

An Investigation of Facebook for Language Learning: Better Understanding Perceptions and Participation

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Abstract

This study investigated student perceptions of using Facebook for Language Learning (FBLL) and identified Facebook participation patterns. Perceptions of 26 students from a South Korean university were attained through class discussions and a FBLL perceptions survey. Correlation analysis was used to show the relationship between FB participation variables (e.g., number of posts/replies, word count, and sentence length) and both second language (L2) proficiency as well as writing accuracy. Results show that students reported positive perceptions towards FBLL, with the language skill development category revealing the largest positive mean score. Second language proficiency correlated positively with FB participation in six of the eight observed participation variables while writing accuracy correlated with only two, indicating learners with lower L2 proficiency displayed writing accuracy on par with their higher L2 proficiency counterparts in the genre of FB writing. As expected, main posts displayed longer text with more complex sentence structure and vocabulary use than replies, while the number of replies was greater. Students wrote 1390 words on average indicating FBLL is a valid supplementary communications activity in the language learning classroom. Results driven recommendations for future use of FBLL in the classroom are given.

Keywords: Computer Aided Language Learning, SNS for Language Learning, Second Language Writing, Collaborative Writing, Class Participation

Introduction

Social Network Services (SNS) are websites that allow users to interact and collaborate in a virtual community. The collaborative nature of SNS lets users access digital information, create and interact with content, and join online communities (Kaplan & Haenlein, 2010). For this reason, social network applications not only have been included in personal communication practices but have also given themselves to constructivist pedagogies used in higher education in many countries (Tess, 2013). Integrating SNS platforms like Facebook with language learning programs can help provide an affordable and authentic environment to practice L2 communication.

Facebook for Language Learning (FBLL) promotes constructivist practices such as scaffolding knowledge and creating community orientations of learning (Kimmerle, Moskaliuk, Oeberst, & Cress, 2015). Facebook and other SNS platforms are powerful digital tools that have potential to positively affect learning (Cook et al., 2008), especially in language learning classes where students are encouraged to be active participants in the learning community (Alm, 2006). In fact, the application of SNS in L2 education has shown to improve students' interest in language learning (Jones & Shao, 2011; Shih, 2011). The positive outcomes from the previous research conducted have led more language teachers to begin exploring new ways to utilize SNS like FB to improve their teaching methods (Nakatsukasa, 2009).

The use of SNS in education may also create opportunities for learning to surpass the gap between the classroom and personal contexts (Greenhow & Robelia, 2009). In other words, students are provided new channels to use the target language outside the classroom. This is especially valuable for English as a Foreign Language (EFL) learners because they live in countries where English is not spoken regularly in public (e.g., South Korea, China, and Japan) and therefore cannot easily be practiced outside the classroom.

According to Boyd (2014), networked public spaces create affordances of persistence, visibility, spreadability, and searchability. Social Network Services are persistent because online communication is durable, thus allowing visibility by potential audiences, regardless of the constraints of time or space. The spreadability and searchability of SNS further extend the possibilities of sharing and obtaining information beyond the limitations of geographical boundaries. Because of these attributes, SNS can magnify potential audiences, crossing boundaries between social situations and create the possibility where hybrid social spaces are possible (Boyd, 2014).

Facebook is one such SNS tool enabling users to construct a public or private profile to connect and interact with people who are part of their extended social network (Boyd & Ellison, 2007). No argument is being made in the current study that FB is a superior SNS platform to others, rather that SNS platforms, in general, can facilitate L2 communication. Facebook was chosen because it met the SNS requirement for this study (i.e., private groups, friendly user interface, and popular among students). Students using FBLL develop familiarity with an SNS platform that affords the opportunity to network with others outside their country. Furthermore, the majority of undergraduate students at university use FB daily (Ophus & Abbitt, 2009). A growing number of studies show that students' use of FB supports both their academic and social goals (Bosch, 2009; Mazman & Usluel, 2010; Tian, Yu, Vogel, & Kwok, 2011).

The first aim of this study was to investigate student perceptions of their participation in a FBLL program. The second aim was to investigate the relationship between FB participation variables with both L2 proficiency and writing accuracy. Finally, this study compared contributions from FB posts with those of comments and replies (*hereafter* replies). Results from this study will provide important insight into how language learning instructors can use SNS technology in the classroom as either a primary or supplementary language learning activity.

Literature Review

In educational research, the introduction of SNS in learning contexts is often argued for its alignment with constructivist theories of learning (Kimmerle, Moskaliuk, Oeberst, & Cress, 2015). In this type of learning environment, interaction and collaboration between students are of paramount importance, because knowledge is shared and negotiated between students and teachers, rather than transferred solely from the teacher to the student. In constructivist learning situations, communication between individuals is seen to aid cognitive processes and, therefore, improve learning.

Many studies on the use of FB in L2 education environments have reported positive influences on student motivation, engagement, and attitudes. Using FB in the classroom has a significant impact on motivation among students in higher education (Lampe, Ellison, & Steinfield, 2008; McCarthy, 2012; O'Sullivan, Hunt, & Lippert, 2004; Terantino & Graf, 2011; Yunus & Salehi, 2012). Most notably, Mazer, Murphy, and Simonds (2007) suggested that student motivation and participation are greatly enhanced when engaging course material is presented through more personalized platforms, something FB and other SNS platforms (e.g., Twitter and Instagram) provide. Yunus and Salehi (2012) investigated L2 English students' perceptions toward the use of FB groups for improving their writing skills as they engaged in different writing tasks like brainstorming and summarizing. They reported that students felt their motivation and confidence improve through participating in activities on the FB platform. Specifically, the majority of students reported that immediate interaction and feedback increased motivation, while informal interactions such as when students "liked" comments helped improve their confidence.

Studies on the inclusion of FB as well as other SNS platforms enhance student satisfaction and investment, in particular among L2 students (Kabilan, Ahmad, & Abidin, 2010; Shih, 2011; Wang, 2012; Yunus & Salehi, 2012). Through survey analysis, Kabilan, Ahmad and Abidin (2010) investigated if university students considered FB a useful and meaningful learning environment. Students reported that their language skills increased through using FB, and their motivation, confidence, and attitude concerning language learning were also enhanced through their FB experiences. By using FB as a dialogue journal among 46 L2 students, Hiew (2012) reported an increase in positive attitudes toward using FB, and showed that students considered FB a relevant and purposeful educational tool for language learning.

Al-Harthi (2005) studied students from Arab Gulf countries. His students described feeling more comfortable communicating through online applications than face-to-face, especially for women participating in mixed gender classes because the technology tolerates a degree of anonymity. According to Thompson and Ku's (2005) studies, most Chinese students also reported feeling more confident sharing opinions in online discussions than in face-to-face situations. Other authors discussed the benefits of asynchronous communication, allowing students with linguistic anxieties more time for composing and understanding the communication of others (Zhao & McDougall, 2008).

Toetenel (2014) compared online participation by language level and found that students with higher linguistic ability placed more posts than students with lower linguistic ability. He used the SNS platform Ning to increase cohesion and learner-to-learner interaction among language learners. Ning (www.ning.com) is an online platform for people to create custom social

networks. Students enjoyed using Ning and an increase in ethnic diversity in groups occurred by week two indicating Ning facilitated collaboration among learners with different backgrounds. Students appreciated the experience with one stating, “It is good to chat with friends.” and another stating, “Interesting, very useful! But I prefer FB because it is a more complete tool” (Toetenel, 2014, p. 158).

Researchers have shown the educational potential of SNS to create opportunities for learning to surpass the gap between classroom and personal contexts (Greenhow & Robelia, 2009; Lampe, Wohn, Vitak, Ellison, & Wash, 2011; Lang & Lemon, 2014; Lemon, 2013; Northey, Bucic, Chylinski, & Govind, 2015), and the use of Facebook in the L1 classroom has been well researched. There is still a gap in our understanding of how SNS platforms like FB can be used in L2 education, especially with respect to L2 proficiency and writing accuracy. Regarding the gap in literature, the following research questions were asked:

- 1) What are student perceptions of participating in a Facebook for Language Learning program?
- 2) How do L2 proficiency and writing accuracy relate to Facebook participation?
- 3) How does Facebook participation compare between main posts and replies?

Methods

This study combined qualitative data from weekly class discussions (i.e., discussed benefits, challenges, and future changes to improve FBLL) and a FBLL perceptions survey with quantitative data from FB posts and replies in order to better understand the educational applications of FB within language learning context. Common themes were identified through summative analysis using a top-down approach with benefits, challenges, and future changes when using FBLL as the three qualitative components investigated.

Participants

Twenty-six undergraduate students from a Multimedia English course at a South Korean university were recruited. There were nine males and 17 females between the ages of 21 and 25. Data collection occurred over an eight-week treatment during the first half of the semester. Students were taking a Multimedia English 2 class which counted as three credits towards their university major. Students had already completed a Multimedia English 1 course and were proficient at using online discussion platforms like FB. Data collection for student proficiency was triangulated using the Oxford English Quick Placement Level Test (QPT), a speaking test using the IELTS (International English Language Testing System) rubric, and class observation. Student English ability ranged from A2 (n = 7), B1 (n = 11), and B2 (n = 8) of the European Framework of English Proficiency.

Facebook for Language Learning Perceptions Survey

A modified version of Al-Zumor, Refaai, Eddin and Al-Rahman’s (2013) blended learning perceptions survey was administered at the end of the treatment to inquire about student perceptions of participating in the FBLL program. An acceptable Cronbach alpha of .79 was

found for the original survey and of .73 for our modified version. The original English version was translated to Korean by a professional translator then translated back to English by a second translator. Discrepancies identified between the original and back translated versions were resolved through a collaborative effort by both professionals.

The perceptions survey separated perceptions into three domains. The first inquired towards Facebook participation benefits to language skills (Cronbach = .93) the second and third domains investigated benefits (Cronbach = .74) and challenges (Cronbach = .71) of using Facebook for language learning. An original item from the survey states, *Blended learning, gives me access to authentic English*, while a modified version states, *Facebook gives me access to authentic English*. The survey used a 5 point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Three open-ended items were added to the survey that inquired about advantages of using FBLL, challenges of using FBLL, and recommendations for future FBLL programs. In addition to the open-ended items, qualitative data came from FB posts and replies as well as class discussions. Students were given the option to use their first language when completing the survey items, however, class discussions were conducted in English. Detailed class observations were noted in a field journal that included an observation protocol which took note of benefits, challenges, and future changes when using FBLL.

Class Discussion Questions

One of the researchers was embedded in the course as the instructor so the topic of how SNS like FB can be used for language learning was an ongoing discussion throughout the semester. As this was a multimedia English course (i.e., learn English using Internet-based activities and computer software), the discussion of benefits, challenges, and future direction of FBLL was deemed appropriate because it integrated both English conversation and multimedia tools for language learning. Common questions asked during class discussions about the FBLL program are displayed in Table 1.

TABLE 1

Class Discussion Questions about FBLL

What do you like or dislike about FBLL?

How are your FB posts coming along?

Is there anything [on FB] I can help you with?

What do you plan on posting next week?

How much time did you spend on FBLL last week?

Are you having any difficulties?

Would you like me to change anything?

How do you feel when you reply to others?

Who do you usually reply to?

Procedures

Facebook writing tasks began during week two of the semester. Each student created an FB group with a theme (e.g., pets, food, travel, or music.), uploaded a pinned post, and added a group cover photo. A pinned post is usually a short paragraph that gives a description of the group's theme and guidelines. Students were required to join five groups, however, most students ($n = 21$) joined over 20 groups, and all students joined at least 15.

Popular groups emerged by the end of week two of the program. Facebook participation accounted for 10 percent of the total course grade. No extra credit was given to students with popular groups, and learners with unpopular groups (i.e., low traffic) were encouraged to take ownership of more popular groups by participating in them.

To assess FB participation, the instructor copied and pasted group content onto Microsoft Word ©. Then, individual student contributions were separated. These were further parsed by main posts and replies. The text was then processed through the Textalyser analysis tool (www.textalyser.net) to identify readability (i.e., Gunning Fog Index) and average sentence length for both posts and replies. Microsoft Word © was used to identify word count. The Gunning Fog Index is calculated as the weighted average of the number of words per sentence and the number of long words (i.e., more than one syllable) per word.

Writing accuracy for each student was attained from their main posts because the sophistication of writing within main posts was considered more complex than replies. Writing accuracy followed Chandler's (2003) definition of errors per 100 words. Examples of error types include fragments (e.g., Because I did not want to.), deletion (e.g., She told to me her answer.), and wrong form (e.g., It has stopped to rain.) (Chandler, 2003, p. 275).

Data Analyses

Class discussion notes and open-ended survey items were used to identify common themes with respect to benefits, challenges, and future changes when using FBLL. Procedures for investigating qualitative data followed description and analysis of documentation (e.g., open-ended survey items and field notes) set forth by McMillan and Schumacher (2006). Pseudonyms were used when addressing student statements. The statistical software SPSS version 23 was used to carry out analysis. Descriptive statistics and a one-sample *t*-test were used to analyze closed-ended responses to the FBLL perceptions survey. Descriptive statistics were further used to compare FB contributions overall and between main posts and replies. Correlation analysis was used to investigate the relationship among L2 proficiency and writing accuracy with FB participation variables (i.e., total word count, the total number of contributions, words per contribution, and average sentence length of FB posts and replies). Finally, a series of paired *t*-test analysis were used to compare main posts and replies with respect to L2 proficiency, post and reply count, words per post, words per reply, readability, and average sentence length.

Results and Discussion

The first purpose of this study was to investigate student perceptions towards the use of FBLL. Secondly, the relationship of student participation on FB with respect to L2 proficiency and writing accuracy was analyzed, and finally, contributions between main posts and replies were compared.

The formation of different FB groups revealed insight into popular themes and therefore worth briefly describing. Twelve of the original 26 FB groups maintained active participation throughout the eight-week treatment. Three of the 12 groups had a travel theme, two had a pet theme, three were about entertainment (e.g., music and sports), two were about hobbies, and two were open topic. The food, travel, and pet groups produced the most contributions. Unpopular groups were phased out by week three and included themes such as exercise ($n = 2$), photography ($n = 2$), and Chinese culture ($n = 2$). In general, unpopular groups were too specific to attract a large enough audience among the 26 students. Ninety percent of main posts had photos attached while replies were only text. The attached photos were often of activities, places travelled, food, or pets. Approximately five percent of posts contained internet links to websites, and less than five percent of posts contained only text.

RQ1: What are student perceptions of participating in a Facebook for Language Learning program?

Research question one inquired about student perceptions of using FBLL. As shown in Table 1, the first scale which measured the utility of FBLL with regards to developing language skills (i.e., reading, writing, vocabulary, and grammar) had a mean score of 3.77 ($SD = 1.03$). The second scale which measured benefits with FBLL had a mean score of 3.55 ($SD = 0.91$). The third scale measured limitations of FBLL and had a mean score of 2.40 ($SD = 0.85$). Table 2 displays result from a one-sample t -test analysis for each of the three scales in the perceptions survey. A comparison value of 3 was chosen since the survey used a 5 point Likert scale. All three scales showed statistically significant differences from the median value of 3, indicating overall positive views toward the use of FBLL which is consistent with previous findings in FB and SNS for education research (Yunus & Salehi, 2012). The language skills category revealed the greatest difference from the mean indicating students reported to hold positive views towards the benefits of FB for language skill development.

TABLE 2

One-Sample t-Test for the FBLL Perceptions Survey

Category	<i>M</i>	<i>SD</i>	<i>MD</i>	<i>t</i>	<i>p</i>
Increased Lang. Skill	3.77	1.03	.772	3.512	.002**
Pos. View	3.55	0.91	.545	2.811	.010**
Neg. View	2.40	0.85	-.600	-3.308	.003**

Note: $n = 26$; $\alpha .05^*$, $.01^{**}$; Comparison Value = 3

Common responses for the three open-ended items are displayed in Table 3. While the close-ended items indicated mostly positive perceptions, the open-ended items revealed balanced feedback regarding positive and negative aspects of FBLL.

TABLE 3
Common Responses for Open-Ended Items

Positive Views (Open-ended Item 1)			
n = 8	Communicating with others	n = 5	Share ideas
n = 6	Interesting	n = 4	Variety of groups
n = 5	Improve writing skills	n = 4	Fast and convenient
n = 5	Accessibility (place and time)	n = 3	Easy to do
Negative Views (Open-ended Item 2)			
n = 5	Do not use SNS often	n = 3	FBLI was burdensome
n = 4	No corrective feedback on writing	n = 2	No friends in the class [so FB was more difficult]
n = 4	FBLI was not challenging		
Future Changes (Open-ended Item 3)			
n = 4	Provide corrective feedback	n = 2	More options than just Facebook
n = 3	Clearer criteria for FB activities	n = 2	Less competition

Class discussion about FBLI occurred throughout the program. Students were most often asked to provide information about what motivated them to stay active on FB. The majority of students participated primarily because of the grade, with interest being the second reason (n = 17). Five of the top 10 highest participating students reported interest as their main reason for participating. Students generally appeared happy with the existing FBLI program (i.e., free writing outside of class with no criteria) and provided little feedback about future changes. Students used a variety of positive terms to describe their experience with FB and appreciated the 1) accessibility, 2) variety of FB groups, 3) ability to share ideas with classmates, 4) opportunity to improve writing skills, and 5) opportunity to practice English. As one student stated:

Above all, the advantage of Facebook for Language Learning is accessibility. Most of the people often use their social media every day, especially [students in their] twenties, so Facebook removes the student's resistance. We naturally learn English expressions or grammar through communication with each other by [using] Facebook.

Students reported to appreciate the opportunity to practice authentic English at a time and place of their choice. This positive affect towards asynchronous communication in the language learning classroom supports benefits found in previous research (Al-Harathi, 2005; Thompson & Ku, 2005; Zhao & McDougall, 2008).

The opportunity to communicate with others was the main benefit reported by students in the survey (n = 6). This confirms what was observed during class discussions. In general, students appreciated the chance to message with one another outside of class. Five students reported improved writing skills as the greatest benefit of using FBLI. While a number of studies have shown that FB supports learning (Bosch, 2009; Mazman & Usluel, 2010; Tian, Yu, Vogel, & Kwok, 2011), there is a dearth of research that shows FB's application in the development of

writing skills. Investigating how FB can be used to increase writing accuracy among L2 learners is an important direction for future research.

Six students explicitly reported that using FBLL was interesting which was the second highest common response found among the open-ended survey items, following communicating with others. Jones and Shao (2011) and Shih (2011) also found SNS platforms cultivated interest. Higher participating students reported more interest than lower participating students with one high participating student saying, “I really enjoy writing on my Facebook group. I think it is fun and exciting” while the lower participating students more often spoke negatively about their FB experience, with one stating, “Using Facebook is bothersome [for] me. I don’t like it.” Some of the lower participating students reported a lack of academic value towards the utility of FBLL. A lack of L2 proficiency in spite of interest was a second reason found for low participation. Early intervention appears necessary in order to establish reason to participate. In addition, scaffolding (e.g., provide templates or examples) for lower level L2 learners should be given.

Upon further review of the FBLL perceptions survey, four students reported negative views in the benefits category below a mean score of 2.0. When reviewing their responses about the challenges of using FBLL, one student [Minsu] stated, “It is difficult to experience a high level of writing.” This student did not feel challenged academically. A second student who also reported negative views towards FBLL remarked, “The limitation of FBLL is that it is harder to express a richer expressiveness because our feelings are more than just words.” The researcher-instructor used this information during the class discussion with Minsu to gain a deeper understanding of these views. Through the discussion, he went on further to say:

I am a lot older than the other students. I mean, they're nice and I like them of course, but I don't have a lot of time to Facebook with them. I understand that this is for class so I will do it, but it is sometimes a burden.

In Minsu’s case, he participated more than the average student due to being highly conscientious about his grade. He did the activity for the activity’s sake and not necessarily interact with others.

Jiyoung was another student who reported negative views about FBLL. Jiyoung noted that some students were friends outside of class and that their friendship made participating on FB easier. Class observation and review of the FB contributions supported this claim that students who have established relationships with classmates will message with those friends more on the class FB groups. Concerns identified by Minsu and Jiyoung are valid and should be addressed through early intervention when implementing future FBLL programs. For instance, future programs can address the lack of voluntary participation by assigning FB activities with criteria (e.g., write at least 50 to 100 words) requiring students to post and reply. This will mitigate concern of not being challenged academically while also providing a safe opportunity for everyone to participate regardless of established friendships with classmates.

Four students reported in their open-ended items that the lack of voluntary participation from other students made them participate less, with one student saying, “I would like to have a way to encourage other classmates to reply more” and another stating, “I can proceed only with the participation of others, therefore, I can’t write anything if they don’t [write].” Facebook

participation is a reciprocal process that requires an active community and the ability to seek out others within that community. Future FBLL programs should limit the total number of FB groups so that students can more easily track others who are participating. For instance, the instructor could have students decide on the three or four most popular FB group themes instead of each student creating their own group. This would narrow the number of FB groups students would have to search through in order to stay active. This would also make assessment of the FB group contributions easier for the instructor because they would not have to navigate so many groups when reviewing student contributions.

The final concerns brought up by eight students when asked about the challenges of FBLL was assessment and feedback. Four students were unhappy that they could not get corrective feedback from the teacher with one stating, “It is difficult to get the feeling that [my] English is improve[ing] compared to classroom writing. Though it may slowly improve without knowing it, most people want to see the results in class.” Another student said, “But in Facebook, you can’t correct our grammar. I want to get feedback.” While posts and replies were collected, accuracy was checked, and written corrective feedback was given to the students at the end of the course, some students appear to want more immediate feedback. It should be noted that the FBLL program was only one portion of a broader multimedia English course that focused on writing accuracy through more academic writing assignments that provided weekly corrective feedback.

RQ2: How do L2 proficiency and writing accuracy relate to Facebook participation?

Results from answering research question two provide insight into how the achievement measures of L2 proficiency and writing accuracy relate to FB participation. As we see from Table 4, statistically significant relationships were identified. As expected, higher L2 proficient English students participated more than less proficient ones. Second language proficiency contained a higher number of statistically significant relationships compared to writing accuracy. Large standard deviations among the FB participation variables were recognized for with L2 proficiency and writing accuracy. Large standard deviations among the FB participation variables of posts and word count were also observed with Bowman and Akcaoglu’s (2014) group of mass media students who participated in a course FB group and was attributed to the combination of super users (i.e., students that participate routinely and often) and more passive users (i.e., students that rarely posted).

TABLE 4
Correlation Analysis for FBLL Participation Variables

	<i>M</i>	<i>SD</i>	L2 Proficiency		Writing Accuracy	
			<i>r</i>	<i>p</i>	<i>R</i>	<i>p</i>
Posts	22	17	.35	.041*	.39	.024*
Word Count	790	626	.47	.008**	.42	.017*
Words/post	38	18	.46	.010*	.24	.114
Words/sentence	8.04	1.9	.22	.140	.08	.350
Replies	43.5	35.14	.36	.033*	.02	.463
Word Count	601	515	.35	.040*	.08	.338
Words/reply	13.2	4.5	.109	.298	.20	.165
Words/sentence	6.73	1.98	.38	.028*	.28	.087

Results from correlation analysis show that both L2 proficiency and writing accuracy have a positive relationship with FB participation at a statistically significant level. Second language proficiency showed the most statistically significant positive relationships with six of the eight FB participation variables, with writing accuracy only showing positive relationships with two (posts and word count per post).

High L2 proficient students have been found to participate more on SNS (Toetenel, 2014) and this was the case here as well. Students with higher L2 proficiency showed the highest correlation with word count ($r = .465, p = .008$). This makes sense since students with higher L2 proficiency spend less time than proficient ones when forming ideas and writing so the act of participating on FB is easier for them.

For mixed level classes (i.e., high and low L2 proficient students), instructors may want to avoid giving points for word count, and instead, allocate more points to total number of posts and replies so as to give lower L2 proficient learners opportunity to compete with their higher L2 proficient counterparts. This would reward the important act of engaging in the target language which is a crucial first step for communication to occur. In such an example, length and accuracy of text should be less emphasized compared to the frequency of contributions. In other words, students should be assessed on the number of communication channels they create instead of the length or accuracy of what was communicated if lower L2 proficient students are expected to compete with higher L2 proficient ones. Of course, more emphasis can be placed on accuracy (i.e., clarity) and text length (i.e., substance) as students develop their L2 proficiency, but encouraging actual opportunity to communicate (i.e., the total number of posts and replies) should be a priority for encouraging active participation among lower L2 proficient students.

English proficiency had a positive relation with total number of posts ($r = .346, p = .041$) and replies ($r = .357, p = .033$), however the relationship was weaker than with total word count of posts. As we can see when comparing the relationship of L2 proficiency with the average sentence length of posts and the average sentence length of replies, the relationship becomes weaker with replies indicating students, in general, wrote shorter sentences (using simpler vocabulary) regardless of L2 proficiency level. This information implies it would be advantageous for students at lower proficiency levels to participate by replying in simpler sentences (e.g., copying ideas and vocabulary from the main post of higher performing students) rather than focusing primarily on their own posts. In other words, lower level students can use their limited vocabulary to participate more frequently through replies instead of posts.

Platforms like FB are valuable to instructors teaching mixed levels because high accuracy writers can scaffold low accuracy ones by modeling correct composition. Creating original posts should be encouraged among all students, however, mimicking other posts is an example of how higher proficient students can assist lower proficient ones by contributing more complex use of language, ideas, and discussion starters in FB posts, while lower proficient learners can mirror vocabulary and sentence structure with their replies. The following is an example of how a lower L2 proficient student (Mina) mimicked her higher proficient peer (June):

June (High L2 Proficient Student): Today I went to the park with my friends and played basketball for three hours. After that, we ate some pizza and drank beer.

Mina (Low L2 Proficient Student): Really? Sounds fun. Today I went to the movies with my brother and then read a book for two hours.

Lower proficient students are able to borrow grammar structure, word groups, and vocabulary from previous posts as we can see from underlined words in Mina's message. Here lies the opportunity for collaborative learning based on the peer-modeling components of Sociocultural (Vygotsky, 1978) and Socio-Cognitive (Bandura, 1986) learning theories which is made possible with FBLL.

RQ3: How does Facebook participation compare between main posts and replies?

To better understand the differences between FB posts and replies with respect to FB participation, a series of five pair-wise *t*-tests were administered. They analyzed total contributions, word count, words per contribution, readability, and sentence length. Statistically significant differences were found for a total number of contributions, words per contribution, and readability as shown in Table 5. Participants wrote fewer FB posts than replies however they wrote almost three times as many words per post than reply. Mean score comparison shows students contributed 24 percent more writing to FB posts ($M = 789.81$, $SD = 626.16$) than replies ($M = 600.91$, $SD = 515.04$). Statistically significant differences in readability was also identified as shown in Table 5, indicating that complexity of main posts was greater than replies.

TABLE 5

Paired t-Test Analysis of Participation Variables between FB Posts and Replies

	Posts		Replies		<i>t</i>	<i>P</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Contributions	21.7	17.25	43.5	35.14	4.271	.000**
Word Count	789.81	626.16	600.91	515.04	2.181	.039
Words/ Contribution	37.9	18.37	13.2	4.51	6.979	.000**
Readability	4.47	1.122	3.76	0.857	2.993	.007*
Sentence Length	8.04	1.97	6.73	1.98	2.588	.016

note: $df = 25$; $n = 26$; Bonferroni adjusted alpha $.05/5 = .01^*$, $.01/5 = .002^{**}$

Similarities and differences between FB posts and replies with respect to writing accuracy, readability, and frequency of contributions were identified. As shown in Table 5, the number of contributions and word count per contribution showed the greatest level of statistically significant difference ($p < .002$). As expected, students wrote twice as many replies as posts, yet wrote almost three times as much per post than reply. Main posts usually introduced original content and context to support that content while replies could be shorter because they were able to reference information in the main posts. For example:

Main Post: Today I went to the Han River and watched fireworks. It was amazing. We ate fried chicken and drank beer. The weather was warm too. I want to go again.

Reply1: Ah, I did that last year, but it was cold.

Reply2: I want to go next time!

Students used pronouns in their replies (the underlined word *that*) to express ideas presented in the post. In addition, students would often write simple short sentences in their replies that provided little new information but expressed feelings or desires as shown in reply 2 above (*I want to go next time*). Perhaps instructors could reward more credit towards reply word count in order to facilitate more discussion. This would motivate students to provide more content in their replies and hopefully more lively discussions.

While it was not a requirement, 95 percent of main posts were accompanied by a photo (e.g., food, pet, or place), video, or news link (e.g., music or movie reviews). These attachments were the focus of the content in the main posts, and often the focus of the replies. Kirman, Lawson, Linehan, Martino, Gamberini, and Gaggioli (2010) found enhanced contextual information, as found in photos and videos, increased engagement among FB users, as was the case here. Background information and personal feelings about the photos and links were given in the main posts, while replies usually contained information about 1) personal feelings of the responder, 2) reactions to the personal feelings stated in the main posts, and/or 3) a brief response containing new information to the original context of the main post. The following is an example of the main post about a Pekingese dog:

Hello everyone~~~

Do you have a favorite type of dog? I love Pekingese! Pekingese have many charms. First, Pekingese have cute behavior [such as] sticking their tongue out. Second, their noses are cute! Third, short leg is attractive. In addition, Pekingese have independent, brave and aggressive attitudes. Please write a comment about your favorite type of dog or anything!!

The message above was accompanied by a image of a Pekingese dog. Comments to the above example were shorter messages such as, “I especially like white Pomeranian. Their fur is so soft and their eyes are so big!! I really want to raise one♡” and “very small and cute!!” There appeared to be a great deal of variety between simple and more complex sentence structure in both main posts and replies, however, replies contained more simpler sentences on average while main posts contained more complex ones. This was attributed to main posts requiring more proper nouns to describe context (e.g., This is a photo of Seoul Tower) while replies could be clearly understood when only using pronouns (e.g., I like that place). Attached photos did not occur in replies which could have given an opportunity for more participation within the given discussion thread.

Posts consist of greater syntactic complexity than replies as a result of more information, longer sentences, and more long words per word. Syntactic complexity is “understood broadly as the range and the sophistication of grammatical resources exhibited in language production” (Ortega, 2015, p. 82) and is considered to be powerfully influenced by L2 proficiency (Hulstijn, 2015). For this reason, advanced learners will always have advantage if measures like word count, sentence length, and word type are used to calculate participation. Giving more grade

weight to the number of posts/replies could give lower L2 proficient learners an opportunity to compete.

Platforms like FB can provide an opportunity for students to express more clarity in their writing than they could with more complicated writing tasks (e.g., narrative, descriptive, or technical writing). As expected, Facebook contributions resulted in greater accuracy than compositions written during class which is contributed to the lack of time pressure when posting. Students can always choose to increase their syntactic complexity, lexical diversity, and use of sophisticated language when using FBLL, but they can also avoid those more cognitively challenging tasks by producing simpler writing compositions (i.e., short words and short sentences) which can be complimented with multimedia (e.g., photos, videos, and news links).

Conclusion

This study revealed students overall reported to have a positive view of using FBLL while also providing valuable feedback on how to improve future FBLL programs. Early intervention by instructors should address issues related to the in-class social environment as well as strategies to participate. Students with established friendships in class appear to have an advantage over more isolated students when it comes to FB participation so instructors are encouraged to facilitate equal participation among all student by assigning FB writing activities (e.g., post about a news story and reply to at least two other student posts). By assigning structured activities, the instructor is transcending the safe-space of the language learning classroom outside of the brick-and-mortar school and into the SNS environment. Students will feel more comfortable communicating with less known classmates if the communication activity is organized by the instructor instead of the responsibility to communicate being placed solely on the student.

Results from this study revealed a number of strategies students could incorporate when participating online. Mimicking posts and replies from others is recommended strategy lower L2 proficient students can utilize. Students with higher writing accuracy are able to scaffold lower accuracy writers by modeling correct form. Lower accuracy writers are encouraged to reply as often as possible because the level of writing within replies is easier compared to posts which often require more complex sentence structure and vocabulary use. The use of photos was an unexpected strategy students employed to a great extent in this study. Turning FB groups into essentially narrated photo galleries can be a terrific way for students to use media to help convey meaning.

The small sample size in the current study was a limitation. Future research should investigate FBLL collaboration among a larger group of students. Participants can be recruited from different classes, schools, and even countries. In addition, emerging Facebook analytic websites like www.gyrtics.com offer affordable services that allows for automatic parsing of posts, replies, reactions, and engagement scores (comments per post + reactions). Analytic websites such as this one decrease the time investment necessary to carry out more sophisticated quantitative FBLL research. This study did not control for pre/post writing accuracy levels so future research may want to measure the influence FBLL has on writing accuracy. Finally, a more robust survey that looks at constructs such as self-efficacy with FBLL

and/or learning styles may provide helpful insight into how student succeed when using social network sites for language learning.

Technology that makes SNS possible continues to advance and understanding how to utilize such technology in the classroom, as well as how such technology affects students, is crucial. To meet this need, this study provided a unique insight into how SNS platforms like Facebook can be used for language learning.

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