

Creating an Online Learning Community in a Flipped Classroom to Enhance EFL Learners' Oral Proficiency

Wen-Chi Vivian Wu¹, Jun Scott Chen Hsieh² and Jie Chi Yang^{2*}

¹Department of Foreign Languages and Literature, Asia University, Taiwan // ²Graduate Institute of Network Learning Technology, National Central University, Taiwan // vivwu123@asia.edu.tw // curtis3883@gmail.com // yang@cl.ncu.edu.tw

*Corresponding author

(Submitted November 5, 2015; Revised June 22, 2016; Accepted August 10, 2016)

ABSTRACT

Since the advent of new technology for learning, innovative language instructors have been constantly seeking new pedagogy to match the potential of technology-enhanced instruction. While previous studies have supported the adoption of technologies to facilitate language teaching and learning, research into enhancing English as a foreign language (EFL) learners' oral proficiency by creating an online learning community in a flipped classroom remains insufficient. Therefore, the current study examined the impact of an online learning community in a flipped classroom, specifically via mobile platforms, on EFL learners' oral proficiency and student perceptions. Fifty English-majored sophomores enrolled in two oral training classes at a four-year comprehensive university in central Taiwan participated in this study. A mixed method was employed to analyze multiple sources of data, including pre- and post-tests on oral reading and comprehension questions, a "Community of Inquiry" (CoI) questionnaire, and semi-structured focus-group interviews. The results from multiple sources indicated that the online learning community not only facilitated meaningful and positive collaboration but also significantly improved the participants' oral proficiency, thus leading to more active engagement in highly interactive learning activities, such as storytelling, dialogue collaboration, class discussion, and group presentations.

Keywords

Community of Inquiry, Flipped learning, Online learning community, Oral proficiency

Introduction

The development of communicative competence is an overarching learning objective, and exposure to communicative practice is generally recognized as an essential element of successful foreign language learning and teaching (Council of Europe, 2001). Oral proficiency in a foreign language is the prerequisite for communication of ideas and intelligent conversation. The ability to speak a language is synonymous with knowing the language, since speech is the most basic means of human communication (Folse, 2006). However, inadequate communication and interaction between teachers and students, excessive teacher-led lectures, and relatively fatiguing test-based teaching methods still suppress the development of student communicative competence. Even with years of English learning, English as a foreign language (EFL) speakers still have difficulty mastering English oral skills and are hesitant when speaking English out loud.

Technology, with distinctive features such as mobility, reachability, personalization, spontaneity, and ubiquity, is widely used to facilitate language teaching and learning. In particular, given the benefits and possible learning affordances that mobile-assisted language learning (MALL) offers, incorporating mobile devices appropriately can "have the potential to revolutionize the way we work and learn" (Peters, 2007, p. 1). In recent years, as young users in Asia have been communicating with each other via mobile messaging applications (such as LINE, WhatsApp, and WeChat), research into the role of such instant and text messaging technologies in education has revealed their positive effects on providing platforms for socializing, sharing information, and communicating (Sweeny, 2010).

Flipped learning is an alternative approach that integrates technology into language learning, and that contributes to ample opportunities for students to learn (Chen Hsieh, Wu, & Marek, 2016; Hung, 2015; McLaughlin et al., 2014; Overmyer, 2012). In a conventional class, new knowledge is introduced in the classroom, usually via lecture, and students practice using the knowledge at home, via homework. Flipped learning reverses this paradigm, with information introduced to students before class using technology (such as mobile devices). This allows more advanced learning activities during in-class time, meaning students are given more opportunities to participate in meaningful engaging activities, thus enhancing the learning outcomes (Boucher, Robertson, Wainner & Sanders, 2013).

Studies have shown that flipped learning significantly enhances student learning performance (Chen, Hsieh, Wu, & Marek, 2016; Deslauriers & Wieman, 2011; Hung, 2015; McLaughlin et al., 2014; Sahin, Cavlazoglu, & Zeytuncu, 2015), student engagement (Chen, Hsieh, Wu, & Marek, 2016; Jamaludin & Osman, 2014), and produces enhanced learning outcomes (Chen, Hsieh, Wu, & Marek, 2016; Baepler, Walker & Driessen, 2014; Moravec, Williams, Aguilar-Roca, & O’Dowd, 2010). Bishop and Verleger (2013) contended that a flipped classroom is an educational technique that consists of two important components: (1) the use of computer technologies such as video lectures, and (2) the involvement of interactive learning activities. In fact, flipped learning effectively cultivates student autonomy and arouses student awareness (Yang, 2013), by allowing students to “proceed at their own pace, guide themselves to additional content, and assess their own learning gains” (McLaughlin et al., 2013, p. 196). Furthermore, flipped instruction provides autonomous supportive learning contexts that not only adopt students’ different perspective and thoughts but support students’ autonomous self-regulation (Reeve, 2009). Simply put, the core of flipped learning is to provide a learning community where students develop knowledge through constructive learning experiences, peer interaction and, collaboration.

Chen, Wang, Kinshuk, and Chen (2014) expanded ideas about flipped learning with their “seven pillars of flipped learning” model (Figure 1). The instructional design of the current study, in which LINE (a mobile application that features instant communications among electronic devices such as smartphones, tablet computers, and personal computers) was used to form an online learning community for flipped learning, fits well with the FLIPPED schema. Both an online learning community and a physical classroom gave students a *flexible environment*. A student-centered *learning culture* allowed students to participate actively in collaborative and interactive instructional activities outside the classroom by means of the online learning community. *Intentional content* made by instructors in the form of videos was specifically designed for students to learn and explore new knowledge. The researchers were all *professional educators* who observed and monitored student engagement and progress, offered online and in-person feedback, and evaluated the students’ performance. The learning activities provided *progressive networking learning activities* in which the students acquired knowledge, interacted, and collaborated with their partners via the online learning community. The professional educators in the current study not only possessed good instructional skills, strategies, and attitudes prerequisite for a positive learning environment, but also were aware of the transactional distance by considering the proper combinations of structure, dialogue, and learner autonomy, providing *engaging and effective learning activities*. Finally, the ubiquitous online learning community via LINE combined with advanced in-class learning activities provided a *diversified and seamless learning platform*.



Figure 1. The seven pillars of flipped learning

An interactive online learning community allows students to develop strong relationships with fellow students (Murdock & Williams, 2011). It provides learners with opportunities to meet regularly with their partners for collaborative construction and improvement of knowledge about chosen topics. A great deal of literature suggests that online learning communities are an effective way to promote the sharing and building of knowledge by learners (Ke & Hoedley, 2009), to enhance overall learning and critical thinking, to foster active learning, and to develop more positive learning attitudes, in comparison with conventional classes (Gazi, 2009).

The Community of Inquiry (CoI) framework is a widely-used model for examining and evaluating a learning community (Garrison, Anderson, & Archer, 2001; Garrison, Cleveland-Innes, & Fung, 2010). CoI focuses on the intentional development of the community with an emphasis on the processes of instructional conversations that lead to epistemic engagement (Shea & Bidjerano, 2010). CoI encompasses three interdependent elements that facilitate meaningful online learning: teaching presence, social presence, and cognitive presence. The *teaching presence*, referring to how instructors sequence the learning activities and facilitate learning (Koh, Herring, & Hew, 2010), encompasses the design, direction, and support of student activities to provide a powerful learning

experience (Rubin, Fernandes, & Avgerinou, 2013). *Social presence*, the most effective way to support the social and interpersonal communication required for online teaching and learning (Lowehtal & Dunlap, 2010), includes affective responses and expression, open communication with others during the course, and cohesive communicative responses (Díaz, Swan, Ice, & Kupczynski, 2010; Rubin, Fernandes, & Avgerinou, 2013). *Cognitive presence* refers to the development of critical thinking skills (Scherer Bassani, 2011); the engagement with course concepts; and the ability to create meaning out of ideas, develop and build competence via discussion, and reflect and apply the newfound meaning (Rubin et al., 2013). Such presence is evidenced in a collaborative constructivist learning environment or in online discourse where students share related experiences via critical thinking to achieve a shared understanding (Burgess, Slate, Rojas-LeBouef, & LaPrairie, 2010; Garrison et al., 2001; Yang, Quadir, Chen, & Miao, 2016).

In recent years, communication via mobile messaging applications (such as LINE, WeChat, and WhatsApp) has gained increasing popularity among young users in Asia. Previous research into the effects of instant and text messaging technologies in education has shown that such applications serve as online media for socializing, information sharing, and communicating (Sweeny, 2010), and result in stronger motivation and support (Chen Hsieh, Wu, & Marek, 2016; Coniam & Wong, 2004; Wu, Marek, & Chen, 2013). However, there has been little investigation into using MALL for online learning communities. Investigation into flipped learning is also relatively new (Ash, 2012; Bergmann & Sams, 2012; Herreid & Schiller, 2013; Tucker, 2012), let alone an in-depth probe into whether the integration of an online learning community into flipped learning via mobile platforms can enhance the oral proficiency of EFL learners. In addition, research on use of the voice function that many social media platforms provide remains scarce. To scrutinize the benefits and affordances of online learning communities, mobile technologies, and flipped learning, the current study examined the effect of using an online learning community for flipped learning, specifically via the smartphone app LINE, on the oral proficiency and learning perceptions of EFL learners.

Accordingly, the researchers employed a mixed-method research design to study how an online learning community in a flipped classroom incorporating online verbal interaction, measured via CoI, impacted the EFL learners' perceptions and oral proficiency, all compared to conventional learning. The following research questions guided the study:

- Were there any differences in the participants' oral proficiency between the two instructional methods (flipped and conventional learning)?
- Were there any differences in the teaching/social/cognitive presences between the two instructional methods?
- What were the participants' overall experiences learning English via flipped learning?

This study is significant and at the cutting edge because different from previous studies, it probed into all of the three presences (teaching, social, and cognitive) in the CoI framework that an innovative flipped instruction created, specifically examining the use of an online learning community via the smartphone app LINE in a flipped classroom in EFL oral training classes at the university level. Moreover, the current study provides a holistic flipped instructional design that integrated the four skills of English as a whole, in which passive learning activities such as unidirectional lectures were replaced by instructional videos and collaborative activities before class, allowing precious class time to be spent on interactive and collaborative learning activities.

Methods

Participants

The participants in the current study were 50 English-major sophomores enrolled in required English Oral Training classes at a four-year university in central Taiwan, mostly female and between the ages of 20 and 21. The participants had studied English for around eight years through high school English education, with nearly 50% of them passing the Intermediate Level of the General English Proficiency Test (GEPT) and some passing the first stage of the High-Intermediate Level. Their English proficiency level was considered to be upper-intermediate, indicating a capacity to make inquiries and hold conversations on daily topics, describe and express topic-specific opinions, and share personal thoughts and viewpoints in social interactions without much difficulty. The participants experienced conventional lecture-based instruction for the first eight weeks of the study and then shifted to flipped instruction for an additional eight weeks.

The researchers chose this model to align with the Within-Subjects research methodology (Creswell, 2013) so that the students would all have experience with both instructional styles. As such, the study was not a formal experimental design and it was not a research design examining the effects of variables. It was not necessary, therefore, to have separate control and experimental groups.

Instructional design

To fit the nature of this oral training class, the instructor chose the GOOD CHATS (3rd ed.) textbook, an English conversation textbook designed for advanced students of English, because it covers the most modern and frequently used English idioms, expressions, and turns of phrase useful for oral communication. GOOD CHATS, with its goal set for students to communicate their own ideas or opinions in English, includes 15 topics and each topic features (1) reading passages with idioms, phrases, and collocations useful for the unit topic, and (2) participatory guided dialogues. Six units were chosen (Work, Sports, and Money for the conventional instruction; Time, Childhood, and the Internet for the flipped instruction), each of which included a reading passage, four comprehension questions, 30-40 relevant idioms, and a guided dialogue (Chat for Two) that required the students to draft the dialogue collaboratively.

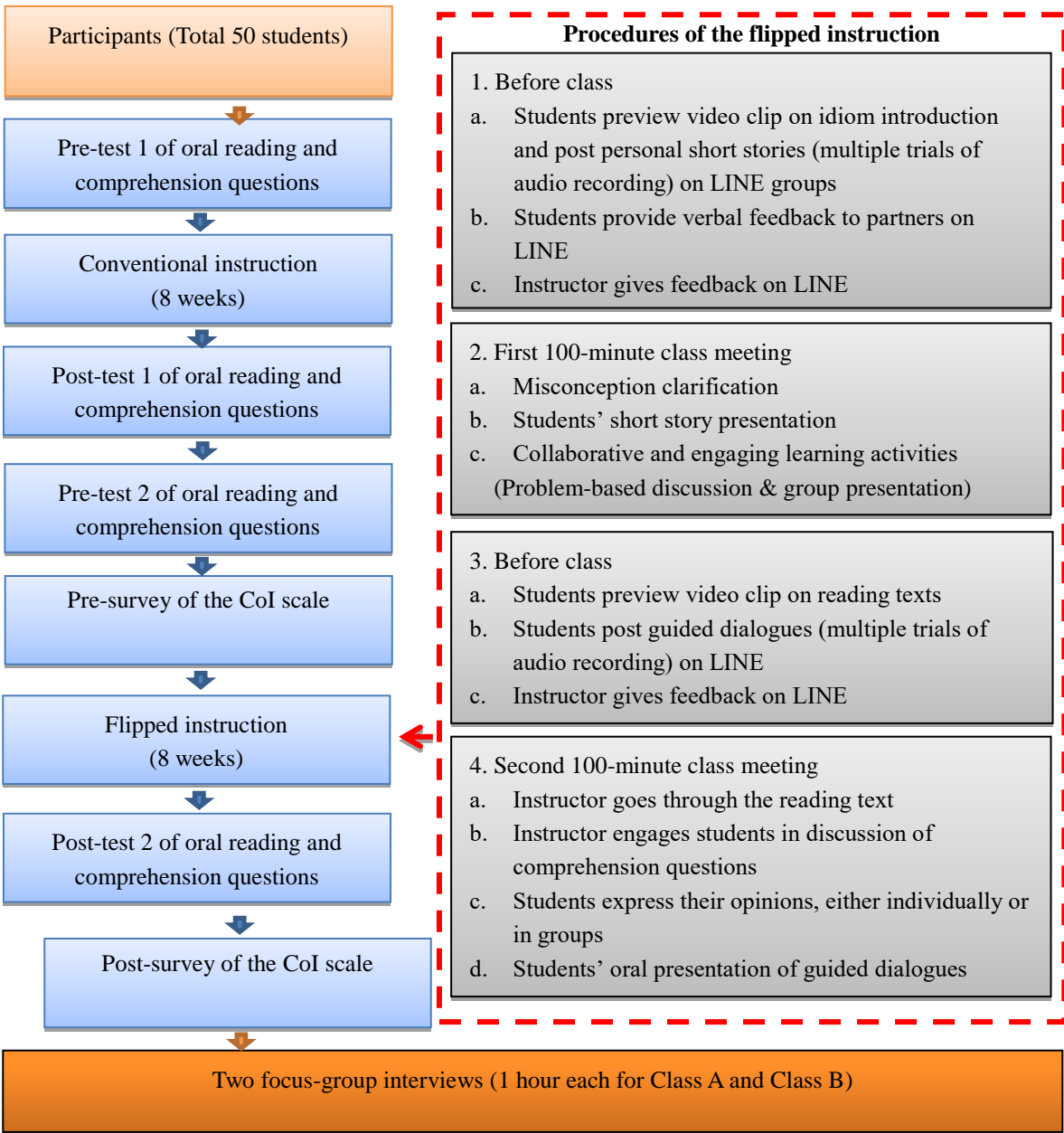


Figure 2. Procedure of the current study

The LINE smartphone app was chosen to form online learning communities because it appeared to provide the affordances required for the instructional design of this study. Line is cross-platform (Android, iOS, and PCs) and has high popularity among over 600 million users (Eun-ji, 2015). It features text messaging between individuals and among groups as well as sending audio messages and files. The students in this study were highly familiar with the app and thus required no extra training in its functions. In the flipped instruction, the participants were randomly paired and established two-person LINE groups. Having previewed the instructional videos on useful idioms and reading texts covered in those chosen units, the participants completed their personal story writing in English and collaborated with their partners in English over guided dialogues. They then recorded their stories and guided dialogues with the voice input function provided by LINE and uploaded their English audio messages to their LINE groups. To enhance their English oral proficiency, they were encouraged to have multiple trials of such audio recording until they found it satisfactory, during which time their partners gave feedback in English accordingly. The researchers also joined the participants' LINE groups to give feedback, to observe online peer interaction, and to monitor the overall progress. Figure 2 displays the instructional procedure and data collection process of the current study.

Since the participants had already studied the reading passages and relevant idioms, the instruction in the classroom moved from detailed lecture about micro-level grammar rules to an interactive discussion over meaning clarification and the content of the chosen topic. All instruction was conducted in English. In-class English-based collaborative learning activities included discussion and group presentation, in which the participants were given ample opportunities to apply what they learned in meaningful and authentic settings. After finishing each set of three topics, the participants completed a post-test, identical to the pre-test, which was recorded and graded against the chosen scoring rubric.

During the conventional instruction units (also conducted in English), on the other hand, the instructor elaborated on the reading contents for each chapter during class meetings. Although the participants also experienced collaborative activities like those in the flipped instruction, the need to explain the idioms and introduce the reading passage in class left considerably less time overall for higher-level learning activities.

Research design

Multiple sources of data collection examined the participants' perceptions of the flipped learning experience, including (1) pre- and post-tests of oral reading and comprehension questions, (2) the CoI survey, (3) two semi-structured focus-group interviews, and (4) in-class observations by the instructors. Figure 3 illustrates the interplay among the issues explored, research questions, and data collection.

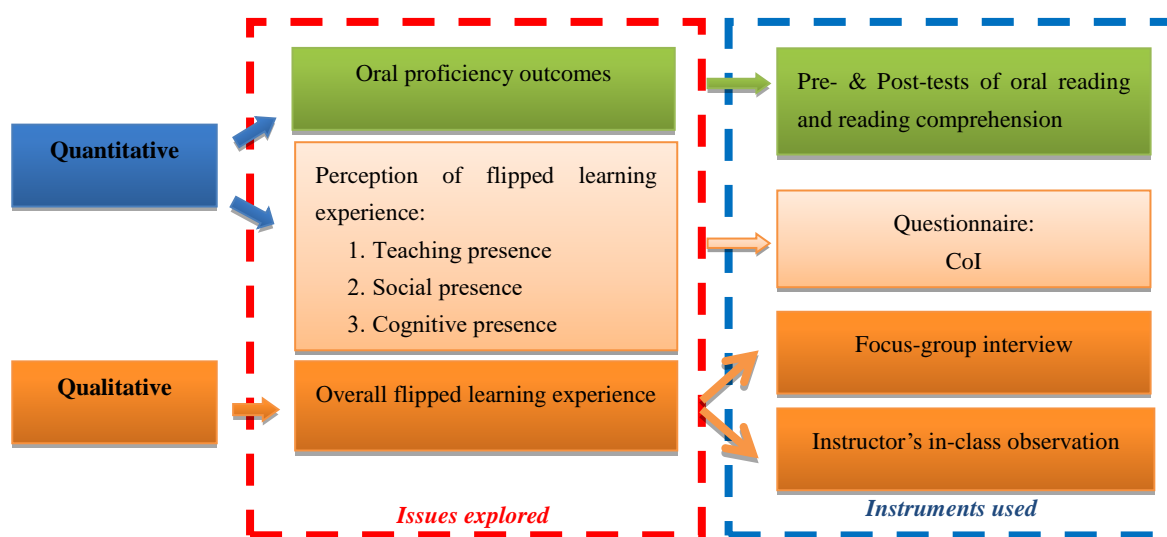


Figure 3. Issues and instruments involved in the current study

Quantitative data analysis

To examine the participants' overall oral fluency, in answer to research question one, the participants completed pre- and post-tests of oral reading and comprehension questions selected from the textbook. The respective pre-

tests and post-tests, for the conventional instruction and the flipped instruction (see Appendix A), were identical in content. The participants responded orally by reading one paragraph aloud and answering one comprehension question for each of the three units. The classroom instructor and the instructor's research assistant evaluated the pre-test and post-test audio recordings. To assure higher inter-rater reliability evaluated via Krippendorff's alpha, the researchers used the *IELTS Assessment Criteria: Speaking* to evaluate the participants' oral performance, covering (1) fluency and coherence, (2) lexical resource, (3) grammatical range and accuracy, and (4) pronunciation. Inter-rater reliability, measured with Krippendorff's alpha at .80, suggested a good reliability (Hayes & Krippendorff, 2007). Since all the participants were upper-intermediate and could read as well as respond to the requirements of the tests, the researchers removed the lowest three point levels or "bands" of the IELTS rubric, leaving seven point categories in the rubric. For the oral reading section, two criteria were employed, including fluency/coherence, and pronunciation. Although three reading passages were chosen from different topics, the participants' oral reading was evaluated as a whole since the participants' learning task was to read aloud. Therefore, the overall score of the reading section accounted for 14 points. Unlike the reading section that examined the participants' oral reading ability as a whole, the four *IELTS* assessment criteria were applied to each of the three comprehension questions since the participants' responses to each question were topic-specific. With each question accounting for 28 points, the overall score of this part was 84. Therefore, the total score for the oral test was 98. The means of the pre- and post-tests were calculated to compare differences (i.e., flipped versus conventional). Furthermore, a Paired-Samples *t*-Test was employed to investigate the participants' oral learning outcomes in two different forms of instruction.

In answer to research question two, the CoI Scale (Arbaugh et al., 2008) in the form of a 5-point Likert scale (see Appendix B) was adopted to investigate the participants' perceptions about the differences between the conventional lecture-based instruction and the flipped experience. The overall reliability of the CoI scale was greater than .90, and the Cronbach's alpha values for the teaching, social, and cognitive presences were .94, .91, and .95, respectively, suggesting high internal consistency of the CoI scale. Descriptive statistics were used to examine the participants' responses to the three elements: teaching presence (items 1-13), social presence (items 14-22), and cognitive presence (items 23-34).

Qualitative data analysis

Two semi-structured focus-group interviews with protocols developed by the researchers were adopted to answer research question three regarding the participants' overall perceptions of the flipped instruction in the course. The interviews focused on the perceptions of (1) the flipped instructional design as a whole (e.g., improvement in oral ability, boring, interesting, challenging, easy...), (2) watching the video clips (learning materials) ahead of class time as well as the subsequent exercises (e.g., story writing and guided dialogue practice on LINE), and (3) the interaction with, and feedback from partners and the instructors. In addition, the in-class interactions among the participants were also recorded and analyzed to showcase the participants' learning experiences.

Results and discussion

The overall analysis of the comparison between the pre- and post-tests, the CoI survey, the focus-group interviews, and the instructor's in-class observation indicated that the use of LINE as an online learning community for flipped instruction created a self-paced learning context. It also created a collaborative constructivist learning environment, in which meaningful learning tasks prior to the class and interactive learning activities in class enhanced the participants' oral fluency and accuracy and made students more engaged in learning (both at home and in class). The results of the current paper are presented in accordance with the research questions.

RQ1: Were there any differences in the participants' oral proficiency between the two instructional methods (flipped and conventional learning)?

Descriptive statistics comparing the pre- and the post-tests in the conventional and flipped instruction units indicated that in both types of instruction, the mean score of the post-test was higher than that of the pre-test (see Table 1). The mean score of the flipped learning ($M = 85.98$) was much higher than that of the conventional instruction ($M = 66.6$). While the maximum scores of the pre-tests in both categories of instruction did not differ greatly, the maximum score of the post-tests in the flipped instruction unit ($M = 95$) was considerably higher than that in the conventional instruction unit ($M = 82$).

Table 1. Descriptive statistics of the pre-test and the post-test

Test	Instruction	<i>N</i>	Mean	<i>SD</i>	Min.	Max.
Pre-test	Flipped	50	69.94	5.80	59	83
	Conventional	50	59.29	5.98	48	74
Post-test	Flipped	50	85.98	5.58	75	95
	Conventional	50	66.6	5.92	55	82

The Paired-Samples *t*-Test shown in Table 2 indicated that in both forms of instruction, the participants performed significantly better on the post-test ($p < .001$) compared to the pre-test, and that the post-test of the flipped instruction was higher than that of the conventional instruction at a significant level ($p < .001$). These results indicated that while both methods of instruction were effective in enhancing the participants' oral proficiency, the flipped instruction contributed to significantly better learning outcomes than the conventional lecture-based instruction ($p < .001$), echoing the findings of previous studies that have shown the positive effect of flipped learning on learning outcomes (Chen Hsieh, Wu, & Marek, 2016; Fulton, 2012; Sahin, Cavlazoglu, & Zeytuncu, 2015; Strayer, 2012; Zappe, Leicht, Mssner, Litzinger, & Lee, 2009). Compared with the mean differences in the conventional instruction, the wider range of mean scores between the pre- and post-tests in the flipped instruction suggested that the participants learned more from the flipped instructional design, because of the ample opportunities for conversational applications in authentic, supportive, interactive, engaging, and collaborative learning contexts.

Table 2. Paired-samples *t*-test of the pre-test and the post-test

	Paired differences						<i>t</i>	<i>df</i>	Sig. (2-tailed)
	Mean	<i>SD</i>	Std. error mean	95% CI of the difference					
				Lower	Upper				
Flipped: Post to Pre	16.04	1.64	.24	15.57	16.52	67.901***	49	.000	
Conventional: Post to Pre	7.31	1.34	.20	6.92	7.70	37.826***	49	.000	
Post (flipped) to Post (conventional)	19.38	1.32	.20	18.99	19.76	102.094***	49	.000	

Note. *** $p < .00$.

RQ2: Were there any differences in the teaching/social/cognitive presences between the two instructional methods?

The CoI examined whether the flipped instruction online learning community made any differences in the teaching, social, and cognitive presences by asking the participants to compare the learning experience in the conventional lecture-based instructional unit with that in the flipped instruction. To begin with, the results in Table 3 revealed that the average scores of the three presences in the post-survey were higher than those in the pre-survey. The social presence held the highest mean difference among the three presences, highlighting beneficial open communication and interpersonal relationships created by the online learning community in the current flipped instruction.

Table 3. Mean differences of the three presences

Survey	Teaching	Social	Cognitive
Pre-	3.53	3.47	3.42
Post-	4.05	4.11	4.04
Post-pre	0.52	0.63	0.62

The Paired-Samples *t*-test shown in Table 4 indicated that significant differences in the three presences between the flipped instruction and the conventional lecture-based instruction, suggesting that the participants had a significantly more positive perception of the flipped learning compared to conventional learning.

In the teaching presence (see Table 5), the average scores of all 13 items in the post-survey were higher than those in the pre-survey. Item 12, "In the previous/current instruction, the instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives," had the highest mean difference. This indicated that the participants recognized the usefulness of the instructor's timely online feedback as well as face-to-face comments in guiding them to become more metacognitively aware of their capabilities and to locate appropriate responding strategies. Furthermore, the responses to Item 7 and Item 9

revealed that they became more engaged in productive dialogue and to explore new concepts in the flipped instruction, because their pre-class efforts in learning idioms and previewing reading contents, in turn, generated more time for interactive learning activities.

Table 4. Paired-samples *t*-test of the pre-survey and the post-survey of CoI

	Paired differences					<i>t</i>	df	Sig. (2-tailed)
	Mean	SD	Std. error mean	95% CI of the difference				
				Lower	Upper			
Post to Pre (Teaching)	.52	.55	.08	.35	.69	6.106***	49	.000
Post to Pre (Social)	.63	.55	.08	.46	.81	7.516***	49	.000
Post to Pre (Cognitive)	.62	.60	.09	.43	.81	6.636***	49	.000

Note. ****p* < .001.

Table 5. Mean differences of the items in the teaching presence

Item	1	2	3	4	5	6	7	8	9	10	11	12	13
Pre-	3.71	3.57	3.71	3.88	3.43	3.62	3.52	3.6	3.36	3.48	3.48	3.19	3.31
Post-	4.1	4.05	4.24	4	4	4	4.17	4.1	4.07	3.98	4.05	4	3.86
Post-pre	0.38	0.48	0.52	0.12	0.57	0.38	0.64	0.5	0.71	0.5	0.57	0.81	0.55

The results of the social presence shown in Table 6 resembled those of the teaching presence in that the average scores of all 9 items in the post-survey were higher than those in the pre-survey. Item 18, “I felt comfortable participating in the course discussions,” had the highest mean difference, pointing out the supportive interactive context created in the flipped instruction design. The participants’ responses to Item 17 and 19 also suggested that the flipped instruction generated a more comfortable conversation and interaction with their peers, in comparison with the conventional lecture-based instruction.

Table 6. Mean differences of the items in the social presence

Item	14	15	16	17	18	19	20	21	22
Pre-	3.5	3.64	3.76	3.24	3.17	3.36	3.26	3.4	3.93
Post-	4.05	4	4.17	4.17	4.38	4.17	3.93	3.95	4.17
Post-pre	0.55	0.36	0.4	0.93	1.21	0.81	0.67	0.55	0.24

With respect to the cognitive presence demonstrated in Table 7, the average scores of all 12 items in the post-survey were higher than those in the pre-survey, among which Item 34, “I can apply the knowledge created in the current class to my work or other non-class related activities”, had the highest mean difference. The results indicated that the participants were able to use what they had learned in wider applications, a noteworthy point in the field of language education because the true goal of language learning is daily communication rather than for passing tests or certificates. The participants also indicated that they felt motivated to explore content related questions. What’s more, the flipped instruction provided the participants with opportunities to synthesize and reflect on new information, leading to a better understanding of the fundamental concepts of the course.

Table 7. Mean differences of the items in the cognitive presence

Item	23	24	25	26	27	28	29	30	31	32	33	34
Pre-	3.5	3.52	3.48	3.52	3.38	3.48	3.43	3.48	3.33	3.36	3.45	3.17
Post-	4.12	4.05	4.21	4.02	4	3.98	4.14	4.05	4.05	3.93	4	3.95
Post-pre	0.62	0.52	0.73	0.5	0.62	0.5	0.71	0.57	0.71	0.57	0.55	0.79

Evaluation of the teaching presence included aspects such as instructional design and organization of learning activities, discourse facilitation, and direct instruction via the online learning environment, revealing that the participants benefited from explicit curriculum and interactive learning activities, and from ample instructor-created opportunities for collaboration and reflection on learning. The findings were consistent with previous research in that teaching presence is a core factor in determining learning outcomes, because students benefited from the instructor’s provision of clear guidance and direction in the technology-enhanced instruction. Such presence assisted learners in accomplishing personally meaningful and educationally worthwhile learning outcomes (Anderson, Rourke, Garrison, & Archer, 2001).

The social presence, which is defined as the degree to which participants feel affectively connected to one another and examined via open communication and interpersonal relationships, supported the social and interpersonal communication required for online learning. The results of the current study echo the findings of previous studies that learners are engaged in a continuous process of maintaining interpersonal relationships, identifying with the community, and involving in meaningful and trustful communication (Garrison & Akyol, 2013). With respect to the cognitive presence, evaluated via the development of critical thinking skills, meaning creation out of discussion, and meaning application, the current study yielded a positive learning experience that guides learners through a triggering event, exploration, integration, and resolution phases (Garrison & Arbaugh, 2007). The two presences combined such that the participants shared related experiences to reach a shared understanding via critical thinking. The results align with the findings by Garrison et al. (2010), suggesting that online learning communities can employ the social presence, serving as an important factor facilitating student learning with technology-enhanced instruction. Furthermore, the social presence serves as an important prerequisite for collaboration and critical discourse (Garrison, 2011), helping the participants in the current study to project their personal characteristics into the learning community through the use of affective expression, open communication, and various means to establish group cohesion (Garrison, Anderson, & Archer, 1999; Garrison & Arbaugh, 2007; Rubin et al., 2013). The participants gradually gained an increased understanding and awareness of the learning materials via the cognitive presence, which in turn enabled them to opt for learning strategies appropriate to the given learning tasks (Garrison & Akyol, 2015).

RQ3: What were the participants' overall experiences learning English via flipped learning?

Based on the analyses of the semi-structured focus-group interviews that explored the participants' reflections about the flipped instructional design as a whole, instructional videos and subsequent activities employed in the study, and interaction as well as feedback involved in the current study, four closely-related recurring themes were identified, including (1) time engagement in the flipped instruction, (2) effectiveness of the flipped instruction on learning outcomes, (3) lively interaction and constructive feedback in the online learning community, and (4) autonomous learning.

Time engagement in the flipped instruction

In comparison with the conventional lecture-based instruction in which students had insufficient opportunities to be engaged in pre-lesson activities, instructors needed to lecture for much of the class time, and students had a limited time span for activity-based learning, most participants reported far more time engagement in the flipped instructional design. One student noted, "I spent more time than before. I watched the videos on YouTube and I also discussed with my partner before we did the work on LINE." Another student said, "Compared with the previous conventional design, I actually spent more time in the flipped teaching. I tried to know the reading content, so that I could speak more in class." Still another responded that, "I had to spend much more time than usual. But, that is why I can learn much more effectively."

Effectiveness of the flipped instruction on learning outcomes

Most students thought that, compared with the conventional lecture-based instruction which started normally with unidirectional and didactic lectures, the flipped instruction more effectively and efficiently enhanced their oral performance. One student noted that, "Such learning released my tension. After learning the information covered in the instruction, I felt more confident when communicating with my peers in English. I can listen to my own recording and take my partner's recording for reference. I can practice as much as I want." Another expressed personal thoughts by saying that, "Through this class, I'm not afraid of speaking in English. I got many chances to speak, write, and read in English. I didn't know many English-related expressions before, so my English expression was simple. But now I can use a wide variety of expressions." Some students mentioned the ample practice they had to enhance their oral proficiency by stating that, "Recording through LINE helps me a lot, since I can record as many times as I wish, until I am satisfied with my recording." Some students recognized the effectiveness of the flipped instruction by noting that, "I can learn English through LINE anytime and anywhere," and "I have learned much more from the teacher, the instructional videos and the interaction with my partner. And I become more active in learning English." One student concluded that, "Sometimes I couldn't get the meanings by reading alone. But the instructional videos helped me understand the overall meaning, with which I could apply what I've learned to my story writing, dialogue practice, and daily conversation."

Lively interaction and constructive feedback in the online learning community

In the interview, students mentioned the interaction with their partners in the pre-class tasks, in-class activities, and assignment not only led them to be more engaged but also provided more learning opportunities to use English in a more authentic way, as illustrated by one student's response that "I particularly loved the interaction and recorded the guided dialogue with my partner on LINE, because it provided a natural context for both of us to learning English. It's all about communication and interaction." Another commented that, "Although I spent a lot of time in this course, I have benefited from interacting with my partner and the instructor. I could practice those useful expressions with my partner and in class." In addition, the feedback from the instructors and their partners were considered beneficial because such suggestions corrected their inaccurate usages. As one student put it, "I could immediately discuss with my partner about inappropriate expressions and revised my work accordingly."

Autonomous learning

More time engagement in the instruction, lively interaction, and constructive feedback gradually guided the students to become autonomous learners. "I prefer such flipped learning experience since I could get immediate feedback and assistance, which enhances autonomous learning and absorption of knowledge," commented one student. Some students noted that the partnership actually drove them to be more responsible for learning, since they had to keep reminding themselves that their partners were also learning along with them, as reflected in one student's response that, "If I am not well-prepared, I might become a drag on mutual learning."

The online learning community, embodied in the authentic interaction and communication via LINE, resembles the findings of previous studies in that the students showed positive acceptance of the flipped instruction (Fulton, 2012; Lucke, 2014; Mortensen & Nicholson, 2014; Murdock & Williams, 2011), because valuable instructional time was mostly spent for meaning clarification, problem solving, and interactive collaboration (Bishop & Verleger, 2013; Boucher et al., 2013; Cole & Kritzer, 2009; Simkins & Maier, 2010). The instructional videos viewed outside the classroom served as mechanism to "fill the vacuum" that instructors would otherwise have left (Tucker, 2012, p. 83), freeing class time for more advanced learning and making the students more engaged in meaningful, interactive, and collaborative activities for deeper concept learning. Pierce and Fox (2012, p. 4) commented that "quality, not necessarily the quantity, of student-teacher interaction is a compelling force in improving student performance." In the flipped instruction employed in the current study, the instructor served more as a guide than an authority, guiding students to build confidence and learn actively (Sarawagi, 2014). In addition, through critiquing the partner's works and providing feedback, students grew as they moved from micro-level issues such as focusing on grammar to macro-level aspects such as idea consolidation, echoing Findlay-Thompson and Mombourquette's statement that "application, analysis, and evaluation" is the outcome cultivated in a flipped course redesign (2014, p. 65). Since students were encouraged to take responsibility for their learning outside the classroom and to participate actively in the instructional activities, they were gradually cultivated to be self-directed in, and responsible for, their learning (Boucher et al., 2013; Overmyer, 2012), thus leading to the enhancement of autonomous learning.

Conclusions

The results of the current study revealed that the participants' oral proficiency was significantly enhanced as the result of the employment of an online learning community via LINE in the flipped instructional design. Constructive, collaborative, contextual, and self-directed pre-course tasks as well as in-class activities effectively motivated the participants to be more engaged and encouraged them to apply what they have learned to authentic settings. The participants also expressed their positive perception of the flipped instruction adopted in the current study, because such instruction made significant differences in the teaching, social, and cognitive presence while the participants made a comparison between the current flipped instruction and conventional lecture-based teaching. Overall, the online learning community in the flipped instruction not only led to meaningful learning while facilitating positive interaction and collaboration, but also significantly enhanced the participants' oral proficiency, making them more competent in learning activities, such as storytelling, dialogue interaction, class discussion, and group presentations.

Based on the findings and subsequent discussion of the current study, the researchers offer the following recommendations for practice.

- Flipped learning could be effectively applied to language teaching and learning in an EFL context. Such instructional design enabled students to be motivated and engaged in learning activities, thus facilitating English teaching and enhancing learning outcomes.
- The mobile-assisted online learning community with the use of LINE adopted in this study is an appropriate instructional design, as it provides an authentic setting for genuine interaction among students. The teaching presence, social presence, and cognitive presence could be significantly enhanced as students are engaged in language exchanges with their peers in the online learning community.
- Students' responsibility for performing the flipped learning activities outside of class is essential. To make sure students complete required learning tasks prior to instructional meetings, teachers must have ways of monitoring students' progress throughout the whole process.

It is hoped that the results of online learning community yielded in the current study open the way for further research and for integration of innovative instructional designs in an EFL setting. Future studies might focus on the extent to which learners of different proficiency levels benefit from an online learning community or a flipped instruction, or scrutinize the dynamic interaction in an online learning community.

References

- Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks*, 5(2), 1-17.
- Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, D. R., Ice, P., Richardson, J. C., & Swan, K. P. (2008). Developing a community of inquiry instrument: Testing a measure of Community of Inquiry framework using a multi-institutional sample. *The Internet and Higher Education*, 11(3-4), 133-136.
- Ash, K. (2012). Educators view the "Flipped" model with a more critical eye. *Education Week*, 32(2), S6-S7.
- Baepler, P., Walker, J. D., & Driessen, M. (2014). It's not about seat time: Blending, flipping, and efficiency in active learning classrooms. *Computers & Education*, 78, 227-236.
- Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. Washington, DC: Internal Society for Technology in Education.
- Bishop, J. L., & Verleger, M. A. (2013). The Flipped classroom: A Survey of the research. In *Proceedings of the ASEE National Conference* (Vol. 30). Retrieved from http://www.asee.org/file_server/papers/attachment/file/0003/3259/6219.pdf
- Boucher, B., Robertson, E., Wainner, R. & Sanders, B. (2013). "Flipping" Texas State University's physical therapist musculoskeletal curriculum: Implementation of a hybrid learning model. *Journal of Physical Therapy Education*, 27(3), 72-77.
- Burgess, M., Slate, J. R., Rojas-LeBouef, A., & LaPrairie, K. (2010). Teaching and learning in Second Life: Using the Community of Inquiry (CoI) model to support online instruction with graduate students in instructional technology. *The Internet and Higher Education*, 13, 84-88.
- Chen, Y., Wang, Y., Kinshuk, & Chen, N. (2014). Is FLIP enough? Or should we use the FLIPPED model instead? *Computers & Education*, 79, 16-27.
- Chen Hsieh, J. S., Wu, W.-C. V., Marek, M. W. (2016). Using the flipped classroom to enhance EFL learning. *Computer Assisted Language Learning*, 1-25. doi:10.1080/09588221.2015.1111910
- Cole, J. E., & Kritzer, J. B. (2009). Strategies for success: Teaching an online course. *Rural Special Education Quarterly*, 28(4), 36-40.
- Coniam, D., & Wong, R. (2004). Internet Relay Chat as a tool in the autonomous development of ESL learners' English language ability: An Exploratory study. *System*, 32, 321-335.
- Council of Europe. (2001). *Common European framework of references for languages: Learning, teaching, assessment*. Cambridge, UK: Cambridge University Press.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles, CA: SAGE.
- Deslauriers, L., & Wieman, C. (2011). Learning and retention of quantum concepts with different teaching methods. *Physical Review Special Topics, Physics Education Research*, 7, 1-6.
- Díaz, S. R., Swan, K., Ice, P., & Kupczynski, L. (2010). Student ratings of the importance of survey items, multiplicative factor analysis, and the validity of the community of inquiry survey. *The Internet and Higher Education*, 13(1-2), 22-30.

- Eun-ji, B. (2015). *Number of LINE users to top 700 mil. this year*. Retrieved from http://www.koreatimes.co.kr/www/news/tech/2015/02/419_173201.html
- Findlay-Thompson, S., & Mombourquette, P. (2014). Evaluation of a flipped classroom in an undergraduate business course. *Business Education & Accreditation*, 6(1), 63-71.
- Folse, K. (2006). *The Art of teaching speaking*. Ann Arbor, MI: Michigan University Press.
- Fulton, K. (2012). Upside down and inside out: Flip your classroom to improve student learning. *Learning & Leading with Technology*, 39(8), 12-17.
- Garrison, D. R. (2011). *E-Learning in the 21st century: A Framework for research and practice* (2nd ed.). New York, NY: Routledge.
- Garrison, D. R., & Akyol, Z. (2013). The Community of Inquiry theoretical framework. In M. G. Moore (Ed.), *Handbook of distance education* (pp. 104-119). New York, NY: Routledge.
- Garrison, D. R., & Akyol, Z. (2015). Toward the development of a metacognition construct for communities of inquiry. *The Internet and Higher Education*, 24, 66-71.
- Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2), 87-105.
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, 15(1), 7-23.
- Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, 10(3), 157-172.
- Garrison, D. R., Cleveland-Innes, M., & Fung, T. S. (2010). Exploring causal relationships among teaching, cognitive and social presence: Student perceptions of the community of inquiry framework. *The Internet and Higher Education*, 13, 31-36.
- Gazi, Z. A. (2009). Implementing constructivist approach into online course designs in Distance Education Institute at Eastern Mediterranean University. *The Turkish Online Journal of Educational Technology*, 8(2), 68-81.
- Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures*, 1, 77-89.
- Herreid, C. F., & Schiller, N. A. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching*, 42(5), 62-66.
- Hung, H. T. (2015). Flipping the classroom for English language learners to foster active learning. *Computer Assisted Language Learning*, 28(1), 81-96.
- Jamaludin, R., & Osman, S. Z. M. (2014). The Use of a flipped classroom to enhance engagement and promote active learning. *Journal of Education and Practice*, 5(2), 124-131.
- Ke, F., & Hoadley, C. (2009). Evaluating online learning communities. *Educational Technology Research and Development*, 57(4), 487-510.
- Koh, J. H. L., Herring, S. C., & Hew, K. F. (2010). Project-based learning and student knowledge construction during asynchronous online discussion. *The Internet and Higher Education*, 13, 284-291.
- Lowenthal, P. R., & Dunlap, J. C. (2010). From pixel on a screen to real person in your students' lives: Establishing social presence using digital storytelling. *The Internet and Higher Education*, 13, 70-72.
- Lucke, T. (2014). Using learning analytics to evaluate the effectiveness of the flipped classroom approach. In *Proceedings of the 25th Annual Conference of the Australasian Association for Engineering Education* (pp. 1156-1164). Barton, Australia: Massey University.
- McLaughlin, J. E., Griffin, L. M., Esserman, D. A., Davidson, C. A., Glatt, D. M., Roth, M. T., Gharkholonarehe, N., & Mumper, R. J. (2013). Pharmacy student engagement, performance, and perception in a flipped satellite classroom. *American journal of pharmaceutical education*, 77(9), Article 196. doi:10.5688/ajpe779196
- McLaughlin, J. E., Roth, M. T., Glatt, D. M., Gharkholonarehe, N., Davidson, C. A., Griffin, L. M., Esserman, D. A., & Mumper, R. J. (2014). The Flipped classroom: A Course redesign to foster learning and engagement in a health professions school. *Academic Medicine*, 89(2), 236-243.
- Moravec, M., Williams, A., Aguilar-Roca, N., & O'Dowd, D. K. (2010). Learn before lecture: A Strategy that improves learning outcomes in a large introductory biology class. *CBE-Life Sciences Education*, 9(4), 473-481.
- Mortensen, C. J., & Nicholson, A. (2014, July). *Improved student achievement through gamification and the flipped classroom*. Paper presented at the ADSA-ASAS Joint Annual Meeting, Kansas City, MO.

- Murdock, J. L., & Williams, A. M. (2011). Creating an online learning community: Is it possible? *Innovative Higher Education*, 36(5), 305-315.
- Overmyer, J. (2012). Flipped classrooms 101. *Principle* (September/October), 46-47.
- Peters, K. (2007). m-learning: Positioning educators for a mobile, connected future. *International Review of Research in Open and Distance Learning*, 8(2), 1-17.
- Pierce, R., & Fox, J. (2012). Vodcasts and active-learning exercises in a “flipped classroom” model of a renal pharmacotherapy module. *American Journal of Pharmaceutical Education*, 76(10), Article 196. doi:10.5688/ajpe7610196
- Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, 44(3), 159-175.
- Rubin, B., Fernandes, R., & Avgerinou, M. D. (2013). The Effects of technology on the Community of Inquiry and satisfaction with online courses. *The Internet and Higher Education*, 17, 48-57.
- Sahin A., Cavlazoglu, B., & Zeytuncu, Y. E. (2015). Flipping a college calculus course: A Case study. *Educational Technology & Society*, 18(3), 142-152.
- Sarawagi, N. (2014). A Flipped CS0 classroom: Applying Bloom’s taxonomy to algorithmic thinking. *Journal of Computing Sciences in Colleges*, 29(6), 21-28.
- Scherer Bassani, P. B. (2011). Interpersonal exchanges in discussion forums: A Study of learning communities in distance learning settings. *Computers & Education*, 56, 931-938.
- Shea, P., & Bidjerano, T. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments. *Computers & Education*, 55(4), 1721-1731.
- Simkins, S. P., & Maier, M. H. (2010). *Just-in-time teaching: Across the disciplines, across the academy*. Virginia, VA: Scott Stylus Publishing, LLC.
- Strayer, J. F. (2012). How learning in an inverted classroom influences cooperation, innovation and task orientation. *Learning Environments Research*, 15, 171-193.
- Sweeny, S. M. (2010). Writing for the instant messaging and text messaging generation: Using new literacies to support writing instruction. *Journal of Adolescent & Adult Literacy*, 54, 121-130.
- Tucker, B. (2012). The Flipped classroom. *Education Next*, 12(1), 82-83.
- Wu, W. C. V., Marek, M., & Chen, N. S. (2013). Assessing cultural awareness and linguistic competency of EFL learners in a CMC-based active learning context. *System*, 41(3), 515-528.
- Yang, J. C., Quadir, B., Chen, N. S., & Miao, Q. (2016). Effects of online presence on learning performance in a blog-based online course. *The Internet and Higher Education*, 30, 11-20.
- Yang, Y. F. (2013). Exploring students’ language awareness through intercultural communication in computer-supported collaborative learning. *Educational Technology & Society*, 16(2), 325-342.
- Zappe, S., Leicht, R., Messner, J., Litzinger, T., & Lee, H. W. (2009, June). “Flipping” the classroom to explore active learning in a large undergraduate course. Paper presented at 2009 Annual Conference & Exposition, Austin, TX.

Appendix A

The pre-test / post-test for the conventional instruction

I. Paragraph reading:

1. After one finds a position, achieving job satisfaction depends a lot on being able to cope with the demands of the job. Sometimes a lack of necessary interpersonal skills can create problems. Some people may be highly productive, but if they are unable to work well with other people, they may find it difficult to get ahead. They may not be suited to having managerial positions. For a manager, the inability to delegate responsibility to others makes it necessary to work overtime; by taking on too many responsibilities, the manager may create a stressful job situation for everyone. Rather than advance in the company, this “workaholic” may experience job burnout within a few years and have to seek a less demanding job to alleviate the stress, if he or she doesn’t have a heart attack first.
2. Not only individual schools, but states and nations may differ in the amount of emphasis they place on athletic development. Some governments provide funding for athletic programs, often with an eye on the Olympic Games. Promising young athletes often have opportunities to progress rapidly in rigorous training programs. In some cases athletes are encouraged not only to perform well and perhaps set a new world’s record, but to win at any cost. A modern problem in the sports world is athletes’ use of drugs to enhance their performance and increase their chances of winning. Laws have been created to ban the use of such drugs.
3. For some people, having enough money to invest seems to be only a dream, since it is all they can just to make ends meet. A family may have enough to live on, enough to meet their needs, but they might have to struggle to pay off their debts. In this kind of situation it is necessary to plan expenditures carefully and keep to a budget, always looking for ways to cut corners. If a person earns a decent living and is able to follow a budget, even an average paycheck can go a long way.

II. Comprehension questions:

1. What problems can be encountered by a manager who can’t delegate responsibility?
2. What are some of the concerns people have about professional sports?
3. What are some of the steps in achieving financial security?

The pre-test / post-test for the flipped instruction

I. Paragraph reading:

1. Most time management plans include an orderly desk and desktop for doing all paperwork and information processing, with a well-organized filing system for hard copies of letters, bills, and so on, and orderly file folders on the computer for electronic copies of the same. The desk drawers are kept tidy so that nothing gets misplaced, and the top and desktop are kept clear in order to eliminate distractions. Ideally, this orderliness is reflected in the rest of the house, where there is “a place for everything, and everything in its place.”
2. Some people remember childhood as being a rather lonely time, with nobody to play with; they may have invented imaginary playmates to take the place of real ones. Most children, though, remember having “best friends” with whom they always played, as well as a group of neighborhood kids which functioned like a small community: some kids were looked up to, some get along with everyone, and a few never seemed to fit in. Childhood experiences leave permanent impressions on people, and more than one unhappy adult remembers being made fun of by other children, teased with a nickname like “Fatty” or “Four eyes,” or always getting left out of games.
3. There is a downside to all this e-commerce, however. Pop-up ads, banners, and junk mail (also called spam) are the Internet’s version of advertising, and just as commercials interrupt television shows, so do advertisements interrupt the surfer’s leisure. For some people, closing the pop-up windows and deleting all the spams is an annoyance that takes up much of the time they should be enjoying. Firewalls and spam

filters are programs that help surfers to maintain security, which is a constant worry because of viruses, hackers, spyware, and identity theft.

II. Comprehension questions:

1. According to the time management experts, what are some time-saving techniques?
2. What are some games in which children use their imaginations?
3. What are some of the problems caused by the Internet?

Appendix B

Community of Inquiry Survey

This survey is to understand what your overall learning experiences were in the current instruction you have taken. There is no right or wrong answer. Please circle the answer which best reflects your overall thoughts about each statement. Your answers are ANONYMOUS and CONFIDENTIAL. Thank you in advance for your time.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
	1	2	3	4	5	
1	In the current instruction, the instructor clearly communicated important course topics.	1	2	3	4	5
2	In the current instruction, the instructor clearly communicated important course goals.	1	2	3	4	5
3	In the current instruction, the instructor provided clear instructions on how to participate in course learning activities.	1	2	3	4	5
4	In the current instruction, the instructor clearly communicated important due dates/time frames for learning activities.	1	2	3	4	5
5	In the current instruction, the instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	1	2	3	4	5
6	In the current instruction, the instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	1	2	3	4	5
7	In the current instruction, the instructor helped to keep course participants engaged and participating in productive dialogue.	1	2	3	4	5
8	In the current instruction, the instructor helped keep the course participants on task in a way that helped me to learn.	1	2	3	4	5
9	In the current instruction, the instructor encouraged course participants to explore new concepts in this course.	1	2	3	4	5
10	In the current instruction, instructor actions reinforced the development of a sense of community among course participants.	1	2	3	4	5
11	In the current instruction, the instructor helped to focus discussion on relevant issues in a way that helped me to learn.	1	2	3	4	5
12	In the current instruction, the instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.	1	2	3	4	5
13	In the current instruction, the instructor provided feedback in a timely fashion.	1	2	3	4	5
14	Getting to know other course participants gave me a sense of belonging in the current instruction.	1	2	3	4	5
15	In the current instruction, I was able to form distinct impressions of some course participants.	1	2	3	4	5
16	Classroom communication is an excellent medium for social interaction.	1	2	3	4	5
17	I felt comfortable conversing through the class conversations.	1	2	3	4	5
18	I felt comfortable participating in the course discussions.	1	2	3	4	5
19	I felt comfortable interacting with other course participants.	1	2	3	4	5
20	I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	1	2	3	4	5
21	I felt that my point of view was acknowledged by other course participants.	1	2	3	4	5
22	Class discussions help me to develop a sense of collaboration.	1	2	3	4	5
23	Problems posed increased my interest in course issues.	1	2	3	4	5
24	In the current instruction, course activities piqued my curiosity.	1	2	3	4	5
25	In the current instruction, I felt motivated to explore content related questions.	1	2	3	4	5

26	I utilized a variety of information sources to explore problems posed in the current instruction.	1	2	3	4	5
27	In the current class, brainstorming and finding relevant information helped me resolve content related questions.	1	2	3	4	5
28	Class discussions were valuable in helping me appreciate different perspectives.	1	2	3	4	5
29	In the current instruction, combining new information helped me answer questions raised in course activities.	1	2	3	4	5
30	In the current instruction, learning activities helped me construct explanations/solutions.	1	2	3	4	5
31	Reflection on course content and discussions helped me understand fundamental concepts in the current instruction.	1	2	3	4	5
32	I can describe ways to test and apply the knowledge created in the current instruction.	1	2	3	4	5
33	In the current instruction, I have developed solutions to course problems that can be applied in practice.	1	2	3	4	5
34	I can apply the knowledge created in the current instruction to my work or other non-class related activities.	1	2	3	4	5