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Learning in the Digital Era: Science Education Students' Perception on the SNSs Use in the Context of English for Specific Course

Dijital Evrede Öğrenme: Fen Bilgisi Öğretmen Adaylarının İngilizce Bağlamında Sosyal Ağların Kullanımına İlişkin Algıları

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Abstract. Social Networking Services (SNSs) have influenced many aspects of life, including education and English as Foreign Language (EFL) teaching. Many studies have shown various kinds of SNSs applied in foreign language pedagogy. However, the research on the integration of SNSs in English for Specific Purposes (ESP) is limited. We collaborated with three lecturers of ESP who used Facebook, WhatsApp, and Youtube when they taught 8 classes of a science education program in one higher education institution in Indonesia. This mix-method study, survey and interview, explored the use of SNSs for both educational purposes, especially English for specific purposes. There were 311 respondents for the survey and 8 participants for the interview. The findings of this research showed that most participants were familiar with various kinds. This study also informed the high Mean (*M*) of positive statements regarding the use of SNSs in ESP course for science education students. There were more benefits than problems informed in the interview sessions reflecting that SNSs have potential impacts to improve higher education especially in foreign language classes. Some implications for instructors, policy makers, and researchers are recommended.

Keywords: English for specific purposes, science education students, social networking services

Öz. Sosyal Ağ Servisleri (SAS), eğitim ve Yabancı Dil Olarak İngilizce (EFL) öğretimi de dahil olmak üzere, yaşamın birçok yönünü etkilemiştir. Birçok çalışma yabancı dil pedagojisinde uygulanan çeşitli SAS türlerini göstermiştir. Bununla birlikte, SAS'ların Özel Amaçlar için İngilizce'ye (ESP) entegrasyonu ile ilgili araştırmalar sınırlıdır. Endonezya'daki bir yükseköğretim kurumunda 8 sınıf fen bilgisi programı dersinde Facebook, WhatsApp ve Youtube'u kullanan üç ESP öğretim görevlisi ile işbirliği yapılmıştır. Bu karma yöntem araştırmasında, anket ve görüşme tekniği kullanarak SAS'ların her iki eğitim amaçlı, özellikle de İngilizce, belirli amaçlar için kullanımını araştırıldı. Ankete 311, görüşmeye ise 8 katılımcı katıldı. Bu araştırmanın bulguları, katılımcıların çoğunun çeşitli türlere aşina olduğunu göstermiştir. Bu çalışma aynı zamanda fen bilgisi öğrencileri için ESP kursunda SAS kullanımı ile ilgili pozitif ifadelerin yüksek Ortalamasını (*M*) elde etmiştir. Görüşme oturumlarında, SAS'ların özellikle yabancı dil derslerinde yüksek öğretimi geliştirmek için potansiyel etkileri olduğunu yansıtan sorunlardan daha fazla yarar sağlandı. Öğretmenler, politika belirleyiciler ve araştırmacılar için bazı öneriler yapılmaktadır.

Anahtar Sözcükler: Belirli amaçlar için İngilizce, fen eğitimi öğrencileri, sosyal ağ servisleri

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INTRODUCTION

Higher education institutions have strong pressure to revolutionize their system due to the change of the world in terms of globalization and technology development (Ernst & Young, 2012). In their reported research result about the future of higher education institutions, Ernst and Young (2012) have a prediction that even though the digital revolution will not eliminate campus-based universities, it will revolutionize how the stakeholders deliver and support the process of education and the way the institutions produce value and system. One of the many technologies widely used by academics and students around the world is Social Networking Sites or SNSs.

SNSs are popular internet-based technology defined as a platform that allows users to create a public profile and interact with other users on the website (Social Networking Site, 2016) signed by four properties: searchability, persistence, replicability, and invisible audiences (Boyd & Ellison, 2008). An overview from Robb and Singger (2014) show a short explanation of kinds and examples of SNSs: microblogging (Facebook, Twitter, Google Plus, Path,), blogging (Tumblr, Blogger, Wordpress), messaging (WhatsApp, BBM, Telegram) images sharing (Instagram, Snapchat, Pinterest), videos sharing (Vine, Youtube), audios sharing (iTunes, Sticher), professional sharing (LinkedIn), academic sharing (Google Scholar, Academia, Resarchgate).

Even though the purpose of SNSs establishment in early years was as social media for the users, their use in education has now become popular (Manca & Ranieri, 2013, 2016). There have been increasing studies in education focusing on the uses of SNSs (Manca & Ranieri, 2013, 2016). These studies demonstrated that SNSs can be used successfully in many ways by educators (Callaghan & Bower, 2012). For instance, SNSs could establish the interaction between students and their teachers which can easily have mutual communication and can be utilized for both informal and formal education (Madge, Meek, Wellens, & Hooley, 2009).

In addition to the development of SNSs in education, they also become an interesting topic for foreign language pedagogy researchers to conduct research in this area because they can become educational tools within the framework of foreign language teaching and learning. (Fewell, 2014; Kaplan & Haenlein, 2010). Mondahl and Razmita (2014) stated that foreign language learning is considered as a collaborative and individual process of learning which can be facilitated through SNSs. SNSs have been widely used in supplementing language learning since they have eliminated the physical response with the offer of limitless opportunities for communication (Fewell, 2014).

Even though the use of SNSs has been a popular research object in foreign language pedagogy, the research on this issue in ESP world is limited (Pérez-Sabater & Montero-Fleta, 2015; Kavaliauskienė, 2011) because most ESP practitioners and researchers put in the first place the curriculum designing and material development as their main concern (Belcher, 2006; Peters & Fernández, 2013). Considering those facts, we conducted this study aiming to examine the use of SNS for both ESP teaching and learning purposes and general purposes in one higher institution in South Sumatra, Indonesia. This study was conducted to answer the following research questions:

1. What are the popular SNSs for science education students?
2. What and how are science education students' perceptions on the use of SNSs in ESP course?

LITERATURE REVIEW

Today's young people are digital natives who are also called millennial generation. These millennials are individuals born between 1980 and 1999 and had a higher degree in schools than the previous generation (Seppanen & Gualtieri, 2012). These digital natives have been growing with technology in their homes and always count on technology devices to gather information. SNSs have a most portion of various uses and functions in their daily lives (Hesel & Williams, 2009). Many of them consider SNSs as their main sites to use and browse them many times a day (Lim & Richardson, 2016). SNSs defined as any media allowing people to communicate and interact with other people. the term "SNSs" is narrowed to be a set of networked tools (internet)

as a medium of communication to build their profile, sharing images, text, photos, and videos (Boyd & Ellison, 2008; Davis, Bagozzi & Warshaw, 2012; Pfeil et al., 2009; Tapscott, 2008).

SNSs in Education

According to Akçayır and Akçayır (2016), Junco et al. (2011), Lim and Richardson, (2016); Prasojo et al., (2017), Khan et al. (2014), and Wang, Woo, Quek, Yang, and Liu (2012), Facebook is the most SNS used in education that have more than 1.65 billion users. Twitter and Youtube are the second popular SNSs used in education (Akçayır, Akçayır, 2016). Fox and Varadarajan (2011) and Pervaiz (2016) defined Twitter as a sort of micro blogging that creates a combination between instant messaging and blogging. With its features, Twitter facilitates public dialogues compare to other SNSs namely Facebook, Youtube, Instagram, and WhatsApp (Junco et al., 2011). YouTube is another resource that is widely used in education (Akçayır, 2017) which is a vast video resource providing people with information, entertainment, and sharing facility. Apart from those SNSs, there are still many applications used by educational stakeholders such as WhatsApp (Habibi et al., 2018), BBM (Rooyen, 2015), and Instagram (Rangingwala & Towbin, 2017).

In higher education, the vast research on the use of SNSs has significantly increased (Brady, Plcomb, & Smith, 2010; Habibi et al., 2018; Jones, Ramanau, Cross, & Healing, 2010; Tess, 2013). Tess (2013) held a literature review on SNSs studies and found that most studies investigated student achievements and learning outcomes related to the use of SNSs in higher education. Habibi et al. (2018) informed that the advantages of SNSs use in one Indonesian higher education institution were to facilitate peer discussion and as a platform to interact with supervisors or lecturers. Another study by Brady et al. (2010) revealed that there are positive students' perceptions of the capacity of Ning (a kind of SNSs) to make communication with other students more possible than face-to-face delivery, to interact with peers outside of class, and to make reflection and comments on peers' work. However, there were also negative findings in the use of SNSs like findings revealed by Jones et al. (2010) suggesting that students did not frequently use SNSs for educational purposes. Tess (2013) concluded that there was no sufficient research evidence to have definite statements if SNSs were an efficient software solution for the higher education.

SNSs in Foreign Language Learning

In foreign language teaching, many studies have considered and acknowledged that the SNSs use (micro blogging, blogging, massaging, images sharing, and video sharing) have great contribution to the teaching (Kabilan, Ahmad, & Abidin, 2010; Bondahl & Razmerita, 2014; Prasojo, Habibi, Mukminin, Muhaimin, Ikhsan, Taridi, & Saudagar, 2017; Suthiwartnarueput & Wasanasomsithi, 2012). Facebook, as the most popular micro blogging and SNS, has been used as a tool to improve writing skills, promote students-students' interaction, and develop a sense of belonging (Prasojo, 2018). In other studies, Kabilan et al. (2010) revealed that students have positive attitudes towards the use of Facebook in foreign language learning. In addition, Twitter was seen to have beneficial effects on the learning community to help maintain students' motivation and learning routines and promote social cohesion (Fewell, 2014).

Wikis are online publishing media aimed at sharing knowledge which allows users to edit the pages and have been integrated into foreign language courses reported by Zorko (2009), Kessler (2010), dan Chik and Breidbach (2011). Zorko (2009) informed that Wikis were proven to improve students' collaboration in language learning in effective ways of an ESP classes. Through Wikis, students' willingness to join in learning collaboration was considered high on the content and low on the language structures (Kessler, 2010). The combination uses of Wikis, Facebook, and Skype can be a useful platform to create multimodal texts (Chik & Breidbach, 2011).

Technology in ESP Classes

The application of technology in ESP pedagogy transformed ESP teachers' role informed in the literature of the subject (Dudley-Evans & St John, 2009). In accordance with this situation, the scope of ESP practices has been beyond the traditional ESP classroom for the implementation of

various technological affordances (Lesiak-Bielawska, 2015). Technology, especially SNSs considerably supports the ESP practitioner in the process of teaching and learning processes since it provides appropriate tools and space for assessment delivery, discussion facilitation, and creative learning establishment (Pérez-Sabater & Montero-Fleta, 2015; Kavaliauskienė, 2011). In addition, the ESP teacher's work can be supported with the use of technology, either at the phase of needs analysis or when assessing the effectiveness of the teaching. Finally, the use of technology is also crucial in building collaboration of the ESP teachers (Arnó-Macía, 2012).

METHOD

We used a mix-method study (Creswell & Clark, 2007) to examine the phenomenon within its context using various sources of data and to develop the reliability and validity of the findings (Borrego, Douglas, & Amelink, 2009; Mukminin et al., 2017). Through this method, we examined the use of SNSs for both ESP teaching and learning purposes and general purposes in one higher education institution in South Sumatra quantitatively and qualitatively. The study was conducted from August 2017 to June 2018 with science education students.

In a mix-method study, multiple data collection methods, such as observation, interviews, document analysis, and questionnaires are important (Patton & Appelbaum, 2003). Therefore, we used two primary sources of data, questionnaire and semi-structured interviews. Saunders et al. (2007) argued that the method for data collection is linked to research approaches adopted. The two data collection methods are useful to provide detail information needed for this study.

We collaborated with three lecturers teaching English for science education in eight classes with 334 students who were in their first year of their study or at the beginning of their academic year. However, merely 311 students (75 males and 236 females) aged 18-23 (see Table 1) completed the survey questionnaire. The participants were allowed to decline their participation. This study was conducted from June to October 2017. Prior to the course, we had a meeting to discuss the use of SNSs in their teaching and learning process. All lecturers assigned by the faculty were accustomed to using SNSs for educational purposes. On the meeting, they stated that they used Facebook, WhatsApp, and Youtube in their ESP course.

Table 1. Respondent information

Variables	Sub-variable	The respondents (N. 311)
		F (%)
Gender	Male	75 (24.12%)
	Female	236 (75.88%)
Age	17-18 Years	150 (48.23%)
	19-20 Years	135 (43.41%)
	21-22 Years	24 (7.72%)
University level	Junior	143 (45.98%)
	Sophomore	141 (45.34%)
	Senior	27 (8.6%)

This study adapted the instruments of SNSs use developed by Lim and Richardson (2016) to fit with SNSs context. Validity evidence was provided by content validity where an expert panel composed of six faculty members specializing in English translation and ICT education conducted a content review of the survey and with suggested adaptations. Lim and Richardson (2016) originally established the SNSs survey. The questions were made more specific in this study in relation to the ESP course. For example, 'Using SNSs for educational purposes would be convenient', was changed to 'Using SNSs for educational purposes in ESP was convenient'. In this study, 17 questions that were not relevant to its objectives were removed. The final survey was composed of 23 questions (see Table 2). Administration of the survey found its overall reliability to be good, Cronbach's alpha .89

Table 2. Information about SNSs survey questions

Sub-categories	Descriptions
Q1-Q2 (Demographic information)	The first section of the survey collected demographic information (age and gender)
Q3-Q6 (general information about SNSs ownership and popularity)	General information on the ownership of SNSs, years of using SNSs, types of SNSs being used (before the ESP course), time spending on SNSs a day
Q7-Q17 (5-point Likert-scale, 1 strongly disagree- 5 strongly agree)	11 questions examining the students' perceptions of using SNSs in ESP teaching and learning. Cronbach's alpha was calculated to be .89 for this study

For the data analysis, we used descriptive statistic using SPSS 22 software. We measured the data's Mean (*M*), and Standard Deviation (*SD*) to further counter or support the qualitative data. Descriptive statistics according to Ross (2010) is summary statistics that quantitatively describes features of a group of information.

It was significant to seek students' opinion in order to better understand the use of SNSs for general purposes and the use of SNSs in ESP course. Therefore, for this purpose, face-to-face semi-structured interviews were held. In the survey, we provide a question "will you be willing to be interviewed about the topic of this research?" From all respondents, it was surprising that merely 6 female students and 2 male students agreed. They (pseudonym) are Carla, Diana, Sinta, Sherly, Jane, and Lane (females) and Clark and Robin (males). Through the criteria sample strategy (e.g., having experiences in using SNSs), we contacted the eight students who were willing to attend the interview with short messages, emails, and phone calls. This interview aimed at gaining in-depth information on the use of SNSs for general purposes and the use of SNSs in ESP course. In general, we had eight major questions and sub-questions that we created based on the questionnaire and literature review related to the use of SNSs for general purposes and the use of SNSs in ESP course (e.g., what are the advantages of using SNSs in ESP course? and How do you use SNSs in ESP course?). We used a semi-structured interview which was applied to comprehend how some interventions work and how they can be improved which allows interviewers to discuss issues that may not be considered (Patton, 2002; Creswell, 2009). Each participant was interviewed three times and each interview lasted from 30-35 minutes in Bahasa Indonesia.

Data collection and data analysis happen in a random manner because they both influence each other (Patton, 2002; Creswell, 2009). The first step we applied was to do what Miles and Huberman (1994) called "within case analysis." After we interviewed the first participant by audio-taping them with our tools, we transcribed verbatim, and carefully analyzed and categorized into the categories (the use of SNSs for general purposes, the use of SNSs in ESP course). This process was continued to be done until the eighth participant. During the processes of analyzing the interview data, all researchers were involved in sharing their comments and suggestions before we made final themes-sub-themes based on participants' interview data. We translated the analyzed data into English before presenting them. The translations from Indonesian into English were helped by four researchers and controlled by one of the researchers who graduated and obtained his PhD from the USA. Second, each of us read each transcript of each participant line-by-line independently, marked relevant chunks of statements, put relevant chunks of statements into the categories. For the ethical considerations and protecting the rights of human participants, we masked through the use of pseudonyms the names of participants and research site (Mukminin et al., 2017). Participants' decision to take part in this study was voluntary as we provided them with an informed consent form.

To ensure the trustworthiness (Lincoln & Guba, 1985) of the study, we included verbatim examples from the transcribed interviews. We also did member checking (Johnson & Christensen, 2008; Creswell, 2009; Habibi et al., 2017). We checked not only with all participants of the interview but also with co-researchers (ESP course lecturers) that served as member checking. In this step, we returned all data of the interview and our findings to all participants in order to get their feedback and agreement. This step was taken for making sure that our data were not bias.

Also, we wanted to make sure that the participants agreed with what we found in this study. All participants of the interview informed that they allowed us to use the data for our study.

RESULTS

Popular SNSs for Science Education Program

Descriptive data for the use of SNSs including ownership of SNS, years of SNSs use, type of SNSs use, and time spent using SNSs (see Table 3). According to the analysis, 100 % of the students reported that they had SNSs account. Majority of the students (46.95%) have used SNSs from 6 years to eight years. Merely 25 students (8.07%) had less than three years of experience using SNSs. WhatsApp was selected as the most widely used SNS with 100% of the students responding that they have an account of WhatsApp. This was followed by Instagram (98.7%) and Facebook (94.85%). We also investigated the time the student spent using SNSs/day which showed that 111 students (35.65%) spent their time using SNSs from two hours until more than 3 hours. Meanwhile, only 21 students (6.75%) use their less than 30 minutes' time a day on SNSs.

Table 3. Science education students' use of SNS (n. 311)

	N	%
Ownership of SNSs		
Yes	311	100
No	0	0
Years of SNSs use		
0-2	25	8.03
3-5	98	31.51
6-8	146	46.95
More than 8	42	13.50
Types of SNSs use		
Instagram	305	98.07
Facebook	295	94.85
WhatsApp	311	100
Line	254	81.67
Youtube	281	90.35
Facebook messenger	213	68.48
BBM	145	46.62
Others	98	31.51
Times spent using SNSs/day		
0-30 minutes	21	6.75
31 minutes -1+ hours	97	31.19
2 hour- 3+ hours	111	35.65
4 hour or more than 4 hours	82	26.37

Science Education Students' Perceptions on the Use of SNSs in ESP Course

Quantitative results

To investigate students' perceptions of the educational use of SNSs in ESP course, we quantitatively calculated the data through descriptive statistics (Table 4) involving Mean (*M*), and Standard Deviation (*SD*). In the survey, we had positive perspective statements (10 items) and negative perspective statements (two items). In addition to the survey, we also explored the use of SNSs in ESP course through qualitative data (see Table 5).

Based on the mean scores, students informed their agreement that using SNSs for educational purposes in ESP was convenient ($M = 4.08$), SNSs supported face-to-face learning in ESP ($M = 4.08$), Using SNSs for ESP course increased motivation to learn English ($M = 4.07$), and using SNSs for class made me feel more connected to my ESP learning community ($M = 4.01$), SNSs was used effectively to share ESP materials ($M = 3.94$), using SNSs as an educational platform in ESP facilitated better rapport with peers ($M = 3.95$), SNSs were an effective way to

collaborate with peers in ESP course ($M = 3.97$), and SNSs were an effective way to communicate with peers for ESP course ($M = 3.96$). one of the items "I felt more comfortable using SNSs as a discussion tool in place of traditional ESP course discussion" was scored ($M = 2.13$) indicating that while the students perceived positively of using SNSs in ESP course, they informed that traditional course could not be replaced by the use of SNSs. The negative items of the survey resulted in lower mean scores. They disagree that SNSs would invade their privacy if their course and SNSs overlapped ($M = 2.32$) and they don't care one way or the other about SNSs being used for their ESP course ($M = 2.25$).

Table 4. *The use of SNSs in ESP course*

Statements	M	SD
Using SNSs for educational purposes in ESP was convenient	4.08	1.00
SNSs supported face-to-face learning in ESP	4.08	1.02
Using SNSs for ESP course increased motivation to learn English	4.07	1.06
Using SNSs for class made me feel more connected to my ESP learning community	4.01	1.12
I felt more comfortable using SNSs as discussion tools in place of traditional ESP course discussion	2.13	1.14
SNSs were used effectively to share ESP materials	3.94	1.12
Using SNSs as an educational platform in ESP facilitated better rapport with peers	3.95	1.08
SNSs were an effective way to collaborate with peers in ESP course	3.97	1.08
SNSs were an effective way to communicate with peers for ESP course	3.96	1.12
I felt that my privacy was invaded when SNSs and my ESP course overlapped	2.32	1.22
I don't care one way or the other about SNSs being used for my ESP course	2.25	1.18

Qualitative

In relation to the use of SNSs in ESP course, we coded the data from the interview into two salient themes (benefits and problems). The students revealed the benefits of SNSs in ESP course in positive statements while they informed the problems they faced in negative responses during the interview (see Table 6). Our analysis and discussion with the students in the interview around the perceptions and the contexts which the benefits they perceived emerged. The analyses of the interview data revealed that four sub-themes emerged as benefits of SNSs used in ESP course; peer discussion, lecturers-students' discussion, self-directed learning, and critical thinking. Peer discussion allows students to be able to share, communicate, and collaborate with each other using SNSs in ESP course while lecturers-students' discussion happened when the students with ESP lecturers interact using SNSs as a platform of communication, discussion, and assignment submission. One of the students, Clark stated that the students had been allowed to contact their ESP lecturers whenever they wanted, to interact with them, and sometimes they asked them about either ESP or English in general. Self-directed learning for the students means that by using SNSs, they were able to learn English by themselves using SNSs as quoted by Diana who informed that she had been motivated by the SNSs use in her ESP course because the lecturer kept informing her decent resources for English learning through SNSs. Due to that reason, she has been now learning English by herself using media like Youtube, Facebook, Twitter, and Skype. The last benefit "critical thinking" is defined as an improvement of the thinking process and analytical ability of the students to perceive things through the use of SNSs.

Regardless of all of those benefits derived from the use of SNSs in ESP course as an educational tool, the interview also revealed the problems faced by the students during the course. There are three interesting sub-themes coded from the interview data; lack of confidence, lack of connection, and costly to use. When some students intend to post some comments and question in English through SNSs in ESP course, they will feel unconfident and be afraid to have wrong grammar or diction. This factor is caused by students' lack of confidence. Sherly had her opinion "When I wanted to send messages to ESP's WhatsApp group, I was afraid of being wrong in grammar or diction". Lack of connection in the context of this study is that the students have lack access of internet connection in their campus and its rooms that one of the students informed

that the internet connection is sometimes unstable and off. The last problem emerged from the interview was “costly to use” revealed by students who had to provide extra payment for the internet access and it relates to the lack of connection situation. In addition, where there was an assignment from the ESP lecturers that they had to finish at home, they had to buy more internet connection fees.

Table 5. Coding themes, subthemes, and sample statements on benefits and problems using SNSs in ESP course

Themes	Sub-themes	Statement
Benefits	Peer discussion	<i>We were requested to share our English with our friends whenever they requested for questions or comments in ESP course through Facebook or WhatsApp group. Similarly, we seek for the other participants to give their comments and questions on ours. We learn from one another. Therefore, SNSs enable sharing to happen more often (Lane).</i>
	Lecturers-students discussion	<i>We were allowed to contact our ESP lecturers whenever we wanted, to interact with them, and sometimes I asked them about either ESP or English in general (Clark).</i>
	Self-directed learning	<i>I was motivated by the SNSs use in my ESP course because the lecturer kept informing me of decent resources for English learning through SNSs. Due to this reason, I am now learning English by myself using media like Youtube, Facebook, Twitter, and Skype (Diana).</i>
	Critical thinking	<i>When I wanted to give comments on a topic of the ESP course through SNSs, I would think of best comments and the best choice of words. It really improved what and how I think of an issue (Carla).</i>
Problems	Lack of confidence	<i>When I wanted to send messages to ESP's WhatsApp group, I was afraid of being wrong in grammar or diction (Sherly)</i>
	Lack of connection	<i>The instability of internet connection in our building and room was a problem when I needed to use the SNSs during the ESP course (Sinta)</i>
	Costly to use	<i>Since we were required to do homework and assignment through SNSs outside the campus, we had to provide extra money to buy internet data.</i>

DISCUSSION and IMPLICATIONS

The findings revealed that the participants of this study who are science education students in one Indonesian higher education institution were quite familiar with the use of SNSs where majority of the students (46.95 %) have used SNSs from 6 years to eight years and Merely 25 students (8.07%) had less than three years of experience using SNSs. These results are consistent with previous research informing that students have been active users of SNSs (Akçayır, 2017). Slightly different with other previous research that revealed Facebook as the most popular SNS among the students of higher education institutions (Akçayır & Akçayır, 2016; Kabilan et al., 2010), this study informed that the most popular SNS among the students was WhatsApp which used by 100% of the students. This was followed by Instagram (98.7%) and surprisingly Facebook on the third position with 94.85%. In daily life, 35.65% of the students spent their time using SNSs from two hours until more than 3 hours while only 6.75 % of them use their less than 30 minutes time a day on SNSs which is similar to other research results by Prasojo et al. (2017). The findings of this research inform that majority of the students are accustomed to SNSs. Therefore, students in various environments can extend their SNSs use for educational purposes without much difficulty or being required to learn the SNSs' basic functionalities.

The current study investigates students' perceptions of the educational use of SNSs in ESP course. Benefits and problems were revealed not only from the survey we distributed but also from the interview we conducted. The findings revealed that most students agreed on positive responses with Mean above 4 (using SNSs for educational purposes in ESP course was convenient, SNSs supported face-to-face learning in ESP, using SNSs for ESP course increased motivation to learn English, using SNSs for class made me feel more connected to my ESP learning community).

In additions, the other positive statements namely SNSs was used effectively to share ESP materials, using SNSs as an educational platform in ESP facilitated better rapport with peers, SNSs was an effective way to collaborate with peers in ESP course, as well as SNSs was an effective way to communicate with peers for ESP course were also rated with *Mean* above 3.90. These facts prove that in the perspectives of the science education students in one Indonesian higher education institution SNSs were beneficial applied in teaching and learning processes which are similar previous findings informed in other contexts and participants by Ellison et al., (2007), Kabilan et al. (2010), and Lim and Richardson (2016). However, there is one positive statement "I felt more comfortable using SNSs as a discussion tool in place of traditional ESP course discussion" that obtained low *Mean* of 2.13 indicating that the students did not feel agreeable if SNSs replace traditional approaches which corresponds with the findings from Akçayır (2017) and Lim and Richardson (2016), who informed that traditional course technique cannot be replaced by social media. The negative items of the survey resulted in lower mean scores. They disagree that SNSs would invade their privacy if their course and SNSs overlapped ($M = 2.32$) and they don't care one way or the other about SNSs being used for their ESP course ($M = 2.25$).

Regarding the use of SNSs in ESP course, the students also revealed some benefits and problems. There were four coded sub-themes emerged as benefits of SNSs used in ESP course; peer discussion, lecturers-students' discussion, self-directed learning, and critical thinking which is similar to some previous findings of research which informed the benefits of SNSs use were circled around their effectiveness as communication tools and functionalities as learning media (Brady et al., 2010; Prasojo et al., 2017; Habibi et al., 2018; Jones et al., 2010; Tess, 2013). Even though most findings were positive, some students still find problems in using SNS in ESP course. The salient sub-themes coded from the interview data were lack of confidence, lack of connection, and costly to use. The two problems, lack of connection and costly to use, agree with some previous research findings which revealed that the problems of SNSs use in English classes were on the infrastructures and costs (Ang et al., 2018; Hamid, Kurnia, Waycott, & Chang, 2011; Maimunah et al., 2018; Prasojo et al., 2017; Prasojo et al., 2018).

In conclusion, the findings of this research show that most participants are familiar with various kinds of SNSs and frequently used them for communication and entertainment as well as business purposes. This study also informed the high percentage of positive statements regarding the use of SNSs in ESP course. Being compared to few problems revealed, more benefits were informed in the interview sessions reflecting that SNSs have significant potentiality to improve higher education teaching and learning process, especially in foreign language classes.

Implications for practice, policy, as well as further research are recommended in this section. Firstly, because the students' perceptions of the educational uses of SNSs in SNSs course were mostly positive, instructors, teachers or lecturers are suggested to use SNSs in their curriculum and instructional designs in order to improve learning experiences which may be conducted by integrating SNSs as a learning management system (Lim & Richardson, 2016), a collaboration and discussion platform (Prasojo et al., 2017), and a fostering engagement tool (Habibi et al., 2018).

Secondly, students' problems namely lack of internet connection and costly tools to use should be evaluated by policymaker in higher education. Providing sufficient infrastructures of internet connection for all students especially in higher education institutions of developing countries would result in great impacts for the technology integration including the use of SNSs (Habibi et al., 2018; Prasojo et al., 2017). National internet providers are also recommended to offer special prices for students in supporting the technology integration as well as expand their reach of internet broadband access. Further research is recommended to conduct to investigate students' expectation and concerns regarding the use of SNSs in language learning in higher education of developing countries where there are limited sources of infrastructures and human resource. In addition, studies on instructors and policy makers' opinions, expectations, and concerns are needed regarding educational uses of SNSs (Akçayır, 2017).

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