings from this study are discussed and this paper concludes in Section VII.

II. Social Network Platforms

A number of social network sites have been introduced for some decades. Since the introduction of these network sites which include MySpace, Facebook, and Twitter, these sites have attracted millions of users, many of whom have integrated these sites into their daily practices. Although, Facebook was introduced to a handful of college campuses in 2004, but today, it has become nearly ubiquitous at universities [4].

Social Network Sites (SNSs) in recent times is increasingly attracting the attention of researchers in the academia due to their affordances and reach. Most sites support the maintenance of pre-existing social networks, but others help strangers to connect based on shared interests, political views, or activities [8]. Some sites cater for diverse audiences, while others attract people based on common language or shared racial, sexual, religious, or nationality-based identities.

The use of Facebook encompasses both the simple use of the platform and due to the extent of cognitive immersion into the site, people from different age range interact and exchange useful materials through the sharing of videos and pictures. There is also the opportunity to engage in interactive chatting between friends and among members in a group.

Twitter as a micro-blogging service that can be used to influence the dissemination of knowledge and information. This can be achieved through its adoption in the education process by both the student and their instructors. This involves participation in the activities that ranges from a well-organized discussion online, providing academic and personal support. It is not among the social network sites considered in this study.

The use of web-blog in the dissemination of knowledge sharing is becoming more popular. Few instructors use blogs as part of their teaching by using the medium to replace the standard class web-page and in organizing in-class discussion for better learning.

YouTube is beneficial to students because many of them learn best through visuals. The teacher can use existing videos or create their own to teach their students. There are plenty of other uses, though. For instance, a teacher can create a video-based quiz which the students can take home or access in the classroom. Most students aren't used to video quizzes, so this approach of using YouTube can be a positive challenge for the students.

The description of social network sites in [8] shows that, SNSs share a variety of technical features that allow individuals to construct a public/semi-public profile, articulate a list of other users that they share a connection with, and view their list of connections within the system. The most basic of these are visible profiles with a list of "friends" who are also users of the site. User profiles often have a section dedicated to comments from friends and other users. To protect user privacy, social networks typically have controls or settings that allow users to choose who can view their profile, contact them, add them to their list of contacts, and so on.

Some social network sites have additional features, such as the ability to create groups that share common interests or affiliations, upload or stream live videos, and hold discussions in forums. Geo-social networking co-opts Internet mapping services to organize user participation around geographic features and their attributes. There is a trend towards more interoperability between social networks led by technologies such as OpenID and OpenSocial. In most mobile communities, some mobile phones enable the users to create their own profiles, make friends, participate in chat rooms, create chat rooms, and hold private conversations. Such communities also share photos and videos, and share blogs by using their mobile phone. Some companies provide wireless services that allow their customers to build their own mobile community and brand it.

Also emerging is the concept of 'real-time web' and 'location-based'. The real-time allows users to contribute content, which is then broadcast as it is being uploaded. The concept is analogous to live

radio and television broadcasts. Twitter set the trend for 'real-time' services, in such technology, users can broadcast to the world what they are doing, or what is on their minds within a 140 character limit. Facebook followed suit with their 'Live Feed' where users' activities are streamed immediately as it happens.

III. Review of Related Studies

The use of Social Network Platform has become a popular trend among teenagers and young adults; people in academia are also exploring its use for better interaction and ease of communication in recent times. The platforms are now seen as a faster means of sharing information among stakeholders in the institutions of learning. The main impact of using these platforms for knowledge and information sharing for the students in the open distance learning scheme is the focus of this study. Some related studies reported in the literature are reviewed and presented in this section.

The study on the student usage of Facebook reported in [9], examines the potential impact of this social network medium on faculty interaction, and institutional policy. The result of a study by Pew Internet & American Life Project as cited in [10] affirmed that, 73% of teens (ages 12-17) and young adults (ages 18-29) in the United States uses social network platforms. Although, this may include some percentage of high school students due to the age range.

The rationale for using Social Network Platforms among undergraduates as discussed in [11], the online social networks allow learners to access peers, experts, and the wider community in ways that enable reflective and self-directed learning. In line with this, the study in [12] opined that, the involvement of a student in activities such as making friends on social network platforms should be seen as a way of having access to up to date information. Such information can be channelled towards improving academic performance which they described as how students cope with or accomplish different tasks given to them by their teachers.

Studies on social media network participation and academic performance in senior high schools [13], revealed that addiction in using social media can lead to negative effects on students. The study carried out in Ghana surveyed students of senior high schools and listed less study time, poor grammar and spelling as some of the issues that may arise due to excessive use of social media by students [14]. A similar study also reported that lower GPA is associated with heavy use of Facebook by some students.

Although, the study reported in [15] at the Northeast research university contradicts these findings. The researchers reported that there was no correlation between the use of Facebook and GPA. Also similar research in support of lack of correlation between heavy use of Facebook and GPA as revealed in [3] showed that, there is no significant difference between the grades of those considered to be heavy users of social network platforms and those considered to be light users.

The research carried out on those who interact on the web and reported in [16] showed that, people who use social media applications more frequently tend to be more innovative and creative; the study also found the relationship between life satisfaction and social media usage as negative and statistically significant.

IV. Material and Methods

The survey research method was adopted in the collection of data for this study. The survey involves the use of structured questionnaire; this is considered appropriate because according to [17], survey is capable of gathering data at a particular point in time with the intention of determining the relationships that exist between specific events. National Open University of Nigeria (NOUN) is taken as the case study.

4.1 Research Questions and Hypothesis

Some questions were asked from the students that participated in the survey using the questionnaire. The questions were targeted at determining the influence of each network sites on knowledge and Information dissemination to students of the National Open University of Nigeria. Some of the questions asked in section B of the questionnaire had the options of a two point rating scale 'yes' or 'no'. The questions inquire from the students were based on the objective of this study and aimed at revealing the following from the participants: the frequency and length of time students devoted to using SNSs, how often the SNSs is being used for social or academic activities, the patterns of using the SNSs, the impact of using the SNSs on students' performance, the level of participation of the respondents in the group chat, etc.

Hypotheses are formulated and tested to determine whether the null hypotheses should be rejected or accepted as illustrated in hypotheses 1-4 (see Results and Analysis).

4.2 Sampling design techniques and population of the study

A sample design is a definite plan for obtaining a sample from the sampling frame [18]. This is the procedure adopted in selecting some sampling units from which inferences about the population is eventually drawn. This study was conducted at the National Open University of Nigeria during the 2016/2017 academic session. The sample data analyzed in this study consists of the data from respondents at the two campuses: NOUN, Ilorin Study Centre and the NOUN, Oshogbo Study Centre. In order to achieve a fair representation of the data from the two centres, the combined data were randomly sampled. The selection approaches ensure sample data that reflect the makeup of the data from the two centres.

4.3 Data collection instrument

A structured questionnaire was developed for this study and was divided into Sections A, B and C. Section A requested personal data from the respondents. Section B asked the respondents on the use of social network platforms; in particular, the use of Facebook, Blogs and YouTube; it has the option of a two rating scale. Section C inquired about the student's academic performance, the section specifically focuses on the Cumulative Grade Point Average (C.G.P.A). This research instrument was designed based on the objectives and research questions of this study.

The questionnaires were administered to 600 students in collaboration with respective class representatives which helps to ensure a high response rate, rapid distribution and completion of the questionnaires. The respondents were closely monitored without influencing their opinion; the close monitoring, enhanced the speedy completion of the items on the questionnaire and 85% return rate was recorded which translate to 511 students. This form the total data collected and analyzed in this study using SPSS.

V. Results and Analysis

The results from this study are represented in both tabular and graphical formats. The result of the hypothesis tested for each of the social networks is illustrated in Tables 5.1 – 5.3. Also, Figure 5.1 shows the graphical illustration of respondents as regards the usage of social network sites under study for academic purposes and information sharing to students.

Hypothesis 1: Facebook has no significant influence on the dissemination of knowledge and Information to students of the National Open University of Nigeria.

Table 5.1 Chi Square Test of Significance of Facebook usage on Students' Academic Performance

OBSERVED(O)	EXPECTED(E)	O-E	(O-E) ²	(O-E) ² /E
4.232804233	7.920792079	-3.68799	13.60125	1.717158
6.19047619	11.58415842	-5.39368	29.09181	2.511344
8.888888889	16.63366337	-7.74477	59.98153	3.606033
7.841269841	14.67326733	-6.832	46.67619	3.181036
8.73015873	16.33663366	-7.60647	57.85846	3.541639
				14.55721

The data in Table 5.1 shows the result for the summarized chi-square analysis of the influence of Facebook on the dissemination of knowledge and Information sharing to the students of NOUN. The data has an X^2 value of 14.56 at a degree of freedom of (c-1) (r-1), which is (5-1) (2-1). The degree of freedom is 4. As observed from the table, the tabulated X value is 0.6736. Since the calculated X^2 value of 14.56 is greater than the tabulated value, the null hypothesis is rejected. Thus, Facebook has significant influence on the dissemination of knowledge and Information to students of the National Open University of Nigeria.

Hypothesis 2: Web-blog has no significant influence on the dissemination of knowledge and Information to students of the National Open University of Nigeria.

Table 5.2 Chi Square Test of Significance of Internet Blog usage on Students' Academic Performance

OBSERVED(O)	EXPECTED(E)	O-E	(O-E) ²	(O-E) ² /E
4.260869565	10.62650602	-6.36564	40.52133	3.813232
3.65942029	9.126506024	-5.46709	29.88903	3.274969
8.115942029	20.24096386	-12.125	147.0162	7.263298
1.594202899	3.975903614	-2.3817	5.672498	1.426719
7.717391304	19.24698795	-11.5296	132.9316	6.906618
				22.68484

The result in Table 5.2 shows the summary of the chi-square test for significant influence of Web-blogs on dissemination of knowledge and Information to students of the National Open University of Nigeria. The data has an X^2 value of 22.69 at a degree of freedom of (c-1) (r-1), which is (5-1) (2-1). The degree of freedom is 4. From the table, the tabulated X value is 0.6736. Since the calculated X^2 value of 22.69 is greater than the tabulated value, the null hypothesis is rejected.

Thus, Web-blog has significant influence on the dissemination of knowledge and Information to students of NOUN.

Hypothesis 3: YouTube has no significant influence on the dissemination of knowledge and Information to students of the National Open University of Nigeria.

The result in Table 5.3 shows the summary of the chi-square test for significant influence of YouTube on dissemination of knowledge and Information to students of the National Open University of Nigeria. Similarly, the data has an X^2 value of 35.54 at a degree of freedom of (c-1) (r-1), which is (5-1) (2-1). The degree of freedom is 4. From tables, the tabulated X value is 0.6736. Since the calculated X^2 value of 35.54 is greater than the tabulated value, the null hypothesis is rejected. Thus, YouTube has significant influence on the dissemination of knowledge and Information sharing to students of NOUN.

Table 5.3 Chi Square Test of Significance of YouTube usage on Students' Academic Performance

OBSERVED(O)	EXPECTED(E)	O-E	(O-E) ²	(O-E) ² /E
3.826464208	14.82352941	-10.9971	120.9354	8.158343
0.971800434	3.764705882	-2.79291	7.800321	2.07196
4.327548807	16.76470588	-12.4372	154.6829	9.226698
0.735357918	2.848739496	-2.11338	4.466382	1.567845
6.809110629	26.37815126	-19.569	382.9474	14.5176
				35.54244

Graphical representation

Figure 5.1 shows the result of investigating the student population that uses Facebook for knowledge and information sharing. Out of a total number of 511 respondents, 80% of the students responded 'yes' to the questions with options of a two point rating scale: 'yes' or 'no'. A total of five questions were asked in relation to each social network site under study (Q1 – Q5) represented in x-axis. The y-axis is the percentage of the respondents. Similar results are also recorded for two other social networks under study. Since the answers by the respondents on the use of the three media follow the same pattern, only the excerpt of the results is represented in graphical format as shown in Figure 5.1.

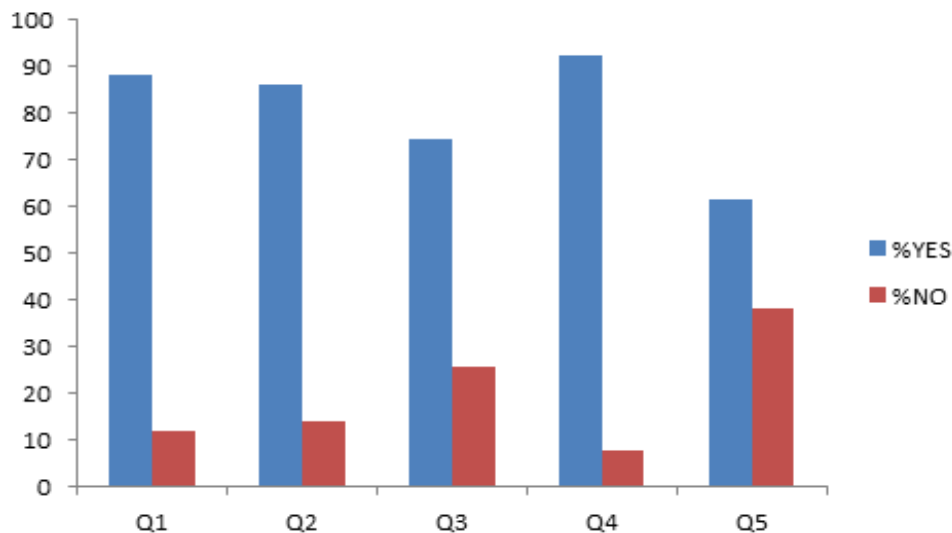


Figure 5.1 The percentage of respondents on the use of Facebook for knowledge and Information sharing.

VI. Discussion of Findings

Four hypotheses were formulated and tested using chi square. The test carried out was to determine the influence of using the three social network platforms under studies for knowledge and information dissemination. The analysis of the students' response on the influence of Facebook usage shows significant values.

Influence of Facebook Usage on dissemination of knowledge and Information. The analysis of the students' response on the influence of Facebook usage on dissemination of knowledge and Information to students of National Open University of Nigeria shows that, Facebook has significant influence. The findings of this study agree with the reports of the study in [19], on the use of Facebook as reflect in the students' academic performance. However, the study carried out on undergraduate Facebook profiles and reported in [15], neither supports nor rejects the findings based on the correlation between using of Facebook by the students and the student's Grade Point Average (GPA). In contrast to these findings, the research finding reported in [20] showed that, those students that are addicted to using social media too often experienced negative effects such as: poor grammar and spelling, less study time and poor academic performance.

Influence of Internet Blogs on dissemination of knowledge and information: The chi-square test of significant influence of Internet Blogs on dissemination of knowledge and Information to students of National Open University of Nigeria. This study has shown that Internet Blogs has a significant influence. This finding is in consonance with the related research in [1]. Their study focused on the educational benefits of the social networking platforms and concluded that, since social networking platforms are centered on the individual rather than on the class, they have the potential to increase students' academic performance.

Influence of YouTube on dissemination of knowledge and information: The chi-square test of significant influence of YouTube on dissemination of knowledge and Information to students of National Open University of Nigeria reveals that YouTube has significant influence. The finding of the present study is in line with the study reported in [21]. The study reveals that some Social Networking activities predicted higher scores in verbal and visual-spatial working memory performance. Similarly, this finding also corroborates the findings in the research reported in [22]. The study revealed that social network platform can improve students' psychological well-being, skill development and desired learning outcomes.

The findings emanated from this study reinforce the results of some studies discussed earlier. It can be concluded from this study that social network platforms have significant influence on the dissemination of knowledge and Information to students of the National Open University of Nigeria. However, based on the analysis of the findings and the related studies reported in the literature, students should have a restraint for excessive use of social network sites.

VII. Conclusions and Further Studies

Based on the findings of this study, a number of conclusions were drawn. This study reveals that significant percentage of students in the National Open University of Nigeria have benefitted immensely in the course of using Social Network Platforms as a means of knowledge and information sharing. The use of Facebook, Web-blogs and YouTube, which were the selected social network platforms for this study have indeed helped in communication as indicated in the patterns of student responds. Using a statistical approach, each of these platforms is tested and found to have a significant influence on the dissemination of knowledge and Information sharing to students of the National Open University of Nigeria.

The use of the platform is not without its challenges; among the leading challenges are cost, and privacy interference by other users. However, this study has revealed some great impacts of using the social network platforms in the distance learning scheme. The research has clearly unveils how the selected social networks are beneficial to students in the information and knowledge dissemination.

The literature did not have a single position on the implication of heavy or light use of social media; however, this study recommends that anyone who feels the impact of social media negatively or find it distracting to academics should reduce the length of time such person dedicate to the use of social network platforms.

In the near future, we hope to step up this study by focusing on analyzing the data captured through online interaction among the students of the open learning scheme across Nigeria using the techniques of data mining.

References

- [1] K. P. Brady, L. B. Holcomb, and B. V. Smith, "The use of alternative social networking sites in higher educational settings: A case study of the e-learning benefits of Ning in education," *Journal of Interactive Online Learning*, vol. 9, 2010.
- [2] C. McLoughlin and M. Lee, "Social software and participatory learning: Pedagogical choices with technology affordances in the Web 2.0 era," 2007.
- [3] D. Williams, N. Martins, M. Consalvo, and J. D. Ivory, "The virtual census: Representations of gender, race and age in video games," *New Media & Society*, vol. 11, pp. 815-834, 2009.
- [4] R. Junco, "Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance," *Computers in human behavior*, vol. 28, pp. 187-198, 2012.
- [5] A. Clinton, "Can YouTube Enhance Student Nurse Learning," *Nurse Education Today*, vol. 31, 2011.
- [6] S. N. Ali, "Social Media - A Good Thing or a Bad Thing?," ed, 2012.
- [7] C.-L. Hsu and J. C.-C. Lin, "Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation," *Information & management*, vol. 45, pp. 65-74, 2008.

- [8] N. B. Ellison, "Social network sites: Definition, history, and scholarship," *Journal of Computer-Mediated Communication*, vol. 13, pp. 210-230, 2007.
- [9] J. P. Mendez, K. Le, and J. De La Cruz, "Integrating Facebook in the classroom: Pedagogical dilemmas," *Journal of Instructional Pedagogies*, vol. 13, p. 1, 2014.
- [10] A. Lenhart, M. Madden, A. Smith, and A. Macgill, "Teens and social media: An overview," *Washington, DC: Pew Internet and American Life*, pp. 97-119, 2009.
- [11] C. McLoughlin and M. J. Lee, "The three p's of pedagogy for the networked society: Personalization, participation, and productivity," *International Journal of Teaching and Learning in Higher Education*, vol. 20, pp. 10-27, 2008.
- [12] K. Banquil, N. Chua, G. Leano, M. Rivero, C. Burce, S. Dianalan, *et al.*, "Social networking sites affect one's academic performance adversely," *UST College of Nursing*, pp. 1-42, 2009.
- [13] J. Mingle and M. Adams, "Social media network participation and academic performance in senior high schools in Ghana," *Library Philosophy and Practice*, p. 1, 2015.
- [14] M. R. V. Boogart, "Uncovering The Social Impacts of Facebook on a College Campus," M.Sc. thesis, Kansas State University, Manhattan, Kansas, 2006.
- [15] E. A. Kolek and D. Saunders, "Online disclosure: An empirical examination of undergraduate Facebook profiles," *NASPA journal*, vol. 45, pp. 1-25, 2008.
- [16] T. Correa, A. W. Hinsley, and H. G. De Zuniga, "Who interacts on the Web?: The intersection of users' personality and social media use," *Computers in Human Behavior*, vol. 26, pp. 247-253, 2010.
- [17] L. Cohen and L. Manion, *Research methods in education*, 2nd Edition ed. London: Croom Helm, 1985.
- [18] C. R. Kothari, *Research Methodology: Methods and Techniques*, Second Revised Edition ed. New Delhi: New Age International (P) Ltd., 2004.
- [19] R. Junco, G. Heiberger, and E. Loken, "The effect of Twitter on college student engagement and grades," *Journal of computer assisted learning*, vol. 27, pp. 119-132, 2011.
- [20] J. Mingle and M. Adams, "Social Media Network Participation and Academic Performance in Senior High Schools in Ghana," *Library Philosophy and Practice*, 2015.
- [21] T. P. Alloway and R. G. Alloway, "The impact of engagement with social networking sites (SNSs) on cognitive skills," *Computers in Human Behavior*, vol. 28, pp. 1748-1754, 2012.
- [22] A. Y. Yu, S. W. Tian, D. Vogel, and R. C.-W. Kwok, "Can learning be virtually boosted? An investigation of online social networking impacts," *Computers & Education*, vol. 55, pp. 1494-1503, 2010.