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Phone-based Interaction and Development of L2 Oral Fluency

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Whereas the telephone has been employed as an alternative pedagogical device in many East Asian countries (e.g., Korea, China, the Philippines etc.), the impacts of telephone communication to development of adult second language (L2) learning have been rarely investigated (e.g., Kim, 2012 an exception) in the field of second language acquisition (SLA). Acknowledging the absence of empirical research, this paper examines benefits of phone-based interaction (PBI) to a learner's development of L2 performance, particularly, L2 oral fluency. The study observed systematic and dynamic development of oral L2 fluency from an adult learner's speech data, who participated in the two-month PBI exclusively in English. Oral fluency was measured by temporal variables (e.g., speech rates and pause rates) and hesitation phenomena (e.g., repetition, self-correction, and false starts) over time. The results of the study illustrated that the learner achieved faster speech rates and lower pause rates after the two-month period of PBI, which is an indication of development of L2 fluency. The learner's development of L2 fluency was also supported by a decrease of repetition, self-correction, and false starts after two months. Therefore, the study suggests that PBI positively affects adult learners' L2 fluency, which in turn may facilitate development of L2 proficiency.

[phone-based interaction/oral fluency]

I. INTRODUCTION

Since the 1990s, phone-based interaction (PBI) has been considered one of the alternative pedagogical methods to learn English as a foreign language (EFL) in Korea. According to news reports (Hong, 2008 cited in Kim, 2012), more than 160 PBI companies have been established, and they currently (2008) invest approximately 200 million dollars a year for that business. As PBI is individualized, meaning-based, and

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authentic, it can offer a greater amount of output-based practice, which can positively affect learners' development of L2 oral fluency. However, very few studies in the field of second language learning and education (e.g., Kim, 2012) have investigated the role of a telephone as a pedagogical tool to develop learners' L2 oral skills. Also, there is very limited amount of research studying how telephone-based speech communication contributes to L2 learner's speaking ability. PBI's one-on-one conversation might provide more opportunities for L2 production compared to traditional L2 classrooms. As PBI provides learners a private sphere to talk in English, the learners with high face-saving predisposition would feel less difficulty to start and continue their English conversation. Regarding these expected pedagogical benefits of telephone-based communication, the present case study attempts to examine whether an adult EFL learner with high face-protected orientation can develop his/her English oral fluency through PBI.

II. LITERATURE REVIEW

The benefits of PBI to L2 development were first examined by Kim (2012). In this study, she observed whether an EFL learner's participation in PBI positively affects development of L2 communicative competence (Canale, 1983; for review see Lee & Lee, 2002). To be precise, she observed whether an EFL learner who has low willingness to communicate (McCrosky, 1977, 1992, 1997; and see Kim, 2012 for summary) and high face-protected orientation would benefit more considerably from PBI than traditional EFL classrooms. After a period of PBI, the results of Kim (2012) showed that the learner improved his grammatical competence, sociolinguistic competence, discourse competence, and strategic competence significantly over time. Moreover, the exit questionnaires and post interview indicated that PBI experience positively influenced the learner's willingness to communicate and intrinsic motivation that in turn facilitates the learner's L2 development. As a result, the author concluded that PBI positively affects learners' development of communicative competence, even for those learners who experienced less successful development in the traditional L2 classrooms due to their limited degree of willingness to communicate and the high degree of anxiety. Based on these results, she stated that telephones serve as an effective educational device to develop learners' L2 communicative skill and to increase their willingness to communicate in L2.

Although Kim's previous study indicates PBI can aid development of L2 competence, no studies have looked into the impact of PBI to learners' L2 performance. According to Chomsky (1965), language competence refers to unconscious knowledge of possible grammatical structures in an idealized speaker while language performance refers to actual

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production and comprehension of language in specific instances of language use. In other words, the former deals with what learners know while the latter focuses on what learners can do actually. As a result, acquisition of language competence does not guarantee development of language performance, as learners would fail at applying their linguistic knowledge to their actual L2 output. For this reason, the learners who have proper knowledge of the appropriateness of an utterance to a particular situation (Hymes, 1972) would not be demonstrated by fluent L2 performance.

Language performance is primarily demonstrated by the fluent use language. According to Fillmore (1979), oral fluency in native language (L1) can be judged in a number of ways, such as abilities to talk at length with little number of pauses, to talk with coherency, to talk appropriately in a wide range of contexts, to talk creatively, and imaginatively to express novel ideas. Yet, in L2 classroom, oral fluency has been commonly defined as "the production of language in real time without undue pausing or hesitation" (Ellis & Barkhuizen, 2005, p. 139). Also, previous research (e.g., Schmidt, 1992; Raupach, 1987; Carlson et al. 1989; Lennon, 1990; Faerch & Kasper, 1984) explained learners' oral fluency as an automatic procedural skill, which emphasizes "the performance aspect of actually doing something in a real time" (Schmidt, 1992, p. 359). Thus, "fluent speech is automatic, not requiring much attention of effort, and nonfluent speech is effortful and requires a great deal of attention, so that nonfluent speakers exhibit many hesitations" (Schmidt, 1992, p. 358).

Automatic process of language production, which contributes to the oral fluency, can be developed gradually through practice. For this reason, students in language classrooms should be encouraged to "seek out opportunities for practice," that involves "authentic language input and interaction," and "corrective feedback from others" (Brown, 2007, p. 117). Also, Output Hypothesis (Swain, 1985, 1995) claims that the learners' comprehensible output develops the "automaticity in interlanguage production" (Gass & Selinker, 2001, p. 278). Thus, class fluency-oriented activities should encourage students to have spontaneous language production for genuine L2 communication (Brumfit, 1984).

While there have been a great body of studies investigating learners' L2 fluency (e.g., Levelt, 1989; Nation, 1989; Towell, 1987; Towell et al., 1996; Wiese, 1984; Skehan & Foster, 1999), most of the studies looked at learners' development of L2 fluency in the face-to-face L2 learning context. Based on the substantial foundation of L2 fluency research, the current study investigated influence of PBI to an adult EFL learner's L2 oral fluency throughout the period of PBI. The current research posited the following research question: does PBI facilitate development of an EFL learner's L2 oral fluency?

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III. RESEARCH DESIGN

1. The Participant

One Korean-speaking learner of English as a foreign language (EFL) participated in this study. The participant was a male, 26-year-old college student majoring in Electronic Engineering at Hong-ik University in Seoul, Korea. Table 1 provides brief information on learner-internal variables (e.g., English proficiency, prior English education, personality, aptitude, anxiety and motivation) and techniques employed to collect those variables (see Kim, 2012 for more of his biographical data information).

TABLE 1

Learner's Internal Variable and Data Collection Techniques

Learner-internal variables	Techniques	Findings
English proficiency	Self-assessment	Intermediate level
	TEPS	Intermediate level
Prior English education	Interview	Formal L2 learning context only, no study abroad experience to English-speaking countries
Personality	Myers-Brigg Types Indicator (MBTI)	ISTP: Very introvert than extrovert, very sensing than intuitive, clearly thinking than feeling, and clearly perceiving than judging
Language Aptitude	Modern Language Aptitude Test (MLAT)	78 points out of 192
Degree of anxiety	Interview	Easily get embarrassed when speaking in English, high self-consciousness on errors
Motivation	Questionnaire	Higher integrative motivation than instrumental motivation for L2 learning

2. Materials

During PBI, the participant interacted with the researcher in English over the phone. The researcher was a highly-advanced, near-native speaker of English, who was studying Linguistics at Georgetown University in Washington DC, USA. One book published in Korea was chosen by the researcher in order to guide the meaning-based interaction. Each session of PBI dealt with a chapter of the book, consisting of new vocabulary, a situational dialogue, and pronunciation and intonation training. A minimized amount of grammar instruction was provided only when it was requested by the learner.

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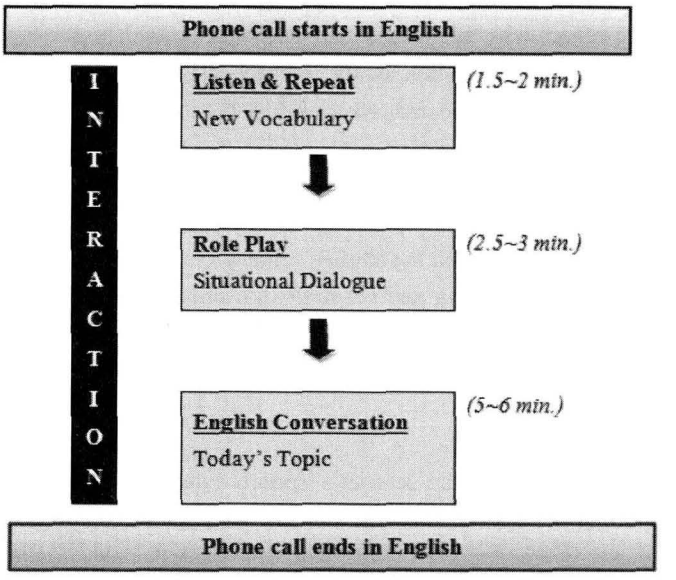
3. Procedures

Figure 1 illustrates a session of PBI, which was repeated over twenty days. Everyday, PBI started with target vocabulary practice (1.5 ~ 2 minutes), followed by role-play (2.5 ~ 3 minutes) and English conversation (5 ~ 6 minutes) on selected discussion topics (e.g., trip to Korea, gender hierarchy, favorite books, night life in Korea etc.). One session of PBI lasted approximately 10 minutes. The procedures of PBI in this research attempted to imitate the current PBI program in Korea as much as possible by involving such steps as vocabulary learning, pronunciation practice and intonation training. By doing so, the study could draw more valid results to evaluate the effectiveness of PBI. All PBI sessions were only mediated in English. The interaction between the researcher and the participant was audio-recorded by the researcher.

FIGURE 1

Procedure for Daily PBI



4. Data Collection

1) Transcriptions

The English conversation between the learner and the researcher was narrowly transcribed so the learner's disfluency markers can be identified.

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2) Stimulated Recall

In order to identify natures of hesitation markers and pauses, a stimulated recall protocol was employed. The stimulated recall is known as one of the off-line introspective methods to observe the learners' mental processes. In this method, participants are prompted "to recall thoughts they had while performing a task or participating in an event (Gass & Mackey, 2000, p.17)." Bloom (1954) stated that stimulated recall enables the participants "to relive an original situation with great vividness and accuracy if he is presented with large number of cues or stimuli which occurred during the original situation" (p.25). In SLA research, stimulated recall methodology has been widely used by the researchers (e.g., DiPardo, 1994; Dornyei & Kormos, 1998; Gass, 1994; Mackey et al., 2000, 2007; Paribakht & Wesche, 1999; Swain & Lapkin, 2002; Tyler, 1995) to observe the learners' cognitive processes (e.g., search, retrieval, or decision making) through their verbal report.

In this research, a voice file and its transcription were sent to the participant through the online messenger in order to detect the nature of hesitations and pauses made by the participant. After closely reading and listening to his own oral production, the learner was asked to verbally report why he paused and hesitated at each time (e.g., for recalling vocabulary, pronunciation or grammar, or for comprehension). The learner's verbal reports on his hesitation markers were also audio recorded by the researcher.

3) Coding

The current research investigated the learner's fluency in terms of (1) temporal variables related with the speed of speaking and (2) hesitation phenomena related with disfluency (Ellis & Barkhuizen, 2005, p. 156; Lennon, 1990; Wiese, 1984). The learner's speech rate and the number of pauses were analyzed for the temporal variables.

(1) Temporal Variables

For the temporal variables, the learner's speech rate and number of pauses were examined. Regarding the speech rate, the number of syllables of pruned words, which excluded disfluency, were divided by the learner's total delivery minutes. As for the number of pauses, the total number of filled (e.g., *"er," "erm," "mm,"*) and unfilled pauses (Ellis & Barkhuizen, 2005, p. 157) per AS-Unit (Foster et al., 2000) was calculated. All pauses that lasted more than one second were also transcribed and classified into four different criteria in accordance to learner's reports in the stimulated recall: pauses for grammar (i.e., thinking grammar to create a phrase, clause or sentence), lexicon (i.e., looking for English vocabulary corresponding to L1 words), comprehension (i.e., recalling what the interlocutor said and understanding it) and pronunciation (i.e., recalling the accurate pronunciation of the word before pronounce it).

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(2) Hesitation Phenomena

Hesitation phenomena involve the learner's false starts, repetitions, and self-corrections. False starts refer to "an utterance which is begun and then either abandoned altogether or reformulated in some way" (Foster et al., 2000, p.368). Repetitions indicate "the speaker repeats previously produced speech" (Foster et al., 2000, p. 368). In terms of self-correction, both reformulation, that is "phrases or clauses that are repeated with some modification" (Ellis & Barkhuizen, 2005, p. 157), and replacement, which refers "lexical items that are immediately replaced by other lexical items" (Ellis & Barkhuizen, 2005, p. 157) were included together.

IV. RESULTS

1. Temporal Variables

In general, the analyses found negative correlations between speech rates and the number of pauses per AS-Unit; when the learner showed high speech rate, the number of pauses was lower while when his speech rate was low, the number of pauses was high (Figure 2 and Figure 3). For example, Figure 2 indicates that the learner's speech rates had gradually increased until Day 14, and it is subsequently supported by the gradual decrease of pauses in Figure 3. The learner's highest speech rate (145 syllables per minute) and lowest number of pauses (28.8% per AS-Unit) occurred on Day 14. On this day, he produced 60% more syllables and 50% less pauses (28.8%) compared to Day 1 (86, 46.3%) approximated.

FIGURE 2
Temporal Variable: Learner's Speech Rates over Time

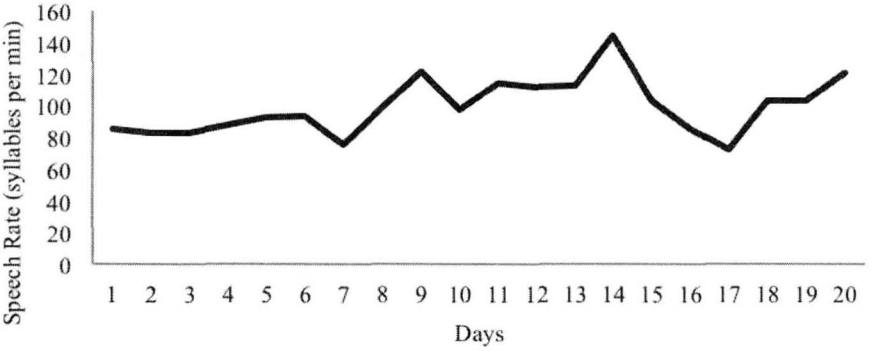

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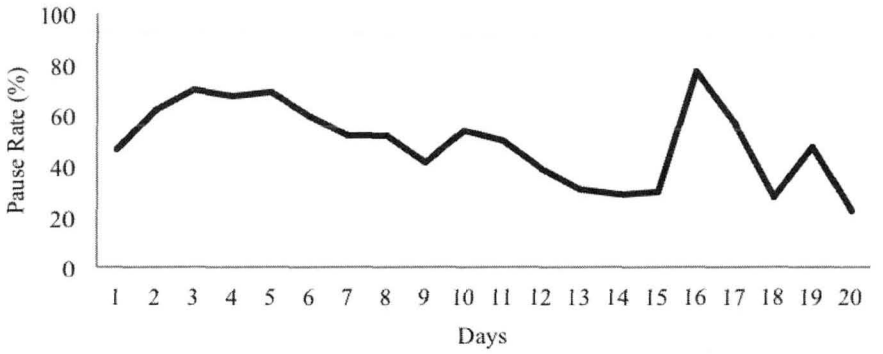
FIGURE 3
Temporal Variable: Learner's Pause Rates (%, pauses per AS-Unit) over Time



However, the learner showed evidence of gradual decrease in speech rates for the next three days, Day 15 (103 syllables per mins), 16 (86 syllables per mins) and 17 (73 syllables per mins). In addition, learner showed a slight increase in pausing on Day 15 (30% per AS-Unit), a sudden increase on Day 16 (77.1% per AS-Unit), and on Day 17 (56.8% per AS-Unit).

For the next three days, Day 18, 19 and 20, the learner showed development in his speech rates (103 syllables, 103 syllables, and 121 syllables per mins, respectively) and pausing (27.9%, 47.3%, and 22.4% per AS-Unit, respectively) simultaneously. Therefore, on the last day of PBI, the learner showed 40% faster speech rates and 20% less pause rates compared to the first day of PBI.

As a further analysis, the current research examined the learner's reason for making pauses (i.e., thinking grammar, searching lexicon, difficulties in comprehension, recalling pronunciation) through the stimulated recall protocol (Figure 4). Figure 4 shows that the learner paused the most frequently for grammar during PBI. In particular, on Day 4, the learner's pausing stemmed from the concern about grammar 100%. However, as shown by the results from Day 17 and Day 18, the learner tended to reduce the use of pause for grammar towards the end of the session. Instead, the proportion of pause for lexicon was relatively increased on these two days. The figure additionally indicates that he paused least frequently to recall; it only appeared on Day 1 (5.00%), Day 2 (2.00%), and Day 8 (4.00%).

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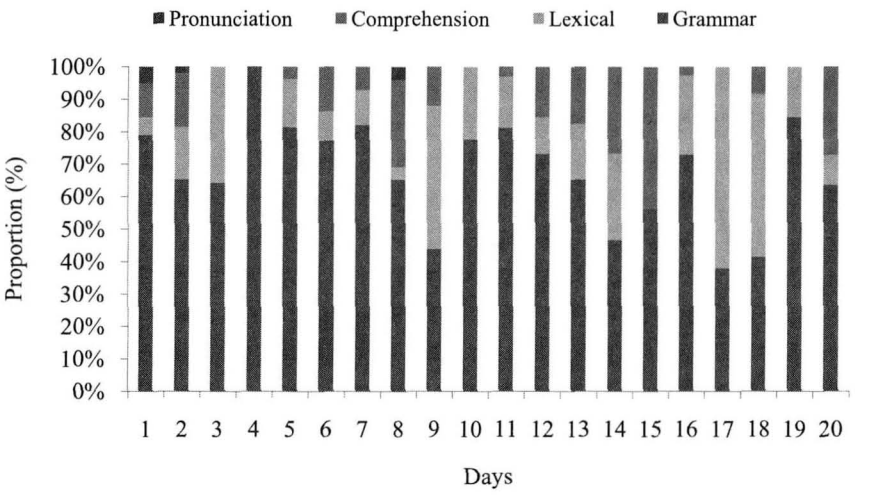
FIGURE 4
Temporal Variable: Proportion of Pauses



2. Hesitation Phenomena

The current research operationalized hesitation phenomena as the number of repetition, self-correction and false start; each criterion was divided by a total number of the AS-Unit. Figure 5 represents the percentage of the learner's hesitation phenomena throughout the period of PBI. As for these hesitation markers, repetition showed gradual decrease over time while other two hesitation markers indicated slight decrease over time.

The learner's repetition (Figure 5) showed a negative correlation with his speech rates; less number of repetitions per AS-Unit indicates faster speech rates. Therefore, for the earlier days, the learner produced more repetitions and it correlates with his lower speech rates. In terms of self-correction and false start, the analyses indicated a decreasing trend towards the end of the session. As the learner did not have many indications of self-correction and false start, no considerable decrase was identified from these two hesitation phenomena. However, the data for these two hesitation markers are in line with the other hesitation marker, repetition, in terms of less number of repetition and false start on Day 20 than Day 1.

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FIGURE 5
Hesitation Phenomena:
Repetition, Self-correction, and False Start per AS-Unit (%)



V. DISCUSSION

1. Benefits of PBI to Development of L2 Oral Fluency

The present research found that an EFL learner who participated in two-month period of PBI improved his L2 oral fluency. The improvement was shown by increased speech rates and decrased pauses per AS-Unit over time. The decrease of the hesitation phenomena, such as repetition, self-correction, and false-start, subsequently confirmed his development of oral fluency. As a result, the study indicates that 10 minutes of daily conversation over the phone can faclitate EFL learners' improvement of oral fluency.

The benefits of PBI seems to be attributed to its one-on-one conversation mode that leads learner's active and intensive participation within the private, controlled sphere. Recall that the participant in this study was a quiet and an introvert EFL learner who had high anxiety and face-protected predisposition. Due to his individual characteristics and personality, he reported that he had been reluctant to participate in English conversation actively in conversation-based L2 classroom. However, during PBI, he participated in English one-on-one conversation actively, and it resulted in gradual development in oral fluency. By having a conversation in one's own private space, the learner did not have to worry about losing his face due to the errors that he makes. As a result, the English

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learner can practice speaking English more intensively, and it possibly leads the learner to gain better English oral fluency through the increased amount of practice. This finding can support Schmidt's (1992) claim that L2 oral fluency can be facilitated gradually by repeating practices because the practices automatize learners' process of language production. In this sense, PBI seems to push the learner to produce more output through one-on-one conversation, which in turn faciliates automatic L2 processing.

A further analysis indicated that the amount of pausese for grammar tended to be reduced towards the end of PBI sessions, suggesting that the learner's development in L2 fluency might have been positively influenced by less number of puases for grammar. It is possible that the learner showed more concern about L2 grammar because he had one year of grammar-based English instruction in previous years, and it might have increased his awareness on grammatical accuracy at first. However, as time goes by, his concern on grammar seems to be reduced. In this sense, this finding also supports that the practice of English oral production through daily PBI can help learners' automatization in L2 production (Schmidt, 1992), which ultimately enhances L2 learners' fluency (Swain, 1995; Swain & Lapkin, 1995).

Therefore, as the results of the current research describe, 10 minutes of daily PBI may contribute to the development of oral fluency for EFL students. Also, as the tendency of development showed a gradual and a modest increase, the learner's oral fluency would improve more with prolonged amount of participation in meaningful one-to-one L2 interaction over the phone.

2. PBI, Output Practice, and Formulaic Chunks

The learner's increased use of L2 chunks seems to be closely correlated to his gradual improvement of L2 oral fluency. N. Ellis (2005, p. 333) stated that practices lead learners to bind adjacent perceptual and behavioral sequences more strongly when they process them. Consequently, "the constructed message itself will get chunked together," and the chunked utterances become "an entrenched formula, a whole produce that can be looked up from memory the next time it is required." The importance of chunking as a learning mechanism and its significance for proceduarlization and automatization of L2 knowledge have been discussed by other researchers (e.g., Anderson, 1986; Newell, 1990; Newell & Rosenbloom, 1981). Also, Rescorla and Okuda (1987) noted that a Japanese-speaking child learning English produces larger number of creative and novel sentences by using a small number of patterns or modules. Thus, it seems that fluent speech can be facilitated by a routinized or creative use of L2 chunks.

The learner's discursive pattern in greetings offers evidence of routinized use of formulaic chunks. From Day 1 to Day 10, the learner showed a less patternized way of

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greetings when he responded the researcher's (R) question, *How are you?*

Example 1. Day 9: Greetings

(1) R: Hello?
(2) Learner: Hi.
(3) R: How are you?
(4) → **the learner: (pause) I'm so good.**
(5) R: So good?
(6) Learner: No.
(7) R: No?
(8) → **Learner: (pause) I (pause) am (pause) No no.**
(9) R: No?
(10) → **Learner: (pause) So so.**
(11) R: So so?
(12) Learner: Yeah. How are you?
(13) R: Just fine. So how was your exam yesterday?

Greetings between the learner and the researcher on Day 9 indicate that the learner made pauses frequently when he attempted to explain his feeling or events taking place around him. As shown in line (8), he tried to explain something more about himself and wanted to deliever meaningful messages to the researcher. However, after realizing that creating a sentence in English is not too easy for him, he ended his turn as "So so" in line (10).

Example 2. Day 11: the learner's greeting patterns

(1) R: Hello?
(2) Learner: Hi!
(3) R: How are you? Long time no see!
(4) → **Learner: Fine, fine thank you. And you?**
(5) R: Good.

Example 3. Day 16: the learner's greeting patterns

(1) R: Hello?
(2) Learner: Hi
(3) R: Hello. How are you?
(4) → **Learner: Fine, thank you. And you?**
(5) R: Good. Do you feel better today?
(6) → **Learner: Yes, I feel better than yesterday.**

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On the other hand, Example 2 and Example 3 illustrate that he does not puase frequently while greeting. The greeting patterns on Day 11 in Example 2 show that he acquired a skill to greet in a patternized way (Fine, thank you. And you?, line 4). This formulaic chunk is more easily found in the following Example 3 above. Even though the learner did not feel good during those days due to his personal issue, he answered "Fine, thank you. And you?" in line 4. Thus, the given three examples support that he developed scripts for conversation, and it may have decreased number of disfluency markers, which eventaully improved his oral fluency.

The learner's creative use of L2 formulaic chunks can be found in his use of relative clauses (e.g., which is..., who is...) to elaborate the information in main cluases; he learned a skill to use relative sentences when he wanted to provide specific descriptions for the objects in the main clause. Until he has acquired an ability to produce relative sentences skillfully, he had tended to make pauses more frequently for a new relative clause.

Example 4. Day 11: Relative clause formation

(1) R: So what is your favorite email account?
(2) Learner: Gmail
(3) R: Why?
(4) → **Learner: Because (pause) my girlfriend (pause) who lives in**
(5) **Germany (pause) sends a mail (pause) to my gmail account.**
(6) → **R: Oh, does she email you?**

Example 5. Day 12: Relative clause formation

(1) Learner: Ah, (pause) Nowadays, it's warm in Korea.
(2) R: Oh, that's good.
(3) → **Learner: Yeah, so (pause) I can wear (pause) the (pause) jacket**
(4) **(pause) which my girlfriend bought for me.**

Both line (5) in Example 4 and line (6) in Example 5 above show that the learner made pauses when he had to start a new relative clause which explains the preceding main clause. Also, the learner reported in the stimulated recall session that he usually took time to think about relative clause formation.

Example 6. Day 17: Relative clause formation

(1) Learner: I taught my student and I wanted to buy a laptop.
(2) R: Oh, okay. Did you buy the laptop?
(3) → **Learner: No, I found a laptop which I want to buy but it was a little expensive.**

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However, his skill acquisition for relative sentences led him to produce it without pauses as the time goes by. Example 6 indicates that the learner possibly acquired an ability to formulate relative sentences more skillfully, and it seems to suggest that his creative use of chunks made him possible to produce some English sentences more fluently.

2. Explanations for Sudden Decrease in L2 Oral Fluency

The factor that triggered the decrease of speech rate and increase of pauses (e.g., Day 16 and Day 17) might be the task complexity, which is "the result of attentional, memory, reasoning, and other information processing demands imposed by the structure of the task on the language learner" (Robinson, 2001, p. 29). Robinson (2001, p.30) identified two dimensions differentailly affecting the task complexity, "resource-directing dimensions" and "resource-depleting dimensions." According to him, resource-directing dimensions increase task complexity with "the greater resource demands which can be met by specific features of the language code (i.e., ± few elements, ± here-and-now, ± no reasoning demands)" whereas resource-depleting dimensions raise task complexity with "the greater demands on attention and working memory (i.e., ± planning, ± single task, ± prior knowledge)." This indicates that a complex task requires more cognitive load than a simple task does, thus, the learner's performance on a complex task may show higher error rate, slower time to complete the task, and more susceptibility to interference from competing tasks (Robinson, 1995; Wickens, 1989).

In this research, different task complexity might refer to the different topics given on each day, and the learner's lower speech rate and more number of pauses on Day 16 and Day 17 might have been affected by the factor of resource-directing dimensions, (i.e., reasoning demands) and resource-depleting dimensions (i.e., dual tasks), respectively. Table 2 below compares the results of the learner's L2 oral performances on Day 16 and Day 17 to Day 14, the day that he showed relatively better performance than other days.

On Day 16, different gender roles in Korean society was brought up as a topic, and the learner was asked to express Korean culture and gender differences. Therefore, he had to make his own argument sentences and supporting sentences to deliver and justify his opinions. In contrast, the conversational topics on Day 14 was chosen based on the learner's everyday life story, which would require only simple information transmission. Regarding this, the topic on Day 16 might have required some specific features of language code (resource-directing) to express his thoughts logically by considering argument structure (i.e., topic sentence, supporting sentences) and logical connectors (i.e., if, then, therefore, because), which might increase syntactic complexity (i.e., more numbers of embedded /subordinated/ relative clauses) This possibility is shown by his

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extremely increased concern about grammar (82.9%) on Day 16 compared to that of Day 14 (grammar: 46.7%).

TABLE 2

Comparison of Day 16 and Day 17 to Day 14

	Conversational topics	Speech rate	Pause/AS-Unit	Pause classification
Day 14	Best place for honeymoon	145	28.8%	Grammar: 46.7% Lexical: 26.7% Comprehension: 26.7% Pronunciation: 0%
Day 16	Gender hierarchy in Korean society	86	77.1%	Grammar: 82.9% Lexical: 24.3% Comprehension: 2.7% Pronunciation: 0%
Day 17	Price of laptops	73	56.8%	Grammar: 38.1% Lexical: 61.9% Comprehension: 0% Pronunciation: 0%

Also, the topic on Day 17 (i.e., Price of laptop) might have involved dual tasks involving reading numbers and simple information transmission. Korea and America have different systems to name each unit. Therefore, some specific Korean vocabulary representing some units of number, such as *man* (ten thousand), does not exist in English Therefore, 30,000 is simply *sam*(3)-*man*(10,000) in Korean while it is thirty(30)-thousand(1,000) in English. Also, 400,000 is *sa*(4)-*sip*(10)-*man*(10,000) whereas it is four(4)-hundred(100)-and-thousand(1,000) in English. Regarding the different systems of naming the units, the learner seemed to have more time to converse all of Korean number reading systems to that of American to express the price of laptop, such as 300,000 won (=300 US dollars) or 400,000 won (=400 US dollars); this effort might be represented by the learner's increased concern about lexical searching on Day 17. Consequently, his oral L2 production became less fluent on Day 17 due to the topic which required multiple cognitive processing: mathematical processing and linguistic processing.

Therefore, the results suggest that the learner's sudden decrease in the oral fluency might have been caused by different levels of task complexity and degrees of cognitive demands the tasks require.

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VI. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

As the learner showed a gradual increase in the speech rates and a gradual decrease in the number of pausing and repetition, it can be concluded that 10 minutes of PBI positively affect development of L2 fluency. It seems that PBI can be more effective for those learners who did not experience significant development in L2 conversation classrooms due to their lower willingness to communicate, which might be caused by their introversion, high anxiety level, and high face-protecting predisposition as PBI offers one-on-one English conversation in a private sphere. The one-to-one English conversation pushes learners to produce more output; also, speaking in English in a private sphere reduces the learners' face-protecting tendency and L2 anxiety. Based on these findings, it can be concluded that PBI can provides L2 learners the opportunities to practice English orally, which ultimately results in the learners' oral fluency development. The results of the current study may be more meaningful to the learners in the EFL context, which has very limited amount of authentic L2 resources and L2 input available outside the language schools.

Yet, L2 oral fluency does not entirely represent development of L2 proficiency; there are more criteria (i.e., L2 accuracy, complexity etc) that should be measured to prove the effectiveness of PBI more thoroughly. Although fluency is considered to be one of the most influential factors to determine learners' overall L2 proficiency (Kim, 2009), the benefits of PBI to development of oral fluency is not necessarily equivalent to overall development of L2 proficiency. It is possible that L2 accuracy and complexity might not improve very effectively due to limited time of daily interaction and limited provision of grammar instruction. Therefore, future study needs to explore how PBI affects other aspects of L2 proficiency, not limited to oral fluency.

Another limitation can be stemmed from the design of the study. Firstly, the current study is a case study; therefore, the result cannot be easily generalized to all EFL populations. Secondly, this research involves less rigid research design. Even though the study operationalized and quantificated the learner's oral fluency improvement into some criteria, the current research did not include pretests and posttests to measure the impact of PBI more objectively. Also, the research did not control the difficulty levels of conversational topics; thus, the topic itself might have been a moderating variable affecting the learner's L2 fluency. Therefore, future studies investigating this area should involve more number of EFL populations and design the research more rigidly in order to enhance research validity and reliability.

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Examples in: English
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