COLLABORATIVE ACADEMIC PROJECTS
ON SOCIAL NETWORK SITES
TO SOCIALIZE EAP STUDENTS
INTO ACADEMIC COMMUNITIES OF PRACTICE

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Abstract

Learning English for academic purposes (EAP) can help university students promote their academic literacy through socializing them into academic communities of practice. This study examined the impact of the use of collaborative projects on three social network sites on EAP students' attitudes towards EAP and academic content learning. Three groups of students from three disciplines, i.e. engineering (n = 54), social sciences (n = 57), and basic sciences (n = 62) participated in the study. The students participated in collaborative projects on three social network sites, i.e. *Facebook*, *LinkedIn*, and *ResearchGate*, for a period of four months with the help of their teachers. Questionnaires and semi-structured interviews were utilized as the instruments of the study. The results suggested that the students from the three disciplines had positive attitudes towards carrying out collaborative projects on three social network sites. No significant difference was identified regarding students' attitudes. The perceived benefits of the project work included opportunities for having international communication, learning academic vocabulary, peer collaboration, teacher support, and opportunities for improving academic English and academic literacy. The study further explored students' attitudes towards factors which affected students' project work and the limitations of the use of collaborative projects on three social network sites. The students showed a preference for using *Facebook*; however they did not agree on their interest in the use of *ResearchGate* and *LinkedIn*. The findings can have implications for integrating the three social network sites in EAP instruction.

Keywords: collaborative learning; social network sites; English for Academic Purposes

1. Introduction

The application of social network sites (SNSs) in educational contexts has gained tremendous popularity among educational researchers, teachers, and students (Álvarez Valencia, 2015; Hsu, 2013; Özmen & Atıcı, 2014; Toetenel, 2014; Veletsianos & Navarrete, 2012; Yen, Hou,

& Chang, 2013). SNSs are defined as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (boyd & Ellison, 2007, p. 211). The integration of SNSs in educational practices of students has been found to offer all involved a variety of benefits. The most significant advantages of the use of SNSs in education include increase in student engagement, motivation and communication level (Brady, Holcomb, & Smith, 2010), improvement of peer feedback, student content and idea sharing and exchange, student creativity (Van De Bogart & Wichadee, 2015), participation and integration in online communities of practice, and collaborative learning (Wheeler, Yeomans, & Wheeler, 2008). The invaluable affordances of SNSs for educational purposes have encouraged educational experts and teachers to consider social networking as an effective aid for teaching and learning purposes.

English for Academic Purposes (EAP) is a branch of English for Specific Purposes (ESP) which aims to socialize university students into academic communities of practice through enabling them to engage in academic communication at an international level (Hyland, 2006). More specifically, the use of social network sites in EAP instruction can create a sense of community and collaborative learning in EAP instruction (Dashtestani & Stojkovic, 2016; Kavaliauskienė & Ashkinazi, 2014; Sabater & Fleta, 2015). Harwood (2014) suggests that social network sites can be staunch tools in order to facilitate university students' integration in online academic communities of practice and encourage them to learn both the academic vocabulary and the subject-specific academic content.

EAP and Computer-Assisted Language Learning (CALL) are closely related to each other (Jarvis & Pastuszka, 2008). Academic resources available on the Internet and computers are authentic ones and EAP students should be competent enough to read these online and computer-based resources (Plastina, 2003). More importantly, in order to join international academic communities of practice more easily, EAP students need to foster their digital literacy and be able to use online applications competently (Jarvis, 2009). Flea and Stanca (2010) suggest that collaborative learning on social network sites can affect EAP students' academic success, active learning, motivation, and interaction of students and teachers. Arno (2012) points out that the use of technology in EAP instruction would increase the level of authenticity, decrease costs, and meet the specific needs of EAP students. Therefore, the aim of this study is to identify Iranian EAP students' attitudes towards conducting academic

collaborative projects on three specific social network sites along with the limitations and students' preferences of these SNSs.

2. Language learning and social networking

Social networking and language learning research has attracted the attention of a plethora of English as a foreign language (EFL) researchers and scholars. In addition, the use of SNSs has provided a wide range of pedagogical opportunities for language learning and teaching contexts (Hsu, 2013). The analysis of the previous research on the use of SNSs in language learning reveals positive attitudes of students and positive learning outcomes in EFL contexts. For example, Millington and Smith (2012) reported that the use of social networking for EFL students promoted their autonomy and assisted them to be more creative in language learning. The persistent communication through chatting, exchanging videos and images, and blogging, which was inspired by the use of the SNS, encouraged EFL students to be involved in collaborative speaking activities and made them more interested in class participation. Kikuchi and Otsuka (2008) analyzed Japanese EFL students' use of social networking in the classroom and suggested that the students expressed positive attitudes towards blogging and its role in fostering their writing proficiency in the foreign language. The use of authentic materials and activities, together with constant communication between classmates were the other significant merits of the use of SNSs in the classroom. Liu et al. (2015) noted that the use of SNSs can have a positive influence on language learning. They proposed that the use of SNSs can enhance the rate of collaborative learning in the classroom. Based on the findings of this study, teachers may use SNSs to motivate students to have social interactions and connections with other students. Moreover, the authentic speaking interactions between less and more proficient learners can assist teachers to set more realistic teaching objectives. The other merits of the use of SNSs include opportunities for text chatting, corrective feedback on written tasks, and synchronous communication. As for the type of the SNS, it was suggested that students should find the use of a specific type of SNS easy in terms of factors such as accessibility, visibility, suitability, and language (Norman, 2002, cited in Liu et al., 2015).

Similarly, Hsu (2013) concluded that the use of *Facebook* can enhance students' engagement. The use of *Facebook* fostered students' motivation, vocabulary learning, self-confidence, and attitudes towards EFL learning. Moreover, the use of *Facebook* created an interactive learning environment in which learning improved. Kabilan, Ahmad, and Abidin (2010) identified similar benefits concerning the use of SNSs in an EFL learning context. The overall results of Kabilan et al.'s (2010) study indicated that university students considered

Facebook as an effective learning tool which can promote meaningful learning in EFL contexts. Ping and Maniam (2015) assessed the use of group discussion for learning English on *Facebook*. They reported that *Facebook* could be regarded as an effective choice for improving the quality and quantity of group discussions among EFL students. Similar findings with regard to the use of social networking in group discussion were reported in other studies (Omar, Embi, & Yunus, 2012; Tina, 2010).

As for the application of social network sites for ESP instruction, Dashtestani and Stojkovic (2016) point out that research on ESP and social networking is very limited. For example, Kavaliauskienė and Ashkinazi (2014) reported that the majority of EAP students are familiar with most social network sites, while they rarely make use of these sites. Kavaliauskienė and Ashkinazi's (2014) research provides evidence on the necessity of training EAP students for the effective use of social network sites for EAP learning. Similarly, Sabater and Fleta (2015) examined the effectiveness of *Twitter* for ESP students. They argued that the use of *Twitter* improved the rate of student participation. More importantly, the use of *Twitter* created an interactive environment in which students were involved in instruction in a learning community. Van de Bogart and Wichadee (2015) investigated the efficiency of *Line* as a social network site. They suggested that its use enhanced collaborative learning in the classroom and the majority of students held positive attitudes towards *Line* and its use for their learning.

Iranian EFL researchers and experts have shown tremendous interest in the integration of technology in EFL learning (Dashtestani, 2016). A few studies have been directed towards the use of social network sites in the Iranian EFL context (e.g. Khany & Monfared, 2013; Mohammadkhani, Mazinanai, Zandvakili, & Fard-Kashani, 2015; Qarajeh & Abdolmanafi-Rokni, 2015). The results of these studies illustrated that the use of SNSs can contribute to Iranian students' language learning in terms of improving their oral proficiency, promoting their attitudes towards language learning, and fostering their motivation and self-efficacy.

3. The study

3.1. The aims of the study

While previous research has mainly focused on EFL learning contexts, this study aimed to examine the effect of SNSs in EAP contexts. Furthermore, unlike previous research which included only one single social networking site in its analysis, this study analyzed EAP students' perceptions of the use of three distinct SNSs. *Facebook*, *ResearchGate*, and

LinkedIn are commonly used by a large number of Iranian university students (Batooli & Nazari, 2014; Khany & Monfared, 2013; Mohammadkhani et al., 2015; Moeinmanesh & Rezvani, 2015; Yaghoobi Malal, 2014). This study also sought cross-disciplinary variations in the use of SNSs in the EAP context of Iran. Alavi and Dashtestani (2014) argued that there exist cross-disciplinary variations in students' attitudes towards and use of technology in EAP instruction. Therefore, studies on the use of specific types of technologies in EAP instruction should take into account these variations and provide explanations for them. To achieve the aims of the study, four specific research questions were formulated:

1. What are the attitudes of EAP students from the three disciplines towards the use of collaborative projects carried out in three social network sites for learning EAP? Is there any significant difference among their perceptions?

2. What are the attitudes of EAP students from the three disciplines towards the limitations of the use of collaborative projects carried out in three social network sites for learning EAP? Is there any significant difference among their perceptions?

3. What are the attitudes of EAP students from the three disciplines towards the factors which can affect the use of collaborative projects carried out in three social network sites for learning EAP? Is there any significant difference among their perceptions?

4. What are the preferences of EAP students from the three disciplines for the type of social network sites which can be used for collaborative projects? Is there any significant difference among their perceptions?

3.2. Participants

Three groups of students participated in this study. These students enrolled in an EAP course and were at a Bachelor of Science/Art level. The students had an age range of 20-24 and were all male. Specifically, three classes, including 54 students of agriculture engineering (engineering discipline), three classes, including 62 students of biology (basic sciences discipline), and three classes, including 57 students of sociology (social sciences discipline), participated in the study. All of these students attended the interview and questionnaire study. They were randomly selected from a state university in Tehran, Iran. Moreover, to ensure the participants' homogeneity of general English proficiency, a TOEFL iBT test was administered to the participants and those whose scores ranged between 60-93 (*competent users* according to ETS) were chosen to participate in the study. Those students whose scores were lower or higher than this range were not considered for the study. All these participants were users of SNSs, including *ResearchGate*, *LinkedIn*, and *Facebook* with an average of 3.4

years of using at least one SNS or were instructed on how to create an account on each SNS at the time of carrying out the study. To ensure the ethical aspects of the study, an informed consent form was submitted to all participants. Those students who had not used any SNSs at the time of the study or before that were not included (Table 1).

Three teachers who participated in the study were EAP teachers who were PhD holders of applied linguistics. They had an average of 4.3 years of EAP teaching experience. Their average age was 37.4. All the teachers mentioned that they used *ResearchGate*, *LinkedIn*, and *Facebook* quite frequently (Table 2).

Table 1. Students participating in the study

Participants	Number	Age	Instruments used
Students of Agriculture Engineering	54	20-24	Interviews+ Questionnaires
Students of Biology	62	20-24	Interviews+ Questionnaires
Students of Sociology	57	20-24	Interviews+ Questionnaires

Table 2. Teachers participating in the study

Number of Teachers	Average years of teaching	Average age	Average years of using SNNs
3	4.3	37.4	4.1

3.3. Method

A mixed-methods study was considered in order to collect the data and answer the research questions. Two instruments, i.e. a questionnaire and semi-structured interviews, were used to collect quantitative and qualitative data from three groups. The specific purposes of using a mixed-methods design was to triangulate the findings obtained from the questionnaires and the interviews. Long (2005) emphasizes that triangulation of various approaches, instruments, and instruments can increase the validity of the findings. Moreover, both supplementary and confirmatory data were collected which contributed to a more comprehensive and accurate understanding of the problem under investigation.

The study lasted for a whole semester, i.e. four months. Three classes of each discipline (nine classes in total) were included in the study. Three EAP teachers (each responsible for three classes) participated in the study. All three EAP teachers had three

briefing sessions to get acquainted with the aims and focus of the study and how to make students motivated to take part in the project. At these briefing sessions, the teachers were consulted in how to use the SNSs related to the study through a manual along with face-to-face meetings with the researcher. The students were introduced to the three SNSs at the beginning of the semester. The students were guided how to build a new profile for themselves and how to add their academic information to their profiles. Afterwards, the students were assigned to groups of 6 or 7 and were asked to do a collaborative project on one academic topic that was selected by the teachers and students. Two marks (out of the total of 20) of the final score of the students were allocated to conducting the project based on continuous assessment of the teacher of students' reports of the progress of the project. Some criteria were considered for writing the reports, including a brief explanation of the strategies that they adopt to do the project, language items they learned through the use of the SNSs, things they learned about their academic content, and the problems they faced during carrying out the project. The students were also invited to do the project in the classroom with the help of the teacher 45 minutes each week in the classroom. The teacher was also online on *Facebook* for one hour twice a week at a specific time to help students with the project and the questions that they had. For each session of the class, the students were supposed to provide a report on their progress of the project. At the end of the course, the students were invited to provide the teacher with a detailed research report of what they had done and what they had learned about the academic topic. The students could join academic discussions, find academic groups, find international peers, interact with their classmates, and find scholars from other countries. All the students used English when chatting/speaking/writing on the SNS with their peers, the teacher, and other international academic users.

3.4. Instruments

3.4.1. Questionnaires

The first instrument of the study was a questionnaire to examine the attitudes of the three groups of students of the use of SNSs in learning EAP. The survey was constructed based on the analysis and review of previous studies concerning the use of social networking in language learning and educational contexts (Álvarez Valencia, 2015; Hsu, 2013; Özmen & Atıcı, 2014; Toetenel, 2014; Veletsianos & Navarrete, 2012; Yen, Hou, & Chang, 2013). In order to ensure the content validity of the questionnaire, several consulting sessions were held with a panel of three professors of EAP, four professors of EFL, and three content professors who commented on the suitability of the items for the purposes of the study. The panel was

given checklists and was asked to provide qualitative comments on the questionnaire items. In addition, initial interviews were conducted with 30 students from the three disciplines in order to provide insights for developing the questionnaire items.

The questionnaire had four sections with closed and open-ended items. The first section (Cronbach's alpha= 0.83) was developed to investigate EAP students' attitudes towards the benefits and merits of collaborative SNS project. The second section (Cronbach's alpha= 0.89) sought EAP students' perceptions on the limitations of the collaborative SNS project. The third section (Cronbach's alpha= 0.81) explored EAP students' perceptions of language-related, teacher-related, and project-related factors which affected the use of collaborative projects on three social network sites for learning EAP. The last section included three items in which the students were asked to rate the usefulness of the three types of SNS on a rating scale from 1 to 10 based on their preference. Also, there were three open-ended items in which the students were asked to write the reasons for their rating of each item. The language of the questionnaire was Persian.

3.4.2. Semi-structured interviews

To triangulate the results of the questionnaires, interviews were also carried out in this study. The interview questions were designed based on the items included in the questionnaires. To establish the content validity of the interview, a panel of three professors of EAP, four professors of EFL, and three content professors evaluated the appropriateness of the questions for the purposes of the study. The questions were also piloted with a similar group of participants prior to the study. These participants did not participate in the main study though. Each interview lasted 30-45 minutes. The same ethical issues were considered and explained to the participants of the interviews as well. Specifically, the following questions were developed and formulated:

1) How do you feel about the collaborative SNS project?
2) What do you think are the benefits of the collaborative SNS project?
3) What do you think are the limitations of the collaborative SNS project?
4) What do you think are the factors that affect the use of the collaborative SNS project?

3.5. Data analysis

The data of the questionnaires were analyzed and means and standard deviation were provided for the responses of the students to each item of the questionnaire. SPSS 16 was used for the data analysis. The non-parametric test of Kruskal Wallis was employed to

identify any significant difference among the perceptions of the three groups of students. The interview data were analyzed using content analysis. Based on a coding scheme, two coders who were experts of coding interview data coded the data and reported the common themes. A coding consistency of 0.85 was achieved which was satisfactory.

3.6. Findings

3.6.1. EAP students' attitudes towards the collaborative SNS project

As Table 3 indicates, the majority of EAP students from different disciplines had positive attitudes towards the collaborative SNS projects. The students agreed or strongly agreed with several benefits of the collaborative SNS projects such as promoting academic English proficiency, enhancing students' motivation to learn academic English, promoting general English proficiency, possibility of international communication, opportunity for joining academic groups, teacher's support, peer collaboration, online chatting with teachers and students, and ease of use. Furthermore, there was no significant difference between the students' attitudes in general.

Table 3. Questionnaire results for EAP students' attitudes towards the collaborative SNS project

Questionnaire items	Participants	Mean	SD	p
The use of SNSs promoted my academic English knowledge.	SE	4.05	0.73	0.193
	SBS	4.1	0.71	
	SSS	4	1	
The use of SNSs enhanced my motivation to learn academic English.	SE	4.20	0.75	0.084
	SBS	4.17	0.79	
	SSS	4.21	1	
The use of SNSs promoted my general English knowledge (GEP).	SE	4.09	0.77	0.101
	SBS	4.26	0.54	
	SSS	4	0.98	
The use of SNSs provided me with international communication with other students.	SE	4.31	0.86	0.095
	SBS	4.54	0.37	
	SSS	4.32	0.92	
Joining academic social networking groups was effective.	SE	3.91	0.99	0.071
	SBS	4.1	1.31	
	SSS	4.17	0.88	
The teacher's support during doing the project was effective.	SE	4.28	0.88	0.067
	SBS	4.42	0.37	
	SSS	4.37	0.69	
Collaborating with other members of the group was necessary to conduct the project	SE	3.96	1.32	0.112
	SBS	4.2	0.91	
	SSS	4.01	0.8	
Joining academic groups and discussions on SNSs was effective for doing the project.	SE	4.14	0.69	0.058
	SBS	4.09	1	
	SSS	4.1	0.91	

Online chatting with classmates in English helped me to improve my English.	SE	4.19	1.29	0.121
	SBS	4	1.20	
	SSS	4.05	1.1	
There were a large number of academic English resources on the SNSs.	SE	4.03	0.94	0.000*
	SBS	3.79	1.32	
	SSS	2.66	1.04	
The use of SNSs for learning academic English is easy.	SE	4.5	1.2	0.090
	SBS	4.09	0.88	
	SSS	4.22	1	
Online chatting/communicating in English with the teacher helped me improve my English.	SE	4.44	0.91	0.077
	SBS	4.30	0.85	
	SSS	4.19	0.40	

Note: statistical significance level was set at p ≤ 0.05.
Note: SE: students of engineering; SBS: students of basic sciences; SS: Students of social sciences
Note: Likert scales: 1. Strongly disagree; 5. Strongly agree

As Table 4 shows, the triangulated results of the interviews regarding the attitudes of EAP students' attitudes towards the collaborative SNS project revealed that the students held positive perspectives on the collaborative SNS project. The benefits of the project which were reflected in both questionnaires and interviews included opportunities for having international communication, learning academic vocabulary, peer collaboration, teacher support, and opportunities for improving academic English and academic literacy.

Table 4. Interview results for EAP students' attitudes towards the collaborative SNS project

Interview Themes	Students	Percentage of the mentioned theme	Student quotations
Opportunities for having international academic communication	SE	85%	This was the first time I had the experience of communicating with other people who study the same major in other countries. This was a very great experience for me and made me more interested in my major and academic English learning. (Student of Engineering 11)
	SBS	90.32%	
	SS	87.21%	
Learning a great number of academic words in English	SE	75.9%	One major benefit of this project work was that I knew a lot of new academic English vocabulary. In order to communicate in English, I had to check academic words or ask my teacher or other group members to help me. I learned many words!" (Student of Basic Sciences 37)
	SBS	79.03%	
	SS	82.45%	
Collaborating with other group members	SE	72.22%	This was the first time I had collaboration with my classmates so seriously. We helped each other a lot and learned from each other. (Student of Social Sciences 30)
	SBS	80.64%	
	SS	70.18%	

Promoting both academic English and academic literacy	SE	83.33%	I liked the project because we could improve both our knowledge of academic English and knowledge of our academic subjects.
	SBS	87.1%	
	SS	73.21%	
			(Student of Basic Sciences 20)

3.6.2. EAP students' perceptions on the limitations of the collaborative SNS project

As Table 5 illustrates, the EAP students did not point out specific limitations of the project in the questionnaires. The most important limitations which were reflected in the questionnaire included the lack of subscription to SNSs and low English knowledge to use the SNS for academic purposes. Concerning the other limitations, the students were undecided on the importance of the limitations.

Table 5. Questionnaire results for EAP students' perceptions of the limitations of the collaborative SNS project

	Participants	Mean	SD	p
The cost of connecting to the Internet	SE	3.19	0.81	0.110
	SBS	2.89	1.06	
	SSS	3.2	1.14	
Lack of subscription to the social network sites	SE	4.03	0.93	0.080
	SBS	4.14	0.87	
	SSS	4.31	0.72	
Lack of time to do the project	SE	3.1	0.8	0.092
	SBS	2.87	0.72	
	SSS	3.37	1.19	
Disinterest in working in groups	SE	1.32	0.54	0.088
	SBS	2.13	0.59	
	SSS	2.25	0.96	
Unsuitability of SNSs for academic purposes	SE	2.56	0.58	0.013*
	SBS	1.76	1.1	
	SSS	2.95	0.6	
Lack of teacher's help	SE	2.67	0.57	0.038*
	SBS	1.94	0.9	
	SSS	2.14	0.79	
Low English proficiency to use SNSs for academic purposes	SE	4.15	0.61	0.573
	SBS	3.99	1.04	
	SSS	4	1	
Low digital literacy levels to use SNSs for academic purposes	SE	3.29	0.86	0.000*
	SBS	2.76	0.37	
	SSS	2.2	0.92	

Note: statistical significance level was set at $p \leq 0.05$.
Note: SE: students of engineering; SBS: students of basic sciences; SS: Students of social sciences
Note: Likert scales: 1. Strongly disagree; 5. Strongly agree

As Table 6 reveals, the triangulated data of interviews and questionnaires indicated that low levels of academic and general English proficiency and the lack of knowledge about academic vocabulary were the most significant limitations.

Table 6. Interview results for EAP students' perceptions on the limitations of the collaborative SNS project

Interview Themes	Students	Percentage of the mentioned theme	Student quotations
The lack of knowledge about academic words	SE SBS SS	57.41% 66.13% 61.40%	When I was doing the project I had to search and ask for some academic English words. I feel It was a bit hard and at times Boring. But I am happy that I Learnt a lot of new words Now." (Student of Engineering 48)
Low levels of English knowledge	SE SBS SS	79.62% 87.09% 77.19%	I had some difficulty using English suitably. Of course, I think I am not weak at English but I need to improve my English to use SNSs more easily. (Student of Social Sciences 51)

3.6.3. Factors which affected the use of collaborative projects on three social network sites for learning EAP

Table 7 illustrates that the students agreed that factors such as teachers' support, academic and general English proficiency, collaboration with peers, academic content knowledge, peer support, and digital literacy were significant ones which affected the use of collaborative projects on three social network sites for learning EAP. However, the students did not agree on the importance of factors such as the score of the project or their interest in the project.

Table 7. Questionnaire results for factors which affected the use of collaborative projects on three social network sites for learning EAP

	Participants	Mean	SD	p
Teacher support/help	SE SBS SSS	4.57 4.36 4.68	0.97 0.84 0.78	0.101
Academic English proficiency	SE SBS SSS	4.05 4.21 4.09	0.59 0.83 1.09	0.096
General English proficiency	SE SBS SSS	4.33 4.41 4.26	1.13 0.8 1.22	0.134
Collaboration with peers	SE SBS SSS	4 3.89 4.11	0.94 1.27 1.10	0.061
Academic content knowledge	SE SBS SSS	4.47 4.23 4.32	0.61 0.72 0.83	0.205
Peer support/help	SE SBS SSS	4.16 3.84 3.91	1.2 0.98 1.31	0.060
Your digital literacy	SE SBS SSS	3.92 4 3.98	1.39 1.08 0.91	0.058
The score of the project	SE SBS SSS	3.55 2.19 2.58	1.2 0.98 1.31	0.021*
Your interest in the project	SE SBS	3.45 3.2	1.2 0.98	0.047*

SSS	2.88	1.31	

Note: statistical significance level was set at p ≤ 0.05.
Note: SE: students of engineering; SBS: students of basic sciences; SS: Students of social sciences
Note: Likert scales: 1. Least important; 5. Most important

The interview data supported parts of the questionnaire data. The students from the three disciplines asserted that knowledge of academic, general English and academic content, teacher support, familiarity with the SNS, and ease of use were factors which affected their project work (Table 8).

Table 8. Interview results for EAP students' attitudes towards the collaborative SNS project

Interview Themes	Students	Percentage of the mentioned theme	Student quotations
Knowledge of academic and general English	SE SBS SS	88.88% 79.03% 87.03%	It is obvious that English knowledge is a very important requirement for doing projects like this one. Also, it is important to know how to use English in an academic manner. (Student of Social Sciences 23)
Academic content knowledge	SE SBS SS	87.04% 85.48% 77.19%	Certainly, you must be knowledgeable about the topics related to your major in order to be able to discuss academic topics at an international level. (Student of Basic Sciences 37)
Teacher support in social networking	SE SBS SS	68.51% 77.42% 66.67%	I appreciate my teacher because he was very positive during the project work. We were in touch both online and in the class and he motivated a lot. (Student of Engineering 3)
Familiarity with the SNS used	SE SBS SS	59.38% 64.51% 68.42%	I think we use some SNSs less frequently than the other ones, so we are more comfortable to use the ones that we know and use everyday. The ones that we do not use frequently are harder to be used. (Student of Social Sciences 45)
Ease of use	SE SBS SS	57.41% 54.84% 64.91%	The most important factor is how easy it is to use the SNS. Some of them are very boring and hard to be used. (Student of Social Sciences 17)

3.6.4. Students' preference for *Facebook*, *LinkedIn*, or ResearchGate

Based on the values shown on Tables 9 and 10, the majority of students from the three disciplines perceived *Facebook* as the most preferable learning tool. There was not a significant difference among the perceptions of the three groups of students on the use of *Facebook* for EAP learning.

Table 9. Questionnaire results for students' preference for *Facebook*, *LinkedIn*, or *ResearchGate*

		Rating (out of 10)	p
Facebook	SE	8.45	0.085
	SBS	6.76	
	SS	7.2	
LinkedIn	SE	4.9	0.021*
	SBS	5.87	
	SS	3.33	
ResearchGate	SE	2.67	0.010*
	SBS	2.01	
	SS	3.41	

Note: statistical significance level was set at $p \leq 0.05$.
Note: SE: students of engineering; SBS: students of basic sciences; SS: Students of social sciences

Table 10. Questionnaire results for open-ended items on students' preference for *Facebook, LinkedIn,* or *ResearchGate*

Facebook

Themes from the open-ended items of the questionnaire

The majority of students from different disciplines believed that *Facebook* was the most appropriate SNS for learning academic English. The students asserted that *Facebook* was easy to be used, free to be used, and richer in terms of its groups, and topics. The possibility of having online chat and synchronous computer-mediated communication (SCMC) was another significant benefit of using *Facebook*. The students also mentioned that *Facebook* was user-friendlier than the other SNSs.

LinkedIn

Themes from the open-ended items of the questionnaire

The majority of students from different disciplines were of the opinion that *LinkedIn* was more reliable source regarding its academic content, but needed fees for subscription and people on *LinkedIn* were not as active as people on Facebook.

ResearchGate

Themes from the open-ended items of the questionnaire

Many students reported that *ResearchGate* was interesting and comprehensive regarding its academic content. However, the students reported that they were less familiar with working with *ResearchGate* and that it was hard to get in touch with friends via *ResearchGate*.

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4. Discussion and conclusion

This study aimed to present a cross-disciplinary analysis of the collaborative use of SNSs in EAP learning. The general results indicated positive attitudes towards the collaborative projects on SNSs. The results show that there was not a significant difference among the attitudes of the participants towards the collaborative projects on SNSs. The triangulated data illustrated that the majority of the students from the three disciplines perceived some benefits

of the collaborative projects on SNSs, including opportunities for having international communication, learning academic vocabulary, peer collaboration, teacher support, and opportunities for improving academic English and academic literacy. The positive attitudes of students towards the use of SNSs in educational contexts were also echoed in previous studies (Hsu, 2013; Kikuchi & Otsuka, 2008; Millington & Smith, 2012; Liu et al., 2015). It is crucial that educational planners and course designers be aware of the potential benefits of social networking on EAP students' learning and attitudes towards learning. The issue of collaborative projects appeared to be a key one which had a significant effect on students' attitudes towards the use of social networking in EAP learning. Liu et al. (2015) also reported that the use of social networking in the classroom can foster students' levels of collaboration. Ping and Maniam (2015) considered social networking as an efficient tool for encouraging students to have group work.

One major benefit of the project was that the students were enabled to have international communication with other academic members. This was a merit of the project which was reflected in the results of the interviews and questionnaires. The students had also positive attitudes towards having collaboration with the other members of their group. Furthermore, the project was an opportunity to promote both academic knowledge and academic English knowledge. The students perceived that their academic English vocabulary knowledge fostered. It can be concluded that collaborative projects on SNSs can be an influential tool for creating an interactive learning environment in which both students' English proficiency and academic literacy can be enhanced. It is paramount that Iranian educational decision makers and even teachers consider SNSs as learning aids which can have a number of benefits for students. As EAP instruction is a learner-centered approach, academic collaborative projects on SNSs can encourage students to have personalized learning in which different learning styles, needs, and preferences are taken into account.

Concerning the limitations and constraints of the collaborative projects on SNSs, there was no consensus among the perceptions of students and in some cases they did not perceive many constraints. The two important limitations were students' low knowledge of academic vocabulary and English which caused difficulty for some of them. In the questionnaire the students also perceived that they were not subscribed to the SNS, which created problems for them. Despite these issues, many other limitations were perceived to be non-existent during the conduction of the project. High levels of academic English vocabulary knowledge may be a considerable facilitator for EAP students. Similarly, students need to be competent English users if they want to have international communication and be socialized into academic

communities of practice. This issue implies that educational authorities should adopt effective strategies in order to help students promote their academic vocabulary knowledge and academic English.

The findings suggested that several factors can have an effect on students' collaborative projects on SNSs. Based on triangulated results, these perceived factors include academic and general English knowledge, academic content knowledge, teachers' support, familiarity with the SNS, and ease of use. Ease of use is a very significant factor which was also reported in Liu et al. (2015). It appears that students look for technologies which are easy to use. This study also introduced teacher supervision and cooperation with students during doing the projects. As the students perceived, teachers can regulate students' activities on SNSs and motivate them to continue the projects.

The results showed that the students preferred using *Facebook* for academic purposes. This preference may directly be associated with the issues of student familiarity and ease of use which were discussed previously. One feature of *Facebook* which was lacking in *ResearchGate* and *LinkedIn* was the opportunity for having SCMC and online chatting with the teacher, peers, and other academic members. The possibility of online chatting enables students to be connected to each other without delays and to ask for help. Based on the results of this study, it can be concluded that teachers should take students' preferences into account when they assign SNS-based projects to students.

One limitation of this study is associated with the long time of the conduction of the study. Many students were not able to take part in the study due to its long time. Moreover, despite the attempts to familiarize students with the educational application of the three SNSs, some interview quotations showed some students lacked familiarity with the features and aspects of the SNSs used in this study.

Further research should be undertaken into the learning outcomes of using SNSs for EAP instruction. Without further insights into the use of SNSs in EAP and educational contexts, many factors related to the educational use of SNSs will remain unknown. In addition, it is important to direct future research towards the potential of SNSs in order to facilitate the learning of different language skills and academic genres in ESP and EAP instruction.

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